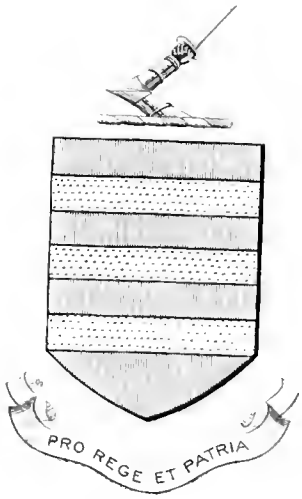


MEDICAL RECORD

A Weekly Journal of Medicine and Surgery

EDITED BY

THOMAS L. STEDMAN, A.M., M.D.

ALEXANDER SPINGARN, M.D.,
ASSISTANT EDITOR.

HENRY H. SCHROEDER, M.D.,
INSURANCE EDITOR.

EDITORIAL STAFF

CHARLES A. CLOUTING, M.D.
EDWARD PREBLE, M.D.
E. FRANKLIN SMITH, M.D.
B. MICHAILOVSKY, M.D.
R. J. E. SCOTT, M.D.
RALPH G. STILLMAN, M.D.
SUSAN M. WOOD.

Volume 82

JULY 6, 1912—DECEMBER 28, 1912

WILLIAM WOOD AND COMPANY

1912

LIST OF CONTRIBUTORS TO VOL. LXXXII.

AGRAMONTE, ARISTIDES, Havana, Cuba.
ALLAN, JOHN, Liverpool, Eng.
ALLAN, WILLIAM, Charlotte, N. C.
ALLPORT, FRANK, Chicago, Ill.
APOSTOLIDES, APOSTOLOS G., Smyrna, Asia Minor.
ATLEE, E., Philadelphia, Pa.
ATWOOD, CHARLES E., New York.
AUSTIN, CECIL KENT, Paris, France.

BACHMANN, ROBERT A., United States Navy.
BAHR, MAX A., Indianapolis.
BAINBRIDGE, WILLIAM SEAMAN, New York.
BALDWIN, J. F., Columbus, Ohio.
BALLENGER, EDGAR G., Atlanta, Ga.
BARNES, FRANCIS M., Washington, D. C.
BARUCH, SIMON, New York.
BASSLER, ANTHONY, New York.
BATES, W. H., New York.
BATON, WILFRED M., Washington, D. C.
BEACH, GEORGE WILLIAM, State Sanatorium, Cass County, Minn.
BEATTY, GEORGE WESLEY, Brooklyn, N. Y.
BISHOP, LOUIS FAUGERES, New York.
BOEHME, GUSTAV F., New York.
BOORSTEIN, SAMUEL W., New York.
BRAM, ISRAEL, Philadelphia, Pa.
BRAUN, ALFRED, New York.
BREWER, ISAAC W., Ithaca, N. Y.
BROWN, SAMUEL HORTON, Philadelphia.
BRYANT, W. SOHIER, New York.
BULLOCK, E. S., Silver City, N. M.
BUSHNELL, G. E., United States Army.

CHRISTIE, ARTHUR, United States Army.
CLAPP, HERBERT C., Boston.
CLARK, L. PIERCE, New York.
CLAYTON, THOMAS A., Washington, D. C.
CLEAVES, MARGARET A., New York.
CLOUTING, CHARLES A., New York.
COBURN, RAYMOND C., New York.
CORNING, J. LEONARD, New York.
CORNWALL, EDWARD E., Brooklyn, N. Y.
COUGHLIN, ROBERT E., Brooklyn, N. Y.
CRAIG, HENRY A., New Brighton, New York.
CRISTADORO, CHARLES, Point Loma, Cal.
CROTHERS, T. D., Hartford, Conn.
CRUICE, JOHN M., Philadelphia, Pa.
CUMSTON, CHARLES GREENE, Boston, Mass.
CUNNINGHAM, WILLIAM P., New York.

DELAVAN, G. BRYSON, New York.
DE WOLF, HAROLD, The Glen Springs, Watkins, N. Y.
DISEN, CHARLES F., Minneapolis, Minn.
DIXON, THOMAS, Brooklyn, N. Y.
DRESBACH, M., Ithaca, N. Y.
DWIGHT, E. W., Boston, Mass.

EINHORN, MAX, New York.
ELDER, OMAR F., Atlanta, Ga.
EMSHEIMER, H. W., New York.
ESHNER, AUGUSTUS A., Philadelphia, Pa.

FARNSWORTH, C. P., Chamberlain, S. D.
FAUGHT, FRANCIS ASHLEY, Philadelphia, Pa.
FAUNTLEROY, A. M., United States Navy.
FERNANDEZ, FRANCISCO M., Havana, Cuba.
FISHER, J. W., Milwaukee, Wis.
FITCH, CLIFFORD P., Ithaca, N. Y.
FOWLER, ROYALE HAMILTON, Brooklyn, N. Y.
FOWLER, RUSSELL S., Brooklyn, N. Y.
FRANCIS, CHARLES F. D'ARTOIS, Brooklyn, N. Y.
FRAZER, THOMPSON, Asheville, N. C.
FREUDENTHAL, WOLF, New York.
FRIEDMAN, H. M., New York.
FRIEDMAN, G. A., New York.

GIBNEY, VIRGIL P., New York.
GIBSON, C. L., New York.
GILMOUR, ANDREW J., New York.
GOFFE, J. RIDDLE, New York.
GRAVES, WILLIAM W., St. Louis, Mo.
GREENE, JOSEPH B., Asheville, N. C.
GREELEY, HORACE, Brooklyn, N. Y.
GRIFFIN, WALTER WILSON, New York.
GROSS, M., New York.
GUILE, HERBERT V., New York.

HAGNER, FRANCIS R., Washington, D. C.
HAIG, ALEXANDER, London, Eng.
HAMILTON, W. D., New York.
HAMMOND, ROLAND, Providence, R. I.
HARDENBERGH, DANIEL B., Middletown, N. Y.
HARVEY, THOMAS W., Orange, N. J.
HEISER, VICTOR G., Manila.
HELD, I. W., New York.
HOFFMAN, FREDERICK L., Newark, N. J.
HOLMES, BAYARD, Chicago, Ill.
HOUGH, PERRY B., New York.
HUME, EDWARD H., Changsha, Central China.

INGALLS, H. D., Hartford, Conn.

JACOBSON, ARTHUR C., Brooklyn, N. Y.
JAMES, PROSSER, London, Eng.
JONES, HOWARD, Circleville, Ohio.
JONES, S. FOSDICK, Denver, Colo.
JULIAN, C. A., Thomasville, N. C.

KAHN, L. MILLER, New York.
KAHN, MAX, New York.
KAKELS, M. S., New York.
KELSEY, CHARLES B., New York.
KINTZING, PEARCE, Baltimore, Md.
KIRBY-SMITH, J. L., Jacksonville, Fla.
KIRKENDALL, JOHN S., Ithaca, N. Y.
KONKLE, W. B., Montoursville, Pa.
KNOPF, S. ADOLPHUS, New York.

LAPHAM, MARY E., Highlands, N. C.
LEDERER, ERNST, Vienna.
LEDERER, MAX, Brooklyn, N. Y.
LEDERLE, ERNST J., New York.
LEINER, J. H., New York.
LEWIS, ROBERT, New York.
LONDON, JULIUS, New York.
LORENZ, W. F., Mendota, Wis.
LUDLOW, C. S., Washington, D. C.
LUSK, GRAHAM, New York.
LUYS, GEORGES, Paris, France.
LYLE, HENRY H. M., New York.

MACHT, D. I., Baltimore, Md.
MAGILL, WILLIAM S., Albany, N. Y.
MALONEY, WILLIAM J. M. A., New York.
MANNING, JACOLYN VAN VLIET, Brooklyn, N. Y.
MARTINEZ, I. GONZÁLEZ, Porto Rico.
MAUS, L. MERVIN, United States Army.
MAVERICK, AUGUSTUS, San Antonio, Texas.
MAYS, THOMAS J., Philadelphia.
MCKINNISS, CLYDE R., Norristown, Pa.
MEARS, J. EWING, Philadelphia.
MEYER, ALFRED, New York.
MEYER, NATHAN, Berlin.
MICHAILOVSKY, BENJAMIN, New York.

MONTGOMERY, CHARLES M., Philadelphia, Pa.
MORRIS, ROBERT T., New York.
MULOT, O. L., Brooklyn, N. Y.

NAMMACK, CHARLES EDWARD, New York.
NORFLEET, L. E., Tarboro, N. C.
NORTH, C. E., New York.

OCHS, BENJAMIN F., New York.
OETTINGER, BERNARD, Denver, Col.
OGDEN, J. BERGEN, New York.
OLITSKY, PETER K., New York.
OPPENHEIMER, SEYMOUR, New York.

PATTON, J. ALLEN, Newark, N. J.
PEDERSEN, VICTOR COX, New York.
PERKINS, PERCY A., Memphis, Tenn.
PETERS, LEROY S., Silver City, N. M.
PETERY, ARTHUR K., Norristown, Pa.
POMEROY, J. L., Monrovia, Cal.
PREBLE, EDWARD, New York.

REHFUSS, MARTIN E., Paris, France.
REYNOLDS, WALTER S., New York.
RHODES, GOODRICH B., Cincinnati, Ohio.
RICHTER, GEORGE, St. Louis.
ROBINSON, BEVERLEY, New York.
ROBINSON, WILLIAM J., New York.
ROSENBLUTH, B., New York.
RUECK, G. A., New York.
RUSSELL, WILLIAM L., White Plains, N. Y.

SANDERS, GEORGE, New York.
SCHROEDER, HENRY H., New York.
SCOTT, R. J. E., New York.
SEXTON, L., New Orleans, La.
SEYMOUR, N. G., New York.
SHEEDY, B. D., New York.
SHELDON, WM. HILLS, New York.
SIMPSON, JOHN, New York.
SLOAN, THOMAS G., South Manchester, Conn.
SMITH, E. FRANKLIN, New York.
SMITH, HOMER E., Norwich, N. Y.
SPINGARN, ALEXANDER, New York.
SQUIER, J. BENTLEY, New York.
STARR, I. P., New York.
STAUNTON, E. MACD., Schenectady, N. Y.
STEINER, WALTER R., Hartford, Conn.
STEWART, DOUGLAS H., New York.
STILLMAN, RALPH G., New York.
SYMONDS, BRANDRETH, New York.

TAYLOR, HENRY LING, New York.
TAYLOR, J. MADISON, Philadelphia, Pa.
THOMSON, WILLIAM HANNA, New York.

VANDEGRIFT, GEORGE W., New York.
VON OEFELE, FELIX, New York.
VON RUCK, CARL, Asheville, N. C.
VOORHEES, IRVING WILSON, New York.

WALKER, H. D., Buffalo, N. Y.
WARBRICK, JOHN C., Chicago, Ill.
WATSON, LEIGH F., Oklahoma City, Okla.
WAUGH, WILLIAM FRANCIS, Chicago, Ill.
WEBSTER, DAVID, New York.
WEIDLER, WALTER BAER, New York.
WEISSE, FANEUIL S., New York.
WESSON, M. B., El Paso, Texas.
WHITMAN, ROYAL, New York.
WIENER, ALEX. C., Chicago, Ill.
WIENER, ALFRED, New York.
WILLIAMS, EDWARD MERCUR, Philadelphia, Pa.
WILLIAMS, TOM A., Washington, D. C.
WILSON, J. G., Ellis Island, New York.
WILSON, S. J., Brooklyn, N. Y.
WOLBARST, ABRAHAM L., New York.
WOOD, ARNOLD, New York.
WOOD, SUSAN M., New York.
WOODRUFF, CHARLES E., United States Army.

ZIGLER, M., New York.

Societies of Which Reports Have Been Published.

AMERICAN CLIMATOLOGICAL ASSOCIATION.
AMERICAN DERMATOLOGICAL ASSOCIATION.
AMERICAN ELECTROTHERAPEUTIC ASSOCIATION.
AMERICAN GASTROENTEROLOGICAL ASSOCIATION.
AMERICAN GYNECOLOGICAL SOCIETY.
AMERICAN LARYNGOLOGICAL ASSOCIATION.
AMERICAN NEUROLOGICAL ASSOCIATION.
AMERICAN ORTHOPEDIC ASSOCIATION.
AMERICAN PEDIATRIC SOCIETY.
AMERICAN SOCIETY OF TROPICAL MEDICINE.
AMERICAN THERAPEUTIC SOCIETY.
ASSOCIATION OF AMERICAN PHYSICIANS.

BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.
BRITISH MEDICAL ASSOCIATION.
  Section on Medicine.
  Section on Obstetrics and Gynecology.
  Section on Surgery.

CANADIAN MEDICAL ASSOCIATION.
CANADIAN PUBLIC HEALTH ASSOCIATION.
CLINICAL CONGRESS OF SURGEONS OF NORTH AMERICA.
CONNECTICUT STATE MEDICAL SOCIETY.

FIFTEENTH INTERNATIONAL CONGRESS ON HYGIENE AND DEMOGRAPHY.
FRENCH ASSOCIATION OF UROLOGY.

GERMAN CONGRESS OF INTERNAL MEDICINE.
GERMAN PUBLIC HEALTH ASSOCIATION.
GERMAN SURGICAL SOCIETY.

MANILA MEDICAL SOCIETY.
MEDICAL ASSOCIATION OF THE GREATER CITY OF NEW YORK.
MEDICAL SOCIETY OF NEW JERSEY.
MEDICAL SOCIETY OF THE COUNTY OF KINGS.
MEDICAL SOCIETY OF THE COUNTY OF NEW YORK.
MEDICAL SOCIETY OF THE STATE OF NEW YORK, FIRST DISTRICT BRANCH.
MISSISSIPPI VALLEY MEDICAL ASSOCIATION.

MONDAY CONFERENCE OF THE NEUROLOGICAL INSTITUTE OF NEW YORK.
NEW YORK ACADEMY OF MEDICINE.
  Section on Medicine.
  Section on Obstetrics and Gynecology.
  Section on Pediatrics.
  Section on Surgery.
NEW YORK PSYCHIATRIC SOCIETY.

PATHOLOGICAL SOCIETY OF PHILADELPHIA.
PHILADELPHIA PEDIATRIC SOCIETY.
PHILADELPHIA NEUROLOGICAL SOCIETY.
PHILIPPINE ISLANDS MEDICAL ASSOCIATION.
PRACTITIONERS' SOCIETY OF NEW YORK.

ROYAL INSTITUTE OF PUBLIC HEALTH.

SIXTH INTERNATIONAL CONGRESS OF OBSTETRICIANS AND GYNECOLOGISTS.
SOUTHERN MEDICAL ASSOCIATION.

Medical Record

A Weekly Journal of Medicine and Surgery

Vol. 82, No. 1.
Whole No. 2174.

NEW YORK, JULY 6, 1912.

$5.00 Per Annum.
Single Copies, 15c.

Original Articles.

THE DE KEATING-HART METHOD OF FULGURATION.*

BY WILLIAM SEAMAN BAINBRIDGE, Sc.D., M.D.,

NEW YORK.

ONE of the world's greatest philosophers has said: "There is a principle which is a bar against all information, and which cannot fail to keep a man in everlasting ignorance; this principle is contempt prior to examination." It is the desire of every seeker after truth to avoid this deadly principle, to examine first, and then to accept with approval, or to reject with contempt. If examination is impossible, suspended judgment is in order.

The Committee on Scientific Research of the New York Skin and Cancer Hospital has borne this principle in mind in its study of the cancer problem, being willing at all times to investigate the claims of any method for the palliation or cure of malignant neoplasms, providing, of course, that such investigation present no element of danger to the well-being of the patients concerned.

Accordingly, when, about five years ago, our attention was first directed to the treatment of cancer by the de Keating-Hart method of "fulguration," or "sideration," as it was then called, it was decided to investigate the theory upon which the method was based, as well as the technic of its application, and, if results warranted it, to give the method a scientific trial in a series of cases.

As the representative of the New York Skin and Cancer Hospital, and as a surgeon greatly interested in the cancer problem, the author, on various trips to Europe, visited de Keating-Hart, who demonstrated his apparatus and explained his method in detail. I saw him employ fulguration in numbers of cases, and examined many of the patients previous to operation, as well as upon successive visits afterward. Dr. de Keating-Hart has been kind enough to furnish us with photographs and lantern-slide pictures of a number of patients treated by him from time to time, many of whom I have examined at his clinic in Paris. A few of these photographs will serve to convince the reader, as the actual cases did me, that the method is worthy of careful trial.

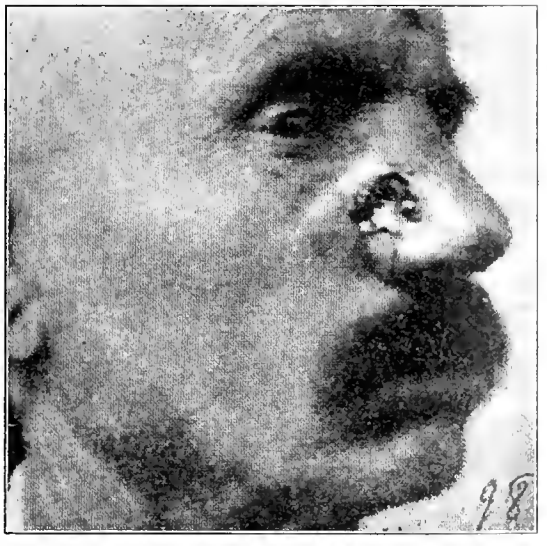


FIG. 1.

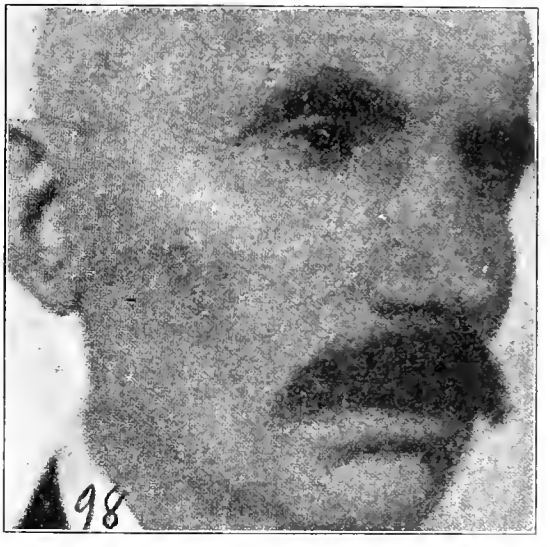


FIG. 2.

CASE I.—Epithelioma of the right side of the nose, which had invaded the subjacent bone. The first fulguration in 1907, the second in January, 1908, and the third in December, 1908. This patient having refused to submit to an anesthetic, it was impossible to treat him thoroughly at a single sitting. Cured for three years. (See Figs. 1 and 2.)

In some of the cases the cure of the cancer does not offer in itself any special interest, since this might have been obtained, as de Keating-Hart has pointed out, by a number of well-known means in at least the first group. The cases are of real significance only when considered from a triple point of view, which should be borne in mind as the pictures and the case histories are studied:

(1) The strictly limited eradication of tissue

*Read in part before the New England Association of Physical Therapeutics, Boston, April 12, 1912. Illustrated with lantern slides. Delivered in part, with the presentation of patients, at the Eighth Annual Clinical Lecture on Cancer, New York Skin and Cancer Hospital, April 24, 1912.

around the lesions, thus saving or lessening subsequent deformity.

(2) The non-recurrence obtained for a number of years, although in certain cases the disease had not been checked by other means; or, in primary cases, the lessened likelihood of recurrence.

(3) The relatively slight disfigurement produced by the method in the cases presented.

These cases are all a matter of record, and are reproduced here merely for purposes of interest and emphasis. It may be said, in justice to de Keating-Hart and his method, that these cases represent patients of sufficiently various age and disease of sufficient severity to give to them an undeniable value. Each has undergone careful histological examination, and in the published works of de Keating-Hart may be found the names of physicians and surgeons by whom the patients were treated, as well as the names of the laboratories where microscopic examinations were made.

The cases herein described or pictured have been selected for this paper by Dr. de Keating-Hart as best illustrating his methods.

Superficial Cancers of Cutaneous Origin (Cases I to VI).—The first group represents superficial cancers of cutaneous origin, which are interesting in that they show what excellent cosmetic results fulguration may give.

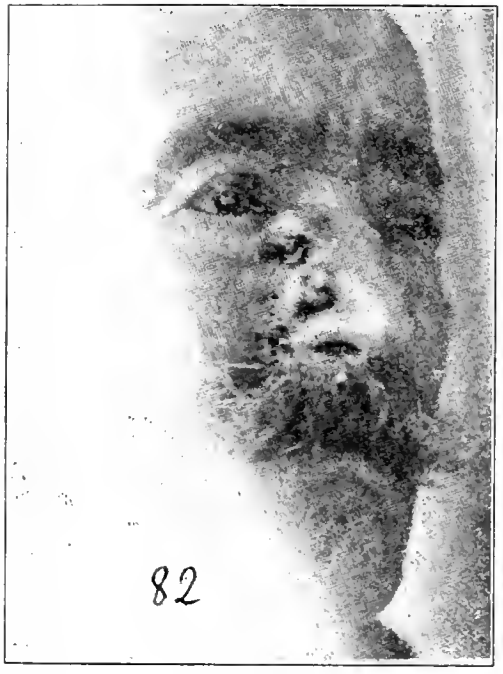


Fig. 3.

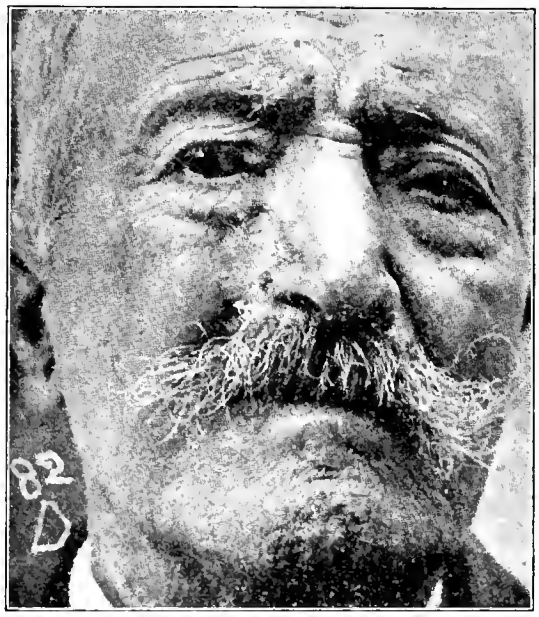


Fig. 4

Case II.—Epithelioma of the squamous celled type involving the inner canthus of the right eye and the nasal process of the superior maxilla. Fulguration December 31, 1907. Was seen again three years later. Cured.

Fig. 5.

Fig. 6.

Case III.—Epithelioma of the skin of the superior maxilla and of the bones of the nose. Treated without success by arsenical cauterization. Fulguration February 14, 1908. Seen again a year and a half later. Cured. (See Figs. 5 and 6.) I have heard since that she had a recurrence. This is possible. The case was very severe and the removal without doubt insufficient, but I cite the case especially because of the cosmetic result. [de Keating-Hart.]

Deep Cancers of Cutaneous Origin (Cases VII to XI).—The next group represents deep cancers of cutaneous origin, which have acquired a greater severity from the fact of their extent and their

Fig. 7.

The following cases of cancer of the breast are presented, not only because of their severity, but because of the limited removal of diseased tissue, in spite of which permanent results were obtained.

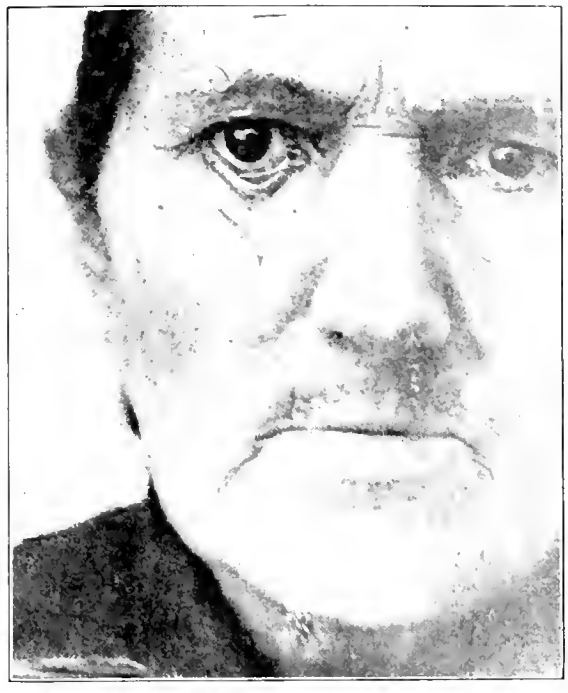


Fig. 8.

Case IV.—Epithelioma of the face. Treated previously by surgery and *x*-rays with immediate and severe recurrence. Fulguration carried out August 29, 1907. Was followed in twenty days by a beautiful cicatrization, as shown in the figure. The patient has glands in the neck which were not fulgurated (unfortunately) which naturally have increased in size, but the local healing is still present. (See Figs. 7 and 8.)

penetration into the subjacent osseous tissue. Here the cosmetic effect is less than the therapeutic effect, but is nevertheless not entirely wanting. It is well to note that most of these cases were considered inoperable and that some had been unsuccessfully treated by other methods.

It is to be emphasized, in this connection, that this limited removal of tissue is not advocated by de Keating-Hart and others who have employed the

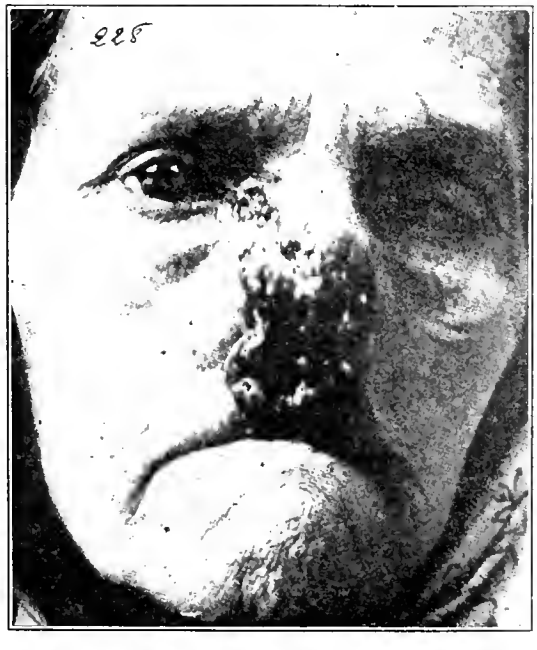


Fig. 9.

Fig. 10.

Case V.—Flat epithelioma of the face extending to the mucous membrane of the upper lip and to the nose. Rapid growth. Fulguration June 6, 1908, preceded by very limited removal of the growth. (Lost to sight a short time afterward.)

Cancers of the Breast (Cases XII to XV).—method, except in cases where more extensive removal is not feasible.

Cancer of the Cervical Region (Case XVI).

Cancers of the Mucosa (Cases XVII to XX).

—De Keating-Hart claims to have obtained a number of permanent results in cases of cancer of the lip in which there was limited removal of the lesion, without removal of the diseased glands. These cases demonstrate the favorable results of fulguration even with incomplete removal of the disease.

Fig. 11.

Fig. 12.

Case VI.—Ulcerating and proliferating epithelioma at the inner angle of the right eye and on the nose. Fulguration June 3, 1907, with simple curettage. Very neat healing in twenty days, continuing perfectly well for three years. (See Figs. 11 and 12.) Lost from sight since then

Cancer of the Rectum, in severe cases, has given less favorable and less permanent results than has cancer in other parts of the body.

Cancer of the Uterus has not given good results with fulguration, according to de Keating-Hart. It is one of the localized forms of cancer where fulguration is least indicated, because of the possibility of the complete surgical removal of the disease. If the condition is inoperable fulguration may relieve and produce superficial cicatrization, but it will not cure.

Sarcomatous Tumors often show "splendid healing" from fulguration, according to de Keating-Hart.

As the months passed and de Keating-Hart's reports continued favorable, as did likewise those of a number of other European investigators, our interest was still further aroused in the method.

Desplat, appointed by the French Association for the Advancement of Science, to report upon "the remote results of fulguration in the treatment of cancer" (Congress at Toulouse, August, 1910), cited a number of interesting cases published by Dubois-Crepagne and himself. He concludes his report with the following: "After three years' experience, I conclude, as I concluded after the first year, that fulguration has enlarged considerably the field of surgery in giving it marked chance of success in those cases where it previously dared no longer intervene, and I now reply to the question which I had left under judgment for two years, that fulguration gives to the patient chances of prolonged non-recurrence superior to those chances which surgery gives when left to itself alone."

Segond, who declared himself, at the International Conference on Cancer, in Paris, in October, 1910, as being against the method, said of it, fulguration "has increased their resistance and prolonged their lives, transformed or cicatrized, in praiseworthy fashion, horrible, bleeding areas which tortured" patients whose pains nothing would calm. "Fulguration," he said, "permits surgery to intervene where intervention was no longer posible, and may offer a chance of non-recurrence to those cases which surgery alone cannot relieve."

Such statements, reinforced by our own observations, encouraged us, despite the unfavorable reports which from time to time appeared, to install a de Keating-Hart fulguration apparatus at the New York Skin and Cancer Hospital, and to extend to Dr. de Keating-Hart an invitation to visit New York and personally demonstrate the apparatus and explain the theories upon which his method of fulguration is based.

The apparatus, which had been constructed under de Keating-Hart's personal direction, was installed in the hospital in November, 1911, and in December he visited America, giving a series of demonstrations at the New York Skin and Cancer Hospital, and delivering a number of lectures in other cities. Invitations were extended to many of the leading surgeons in this country and Canada to attend these demonstrations, and the operating room was taxed to its utmost capacity each day by members of the medical profession who seemed eager to witness the fulguration "seances," as the originator of the method is wont to call the applications of fulguration.

Many cases of cancer, in various stages of operability, were treated during the nineteen days of Dr. de Keating-Hart's visit. The surgical operations were performed by myself, with the assistance of Dr. Franz Torek, Dr. E. M. Foote, and other members of the hospital staff. Dr. de Keating-Hart was assisted in the instrumentation by Dr. Worthington S. Russell, in charge of the electrotherapeutic department of the hospital.

On behalf of the New York Skin and Cancer Hospital, of the Committee on Scientific Research, and of myself personally, a formal expression of thanks is tendered Dr. de Keating-Hart for his willingness to leave his own work and to give such untiring energy to the demonstrations at the Skin and Cancer Hospital.

It is our intention to continue to employ the method in all suitable cases, as we have been doing since his visit. Careful records of each case are kept. Notes were made of the treatment to be fol-

lowed in each of the cases treated by de Keating-Hart, and his directions have been carried out in detail. At the end of a period of time sufficiently long to warrant forming a conclusion as to the merits of the procedure, a full account of our experience with fulguration will be published.

Fig. 13.

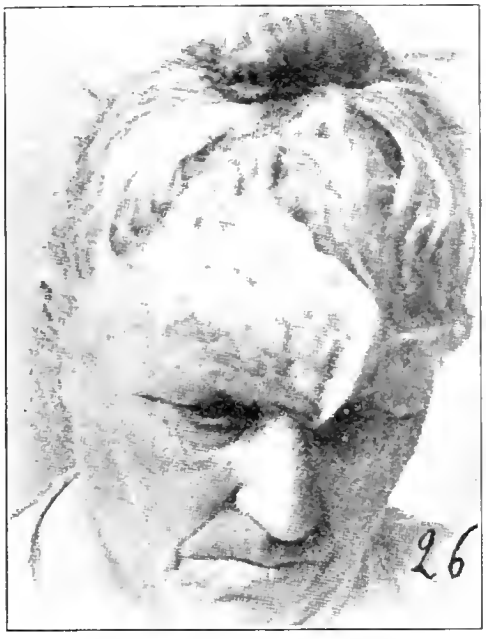


Fig. 14.

Case VII.—Large flat epithelioma of the antero-superior cranial region, with invasion of the frontal bone down to the diploë. There were two metastases in the pericranium. This case was considered inoperable by several surgeons. The first fulguration with curettage was done on January 6, 1907, in the presence of Dr. Saias of Marseilles. Cicatrization perfect. Recurrence at the end of one year. Two repeated fulgurations in 1908 and 1909. In perfect condition at time of report, about three years later. (See Figs. 13, 14, and 15.)

Other Electrotherapeutic Measures Often Confounded with Fulguration.

Before taking up the further discussion of fulguration and the theory upon which its application is based, attention will be called very briefly to some of the methods of employing high-frequency sparks which have been confounded in the minds of many with fulguration as employed by de Keating-Hart. It may be said, in passing, that this discussion is confined absolutely to fulguration as employed at the present time by de Keating-Hart, and that we shall in no wise enter into a discussion of the Rivière-de-Keating-Hart controversy, mentioned by so many writers on this phase of electrotherapeutics.

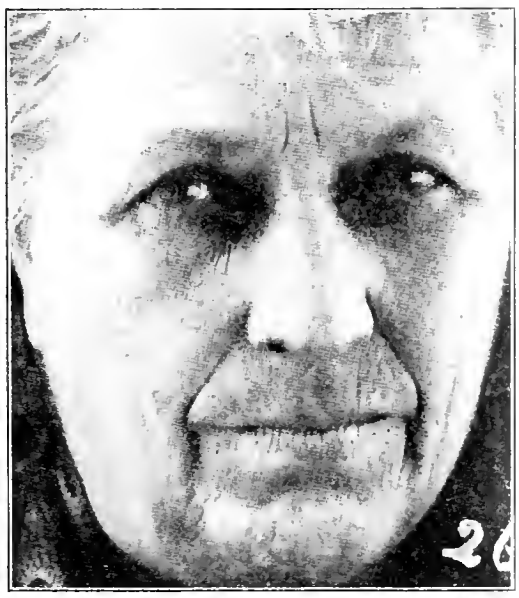


Fig. 15.

During the demonstration at the Skin and Cancer Hospital de Keating-Hart repeated over and over the statement that fulguration as employed by him is *not a burning method;* that it does *not destroy tissue,* normal or abnormal; that if it is applied to the extent of burning it is distinctly harmful, and is not then true fulguration; and that it acts, *not upon the cancer itself,* but upon the *soil upon which the cancer develops.*

Despite these statements it was not an uncommon thing to hear visitors tell of their experience with fulguration in the destruction of neoplasms, of "burning down" this or that kind of growth, and of using short sparks, bipolar currents, and other details diametrically opposed to the de Keating-Hart method.

It may be interesting in this connection to cite a passage from the 1911 edition of one of the leading text-books on electrotherapeutics.* "The application of high frequency discharge," says the author of this volume, "from a metal point with a current of sufficient energy to destroy living tissue, was first described and instituted by Dr. J. A. Rivière of Paris, France. He employed the method for the destruction of epitheliomata, warts, moles, and condylomata. His student, Keating-Hart, employing the same method in connection with the operative treatment of cancer of the breast, with a view to preventing secondary recurrence by following the knife with the application of the same method designated the process as 'fulguration,' giving the original investigator no credit for the originality of the method. His association as a surgeon led to the adoption of the latter name which is the designa-

*Snow, William Benham: "Currents of High and Other Potential of High and Other Frequencies."

tion of the effect and not the method; the method being a hot effleuve discharge and the effect one which simulates burning."

"The process of effleuvation," he continues, "may be applied for a cauterant effect or as a desiccating agent as described by Clark; the discharges in the one case destroying the tissue by actual chemical decomposition of heat, and the other process by applying the current with sufficient strength to produce a drying out of the tissues with the induction of coagulation-necrosis. When the thermic application is made in the tissues, above 73° C., coagulation-necrosis is induced."

After witnessing a number of de Keating-Hart's demonstrations at the New York Skin and Cancer Hospital, the author above quoted said, in an article

Fig. 16.

Fig. 17.

Case VIII.—Epithelioma of the nose; rapid growth with marked involvement of the bones. Curettage and fulguration December 3, 1907. The patient had been previously treated without success by the actual cautery. Very excellent healing; well three years later.

Fig. 18.

Fig. 19.

Case IX.—Deep epithelioma of the orbital region. Considered by all surgeons consulted as absolutely inoperable. Destruction of the eye and invasion of the ethmoid bone. Fulguration in December, 1907. No recurrence for nearly three years. Perfect return of the general health, which had been undermined by the terrible pain and the use of morphine. (See Figs. 18 and 19.)

in the *Journal of Advanced Therapeutics* for January, 1912. "The principle employed by him (de Keating-Hart) is to remove entirely the cancerous growth, and then to appply to the surfaces and tissues from which the cancer has been removed long, high potential resonator sparks, in quality very similar to the sparks from a static machine. This administration gives no burning or destruction of tissues, but an effect of over-stimulation which, according to the theory of de Keating-Hart, depletes or exhausts the tissue to such a degree that the reparative process is considerably deferred, the effect from the application of the electrical sparks lowering the vitality of the normal cells, and destroying by depletion the diseased cells that may have been left in the tissues."

FIG. 20.

FIG. 21.

CASE X.—Epithelioma with invasion and destruction of the left eye, the malar bone, and a portion of the superior maxilla. Fulguration June 29, 1908. Cured for three and one-half years. A fistula communicating with the nose still persists. (See Figs. 20 and 21.)

FIG. 22.

FIG. 23.

CASE XI.—Orbital epithelioma. Invasion of the left eye, the superior maxilla, and the bones of the nose. The patient was sent by Prof. Lapersonne to Prof. J. L. Faure, who operated before using fulguration on February 4, 1909. Cured for nearly three years. Patient was presented by Dr. J. L. Faure before the Surgical Society. (See Figs. 22 and 23.)

Another distinguished writer on electrotherapeutics,* in 1910, said of the method under dis-

*Tousey, Sinclair: "Medical Electricity and Röntgen Rays."

cussion: "This method consists in the application of long and powerful sparks for the destruction of morbid tissue. The apparatus may be any of the resonators giving high-frequency currents, and may be either monopolar or bipolar, the latter being preferable."

From the above it will be seen how easily the fulguration of de Keating-Hart may be confused with the "destructive fulguration" to which various writers allude.

a mistaken conception of the action of the spark upon the neoplasm.

The fulguration of de Keating-Hart, the "destructive fulguration" obtained with short sparks,

Fig. 24

Fig. 25.

Case XII.—Epithelioma of the nipple of rapid growth. Examination showed an indurated mass of the size of a walnut. Fulguration May 12, 1908, with excision passing exactly around the lesion, thus forming a cone shaped area in the breast. Still cured after three and one-half years. (See Figs. 24 and 25.)

desiccation, electrocauterization, electrocoagulation (Doyen), "diathermy" (Nagelschmidt), all signify the application of currents of high frequency. The current, however, may be unipolar or bipolar, and the spark may be long or short, or suppressed, and herein is the difference between the

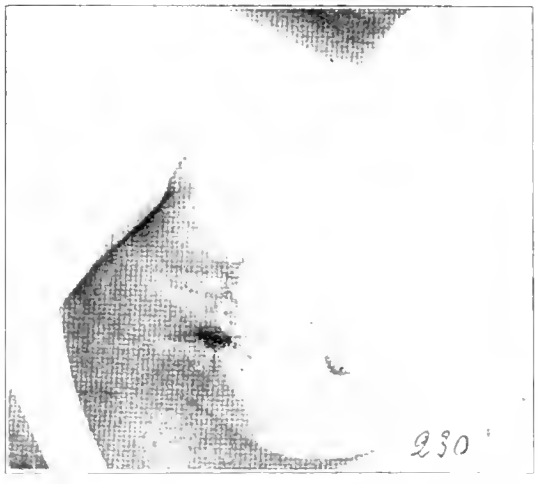


Fig. 26

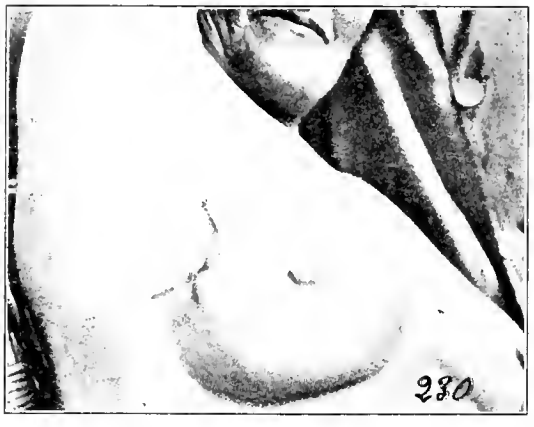


Fig. 27.

Case XIII.—Epithelioma of the right breast, occupying the superior external quadrant. Rapid growth of the tumor to the size of a pear. No glands were felt. Fulguration July 9, 1908. Removal of the lesion only and conservation of the greater part of the breast. No recurrence after two years. Disappeared from observation. (See Figs. 26 and 27.)

The term "fulguration" (lightning) was suggested by Pozzi, and soon supplanted the term "sideration" (a sort of stunning of cancer cells), which de Keating-Hart at first applied to his method under de Keating-Hart fulguration and the various methods of electrothermic penetration.

In fulguration the unipolar current, with long, high-frequency, high-tension sparks, is employed.

In the other methods named, the bipolar current is generally employed, though in some the unipolar current may be used. In the former the amperage is comparatively low and the voltage high, which its application is carried, giving the respective designations to the different methods. Fulguration, on the other hand, is in no sense a destroyer of tissue, but a *modifier of trophic nerve centers*. It is

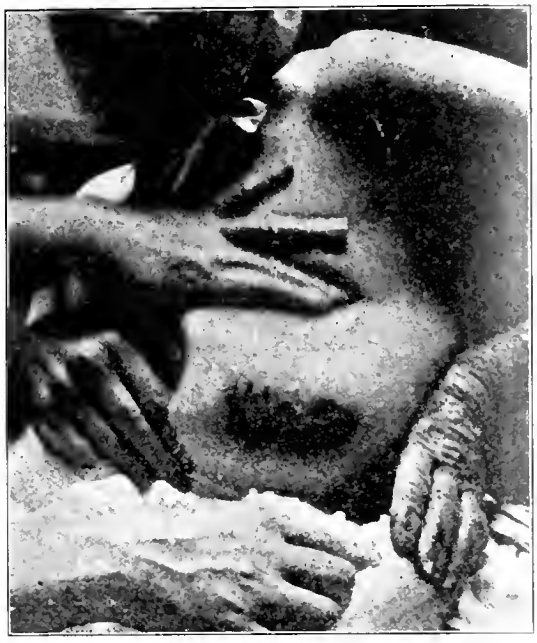


Fig. 28

Fig. 29

Case XIV.—Conservative intervention. Cicatrization of cancerous breast after limited removal. Cancer following Paget's disease. The left mammary gland deeply invaded. Enlargement of glands in the axilla. In view of the great age of the patient, seventy-six years, and her feebleness, decided to remove only the diseased part of the breast. Operation performed in the service of Prof. Tuffier of Paris. Still cured after three and one-half years. (See Figs. 28 and 29.)

Fig. 30.

Fig. 31.

Case XV.—Epithelioma of the left breast. Operated twice, with recurrence on the ribs, in the axilla, and in the skin of the flank and shoulder. Patient had received radium treatment which ameliorated her condition somewhat. At the time of fulguration there was cachexia, swollen arm, and intense pain. Fulguration in March, 1906, and in February, 1907. Incomplete excision of the nodules and of the axillary mass by Prof. Maurras of the Colonial Infantry. Remained in perfect health for more than three years. I do not know if this will continue, as one must expect a recurrence, since there was still some diseased tissue left in place which it was impossible to remove, but it is extraordinary to have been able to obtain such a result in such a case [de Keating-Hart]. (See Figs. 30 and 31.)

while in the latter the reverse is usually the case.

Desiccation, "diathermy," electrocoagulation, etc., are all methods of *electrothermic destruction of tissue*, the strength of the spark and the extent to

understood, of course, that these are de Keating-Hart's opinions.

It is not necessary for the purpose of this communication to go into further details concerning

the various methods named. It may be said, however, that apparatus for employing these have been installed in the New York Skin and Cancer Hospital, and the relative merits of the different methods will be thoroughly tested in suitable cases, the results being reported in due time.

Instrumentation and Technique.—The production of fulguration sparks may be accomplished by means of very differently adjusted apparatus. Static electricity and the city current may be utilized, according to the case. The following list comprises the equipment to which de Keating-Hart gives preference:

(1) Electric source: city current, dynamos, or accumulators, etc.

(2) A table holding the rheostats, amperemeters, etc.

(3) A transformer coil with rapid interrupter, or transformer in the closed magnetic circuit (alternating current).

(4) A condenser furnished with a spark gap.

(5) Oudin's resonator.

(6) A bellows furnished, according to the case, with a foot-pedal, or with a tube of carbonic acid, or an electric bellows with disinfected air.

(7) Special electrodes of de Keating-Hart. (Fig. 45.)

(8) An operating table of wood or metal.*

A few details to be emphasized:

(1) The source of the current must be powerful.

(2) The amperage at the primary may vary enor-

Fig. 32.

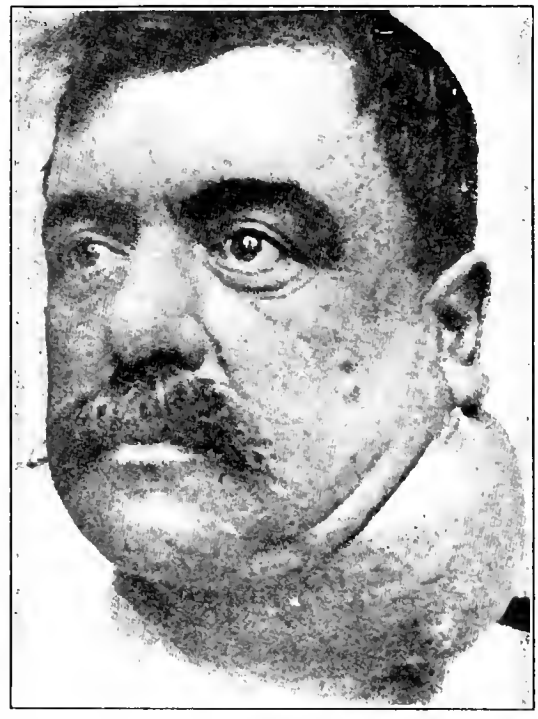


Fig. 33.

Cancer of the Cervical Region.—Case XVI.—This was a case of epithelioma of the left cervical region, the origin of which is uncertain, since it was not seen by de Keating-Hart until the patient had had two recurrences, and when it was impossible to determine the primary focus of the disease. The tumor was large, of rapid growth, fixed to the deep structures of the neck in the carotid region, and declared by several surgeons to be inoperable. Extensive operation. The location, appearance, and consistency of the tumor pointed to a diagnosis of sarcoma, but microscopical examination showed that the clinical diagnosis was incorrect, the tumor proving to be an epithelioma. Fulguration November 2, 1908, after removal of the entire macroscopic mass. During the fulguration of the surgical site it was found that a small metastasis situated in the posterior cervical region was left behind, but it was considered inadvisable to prolong the operation, since the patient was already in a condition of shock. This mass was fulgurated some months later. Perfect result. Complete cicatrization in a few weeks. Seemingly cured after three years. (See Figs. 32, 33, and 34.)

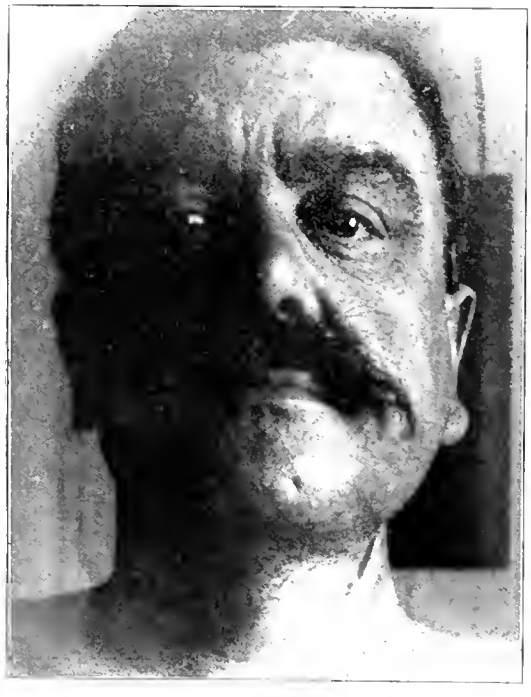


Fig. 34.

*The Bainbridge table (Fig. 46) was used for many of the fulguration operations during de Keating-Hart's visit. It is especially advantageous for this purpose, the metal of the table serving as the conductor. It is only necessary to expose a small area of the patient's naked body to the uncovered metal top of the table.

mously (from two to eight or ten amperes, according to the voltage of the current, and the manner in which it is utilized by the internal construction of the coil, etc.).

Fig. 35.

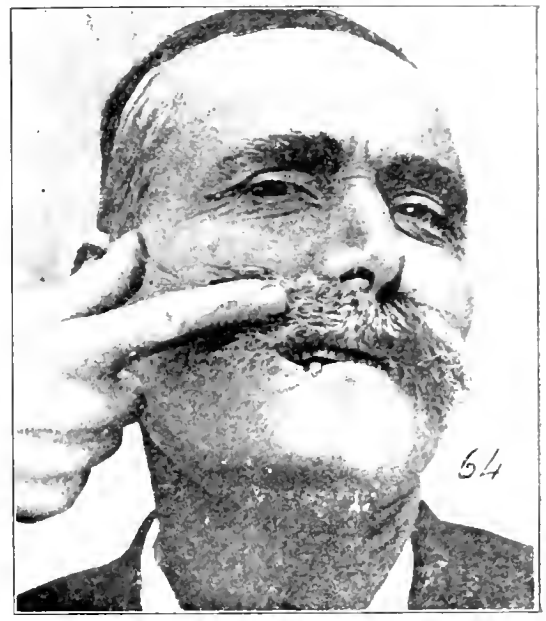


Fig. 36.

Case XVII.—Flat epithelioma of the angle of the mouth and lower lip, of recent beginning and rapid growth. Fulguration September 18, 1907. Removal limited to the macroscopic lesion alone, without removal of a margin of healthy tissue or of the glands, which were not perceptible to the touch. Cured for more than four years.

(3) The strength of the coil cannot be measured in terms of the length of the spark, as formerly, because of important modifications which have been introduced in the internal adjustment of the new apparatus. In the old models one was able to estimate a minimum of forty to forty-five centimeters of spark as the limit of the secondary. But the ensemble of the apparatus ought to be able to pro-

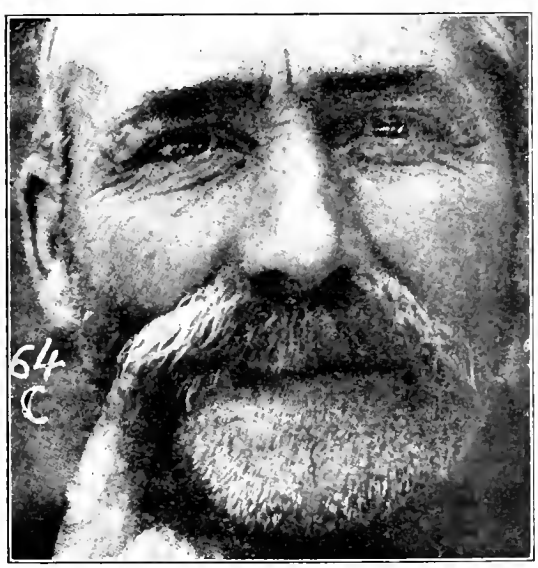


Fig. 37.

duce at the extremity of the solenoid, of the resonator, crackling white sparks of a minimum length of from seven to eight centimeters.

(4) The electrode, the special instrument for delivering the spark to the patient, is in the form of a sound. It is made of a smooth, metallic mandrel, or obturator, working snugly within an insulated tube of hard rubber. (Fig. 45.)

(5) The bellows produces during the operation a constant circulation within the hard rubber tube of a current of carbon dioxid, or, preferably, of air, the purpose of which is twofold: 1, to prevent a rise in temperature of the column of air within the electrode where the sparks are produced; 2, to remove the coagulable liquids which may obstruct the free end of the sound at points of contact of the latter with the operative field.

(6) This gaseous circulation first strikes the upper end of the sound and escapes at the tip. An electric contact is then established between the electric source and the metallic mandrel. The mandrel is then withdrawn from ten to twelve centimeters outside of its hard rubber casing, in such way that the point of the conductor is situated at an equal distance from the tip of the insulated sound. Consequently, in order to reach the fulgurated zone, the spark must pass through the non-conducting aerial column in the sound, which will permit the fulgurator to deliver sparks to those points only which it is intended to reach. For a large flat surface such an instrument may not be necessary. In all hollow places, or in all empty organs, a spark which is not thus surrounded by insulation spends itself upon the edges or upon certain points and cannot penetrate in its entire length to the bottom of the place in question.

(7) Even with this instrument perfected, as it is, one is not free from all error of technique, unless it be utilized according to certain principles and with precaution. The first precaution to take is the surveillance of the proper function of the apparatus. If the interior wall of the hard rubber tube is still moist after being sterilized, it may change completely the properties of the spark, and especially its

length, by prolonging the metal conductor through a conducting liquid as far as the inferior extremity of the instrument. Likewise, it may happen that in spite of the bellows, or, at least through its insufficiency, a coagulum may fill up the interior of the electrode, altering the force and the quantity of the current.

It would take too long to discuss here all the incidents which may take place in the course of fulguration, and, by changing the entire conditions, vitiate the results. From the foregoing it may be readily inferred that precision of technique is quite as essential in the application of the electrical current as it is in the preceding surgical operation.

Surgical Technique.—The first step of fulguration is purely surgical. This depends entirely upon

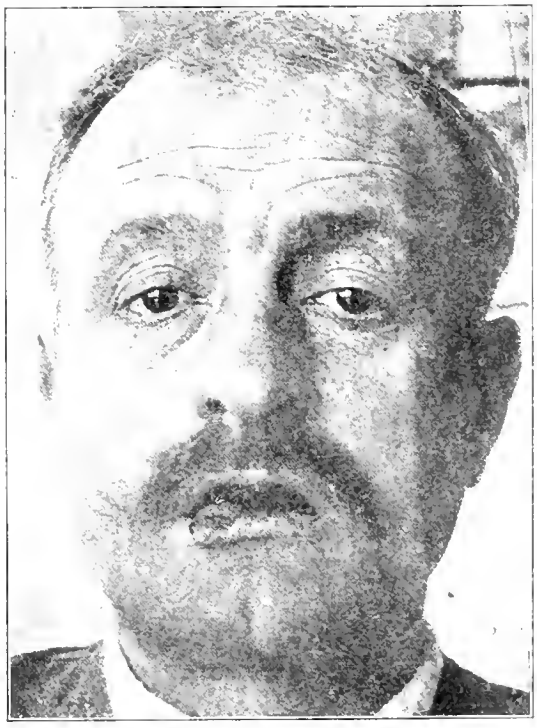


Fig. 38.

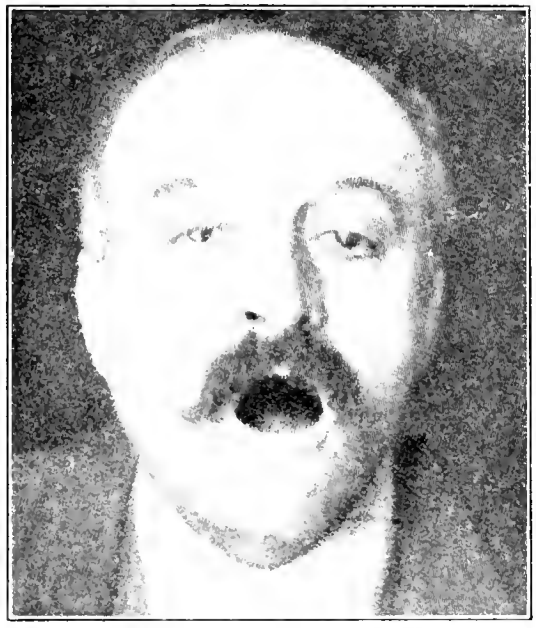


Fig. 39.

Case XVIII.—Epithelioma of the lower lip of the size of a small walnut, situated at the angle of the mouth. Enlargement of the submaxillary glands on the right side. Fulguration April 10, 1900. Removal of the tumor, incision of skin to right submaxillary region, ablation of the enlarged glands, and the degenerated submaxillary gland. "Sparking" of the entire wound. Cured for more than three years. (See Figs. 38 and 39.)

Fig. 40.

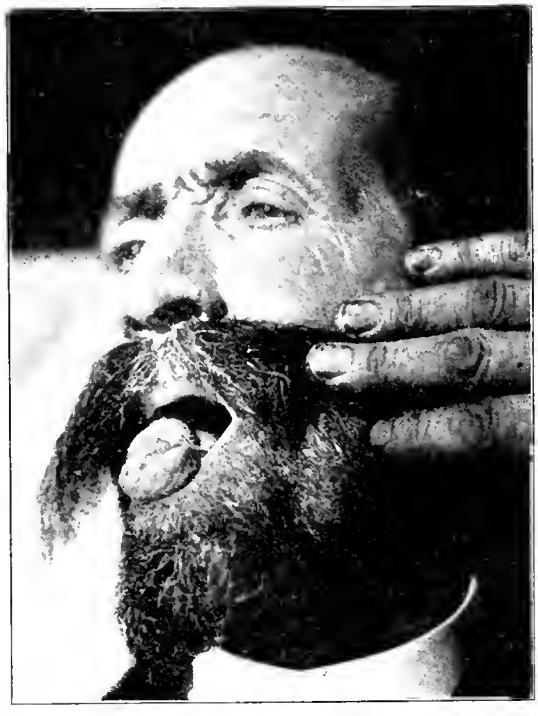


Fig. 41.

Case XIX.—Cancer of the left half of the tongue, with leucoplakia and bilateral cervical adenopathy. Removal in two sittings of the cervical and buccal lesions. The small glands on the right side were left in place (unfortunately). Fulguration March 21, 1900. Cured for nearly three years. (See Figs. 40 and 41.)

the exigencies of the case, and need not be given detailed consideration here. Fulguration is essentially a method of treatment for *operable* cancers. The more complete the removal of diseased tissue, the more certain, according to de Keating-Hart, is the freedom from recurrence. The possibility of complete cure and absolute prevention of recurrence is commensurate with the extent to which eradication may be carried. Where only partial removal of diseased tissue is possible the method of fulguration is palliative rather than curative. In these cases de Keating-Hart advocates another method—thermo-radiotherapy—which will be considered later.

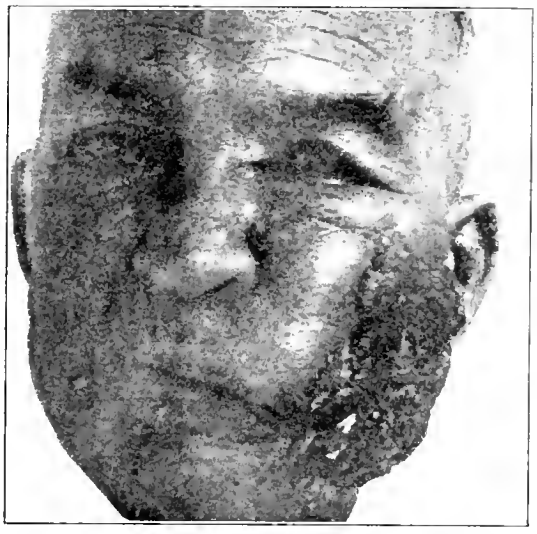


Fig. 42.

Fig. 43.

Case XX.—Very large cancer of the cheek on the left side, developed primarily on the mucosa of the mouth from a spot of leukoplakia. The tumor invaded successively the superior maxilla, which it destroyed, and the skin of the cheek from the malar region to the ear and as far as the angle of the mouth. A part of the inferior maxilla was also involved. The tumor was treated for some time at Lyons with a high-frequency current, without operation. The tumor grew larger and larger. The patient was seen by Prof. Jaboulay in Lyons. Fulguration April 9, 1909, with the surgical assistance of Dr. Juge. Ablation of the macroscopic masses by means of the curette, the scissors, and the knife. The greater part of the left superior maxilla was seen to be completely cancerous. A sharp primary sparking was then done and repeated some days later upon some new nodules which had appeared at certain points of the wound Has remained in perfect condition, without recurrence, for more than three years. (See Figs. 42, 43, and 44.)

Fig. 44—Actual condition (cicatrized). The tongue is seen at the bottom of the opening.

Electrical Technique.—The electrical technique is simple in its description and delicate in its application. The general rule laid down by de Keating-Hart is as follows: Spark for a long time, using powerful sparks of high frequency and high tension, applying them to the area from which every macroscopic trace of cancer has been removed. It is, then, *under* the cancer, and not *upon* it, that the electrical discharge is applied.

The spark should be white, producing the sensation of a violent shock, its mean length to be from ten to twelve centimeters. An important detail is to utilize the spark at its maximum length. The electrode should be kept in constant motion, and should be regularly passed over the surface being treated. The reason for this is twofold: (1) In order to avoid carbonization of the points at which the spark strikes the tissues; (2) in order to equalize the dosage, save at suspected points where one must work energetically.

The dosage, or the duration of the application of the spark upon a given point, it is impossible to establish in other than an empirical manner. It is not difficult to comprehend the reason for this, when one realizes that no two apparatus are exactly alike, and that in the same apparatus there may be great variations in the primary current, the distance of the sparkgap, and the conductibility of the air which surrounds it, all of which bear an influence, as does likewise the insulation of the patient. Under such conditions the electrical properties of the spark are subject to enormous variation. As a general rule, however, one may advise "ten minutes of fulguration for an area of ten square centimeters." This is near enough for ordinary purposes, in the majority of cases, and with the usual apparatus.

Another guide in the matter of duration is the change in the color of the tissues being fulgurated. All tisues take on a slightly darker tinge, not from destruction, but from the deposit of small blood clots produced at the surface through contact with the spark. This change of color varies with the tissue involved. While the muscles take on the tinge of smoked meat the bones become slightly yellow. In reality these appearances are apt to be deceptive, depending upon the manner in which the

sparking is carried out, and upon the thickness of the sanguinolent fluid through which it passes. As a rule, bones should not be fulgurated as long as the muscles, or the vessels as long as the tendons.

The two main points to be emphasized are: (1) Sufficient removal of diseased tissue; (2) powerful sparking of the underlying tissues.

The method should not be condemned unless these two essential features are practised. De Keating-Hart calls attention to the fact that most of the German authors, with the notable exception of

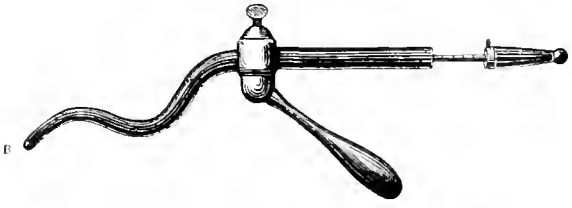


Fig. 45.—De Keating-Hart's Fulguration Electrode

Czerny, have published only failures. This is accounted for by him by the fact that almost everywhere in Germany he has seen very defective electrodes employed. The apparatus in these instances permits of the use of a spark only about three centimeters long. Furthermore, this spark fails to affect the parts concerned when one is working at the bottom of a cavity.

Bad instrumentation and bad technique, combined with insufficient surgical intervention, are the chief causes of failure. In addition to these, an improper understanding of the indications for fulguration may lead to failure. Some tumors, because of their location (as in the intestine, uterus, brain, lung), escape the action of the spark. In such cases fulguration alone is not indicated, but a combination of fulguration and "thermo-radiotherapy," another method suggested by de Keating-Hart, of which we will speak presently.

Theoretical Basis of Fulguration.—During the visit of de Keating-Hart to this country full notes were taken of his lectures and demonstrations, in order that our test of his method might be in absolute accord with his views. In addition to this, he was asked to formulate for us a full exposition of the theory upon which he bases his claims concerning fulguration. What is said on the subject, therefore, is an abstract of his own statements. We wish to emphasize the fact that we are neither accepting nor rejecting his views, but that, as stated in the beginning, we are merely *examining* the evidence by clinical tests.

The premise upon which the de Keating-Hart fulguration method has been developed is that the *unipolar long spark of high frequency and high tension acts not upon the neoplasm, but upon the soil on which the neoplasm has developed.*

Three groups of facts are relied upon to establish the premise:

(1) That sparking, even when used with inadequate surgical operation, gives undeniable results, insufficient doubtless, but already very definite.

(2) That the tumor is in no way modified in its appearance or in its vitality, from which one may

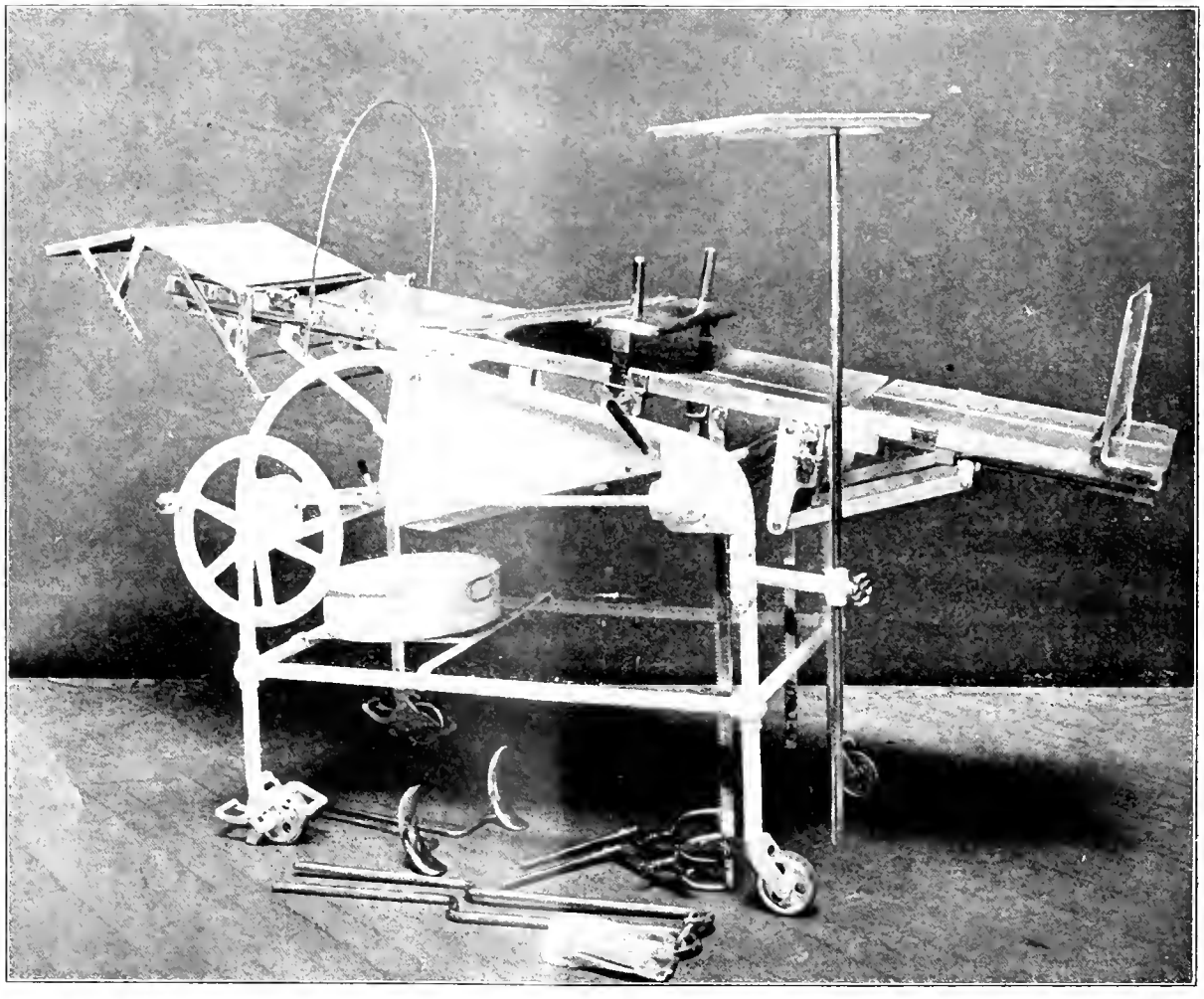


Fig. 46.—Bainbridge's operating table, the metal top of which serves as the direct connection with the electrical apparatus

reasonably conclude that it is not the tumor itself, but the condition of its nutrition—that is to say, the environment in which it develops—that is transformed.

(3) That laboratory experiments and clinical observations furnish plausible explanations of the foregoing.

The Action of the Current without Excision —"Sideration."

In his earlier attempts de Keating-Hart based his work upon a principle which he afterward found false, viz., he sought to produce, by means of the electric discharge, not an immediate and direct destruction of the tumor, as many thought, but what he called its "*sideration*," by which he meant a sort of stunning of the cancer cell, in consequence of which the cell became partially devitalized and retrograded little by little, so that from a condition of anarchy there was a return to a condition of organized and orderly control.

By way of parenthesis, it may be emphasized here, that by "cancer cell" de Keating-Hart does not suggest a parasitic or microbic origin of cancer. He does not accept this theory of the etiology of the disease, but considers it rather the expression of the hypernutrition of abnormal cells. The object of his treatment, therefore, is to bring about a lessening of the nutrition of these abnormal, or cancer cells, and their death in consequence of this lowered nutrition.

His early results seemed to prove the correctness of this theory. The first case which he treated in this manner was one of cancer of the breast, "en cuirasse," in which division of the nerves had caused anesthesia of the cutaneous surface, permitting the application of violent sparkings many times a week to the affected area without anesthetizing the patient, and without giving rise to intolerable pain. Under this treatment the general condition improved very quickly. The tumor was adherent to the thorax, but was nevertheless quite superficial. It retrograded under one's eyes.

De Keating-Hart has since published a series of observations of the same kind, in which, despite the persistence of cancerous nodules in fulguration wounds, he obtained, after the application of his method, excellent and durable retrogressions, more or less complete, notwithstanding that previously the lesions were developing with rapidity, and that surgical intervention had aggravated rather than diminished them.

From these experiences he was convinced that the current, even when employed alone, or accompanied by inadequate surgical intervention, gives rise to remarkable results in cancer. He concluded, therefore, that the current is the active element in his method, but he could not at first determine upon what tissues the current acted, whether upon the unhealthy tissue, by destroying it, or upon the healthy tissue adjacent to the abnormal tissue, modifying the former. In time he reached the conclusion that the current caused the "sideration" of the abnormal tissue cells.

The Modification, by Sparking, of the Area Underlying the Tumor.—A previously determined fact helped to shake his faith in the hypothesis of the direct "sideration" of the cancer cell. He had seen cutaneous neoplastic nodules retrograde around a fulgurated region without themselves being touched by the discharge. A very simple experiment overthrew his first theory. He found that mice cancers, when fulgurated, removed, and reimplanted in healthy mice, developed afresh under conditions identical with those of grafts that had not been exposed to the spark. The neoplastic cell, not destroyed directly by the electric discharge, was in no way attacked in its vitality by the discharge.

It was necessary then to completely reject the "sideration" hypothesis, or that the high-tension current caused any notable modification of the neoplasm, whether physiological or histological. The evolution of the cancer, however, being indisputably diminished by the current, in his experience, he concluded that it could only be that the soil sustaining the lesion had been rendered less fit for its growth.

His observations, then, led de Keating-Hart to the theory that sparking modified the local trophism in such way that the tumor, being badly nourished, tended to retrograde. He announced this view at the Congress of Physiotherapy at Paris, in 1909, and afterward at the Congress for the Advancement of Science, at Lille, in the same year.

The observations and experiments which verified, in his opinion, the hypothesis thus modified, may best be given in de Keating-Hart's own words. We quote, therefore, directly from his statements, as published, and as forwarded to the author in a personal communication since the former's return to Paris:

"*Facts and Experiments which Confirm the Hypothesis of an Action on the Subjacent Healthy Tissue.*—The employment of the high frequency short spark (from one to four centimeters), that is to say, at a relatively low tension, produces the effect of cellular stimulation; it provokes a rapid cicatrization of wounds, and its remarkable action of the closure of torpid ulcers is too well known to require any insistence upon it.*

"On the other hand, the high-tension spark properly so-called, of a minimum length of seven centimeters, applied for a time sufficiently long in proportion to the surface fulgurated, *so far from activating cicatrization, retards it and transforms a given area into a torpid wound.* The wound fills up, but the surrounding healthy tissue contracts. The surface becomes hardly at all covered with epithelium. There is, in other words, a natural autoplasty, not cicatrization, and if the surrounding skin is but slightly elastic, the closing of the wound, far from being hastened, becomes extremely slow. By analogy, then, and considering the difficulty of the reformation of healthy epidermis after fulguration, I had to admit that the same trophic phenomenon that prevented such reformation retarded or suppressed the propagation (repullulation) of cancer *in situ*. New and very interesting experiments, previously unknown to me, have come to support, by histological examinations, my somewhat unsupported hypothesis. I refer to the researches of Professor Ghilarducci of Rome.

"On June 30, 1909, Ghilarducci presented to the Royal Academy of Medicine of Rome a communication in which he made known his researches on the 'biological and curative action of fulguration.' He says: 'the curative value of fulguration in malignant tumors is still the subject of much discussion. The method of Keating-Hart has both ardent partisans and strong opponents. I have treated by fulguration eleven almost inoperable cases: namely, three epitheliomas of the breast, two of the neck, one of the nose and the antrum of Highmore,

*Zimmern: "La Valeur Thérapeutique de la Fulguration," Paris, 1909.

one of the concha of the ear extending to the mastoid process, two carcinomas of the cervix uteri, and one carcinoma of the nasal septum. . . . The patients belonged to the services of Professors Allesandri, Ferreri, and Ferreti. The immediate results *have been good in those cases in which surgical excision could be practised in such a way as to comprise the macroscopic limits of the tumor.* I cannot express an opinion of the definite results, my experience being yet too recent.'

"But having observed the constancy of all the trophic reactions of the current published up to that time, and rightly admitting that all trophism is normally regulated by the nervous centers, he (Ghilarducci) has sought the causes of these phenomena in the modifications of the nerves and of the spinal cord consequent on fulguration. With this point in view he has made a series of experiments on rabbits. Exposing the animal's sciatic nerve, he subjected it to the current for from a second to half a minute. Then from day to day he examined macroscopically the histological results of these fulgurations. His work *in extenso* gives his observations in detail, which are too long to be recounted here. I shall content myself with a résumé of the principal conclusions, as follows:

"(1) The action of the current varies as the intensity and duration of the fulguration.

"(2) *It manifests itself at a considerable distance from the point fulgurated.* In his experiments, Ghilarducci has discovered in the *sacral and cervical segments of the cord even when not itself fulgurated, lesions corresponding to those that he had produced on the sciatic nerve subjected to the current, and that without modification of the intermediary nerve trunks or of the spinal ganglions,* as though the nerves transmitted the electric shock to the medullary cells without themselves suffering any consequences therefrom.

"(3) Finally, *the distant medullary lesions may vary from a simple chromatolytic reaction to a cellular necrosis,* according to the intensity and the duration of the application of the current to the sciatic.

"We know what profound troubles of nutrition may be brought about by the destruction of certain medullary segments, witness the retardation of growth that the limb of a child undergoes after an attack of anterior poliomyelitis. Is it not easily admissible that the modifications transmitted to the spinal cord by all the nerve terminals of a wound subjected to fulguration, should determine in it reactions that manifest themselves by a certain cellular destruction followed by a more or less complete repair? And would not that explain and justify, to use Ghilarducci's words, 'the analgesias and trophic troubles clinically displayed?'

"To sum up, I believe that I have shown that the reaction of the high-tension current employed in a *fulguration dose* in no way resembles that of other physical agents.*

"The retardation it causes to the epithelial covering of wounds, the retrogression that it provokes even in cancer nodules situated around the fulgurated zones, and, finally, the distant histological actions that it determines in the medullary centers corresponding to these zones, all suggest a seductive, even if yet incomplete, explanation of its success in the treatment of cancer. The ignorance in which we find ourselves regarding the exact pathogeny of these neoplasms, does not permit us to demand more from any theory. Certain experiments, however, now proceeding, will soon, I hope, permit me to support it with sufficiently forcible proofs. But the difficulty in the matter of dosage explains how it is that results can be so different with different experiments and cases."

34 Gramercy Park.

*"It is especially differentiated from 'diathermia' studied in Austria and Germany by von Berndt, Zeyneck, Preeps, and Nagelschmidt, and lately introduced into France under the name of 'electrocoagulation.' This is indeed only a thermic means of destruction, not a modifier of trophic centers. I do not discuss, but merely call attention to this method, so interesting from other viewpoints, which up to now has not given any result that has been seriously studied in cancer; and the work of the authors themselves of the method (Berndt, Nagelschmidt) have proved that the cancer cells *not destroyed by diathermia acquired on the contrary a heightened vitality.*"

RELATIONS OF CALCIUM TO PRETUBERCULOUS STATES, ARTERIOSCLEROSIS, AND INSANITY.

By CHAS. F. DISEN, M.D.,

MINNEAPOLIS, MINN.

FORMERLY PATHOLOGIST AND CHIEF OF THE TUBERCULOSIS DIVISION, CITY HOSPITAL, DEMONSTRATOR OF ANATOMY MINNESOTA STATE UNIVERSITY.

We are sometimes told that it is the doctor's business to disagree, but it may even happen that the doctor disagrees with himself and then a reconciliation becomes necessary.

While listening to a masterful and most inspiring lecture, delivered before the Hennepin County Medical Society by Dr. Tomlinson of St. Peter, who had been requested to tell about insanity, certain strings were set vibrating in my mind. We were told that insanity had a long prodrome and frequently was connected with a progressive arteriosclerosis that had begun at the time of puberty in offsprings from tuberculous ancestry.

Is there any relation between arteriosclerosis and pretuberculous states or tuberculosis? In practice we are interested in early arteriosclerosis, mainly of the gouty type, which again is found in the heavy meat-eater, the sedentary, or in the hard laboring man: he appears as the opposite of the pretuberculous, enjoys a good appetite for fat as well as for other foods, and usually gives the idea of a robust farm-bred or overfed person. The pretuberculous, on the other hand, with an innate disgust for fat, gives us the picture of a city-bred, delicate, or neuropathic individual. The physician at a glance recognizes each class. So, at least a *prima vista*, we have two distinct types among humanity, viz.: the antituberculous and the pretuberculous; denoting respectively the gouty and those descending from tuberculous ancestry or otherwise being predisposed to tuberculosis.

Arteriosclerosis is considered to consist primarily in a degeneration of the tunica media, effected by high tension. This, again, is caused by overwork and strain, bodily or mental, or by anything constricting the arterioles, as nitrogenous materials in excess of needs or with deficient excretion. Omitting the numerous other causes of early arteritis as tobacco and other vasoconstricting poisons, exogenous and endogenous, it seems that in the gouty type the difficulty is principally due to mechanical strains or nitrogenous excess. As we all know, arteriosclerosis does attack the tuberculous after some time, but the rationale of the pathogenesis is of a different nature. We

here have, besides denutrition, vasodilatation, giving diminished tension, and although agreed that arteriosclerosis depends on mechanical strain on the media, possibly interfering with the vasa vasorum, we would take exception in the case of tuberculosis. As arteriosclerosis first attacks the part of the media with no vasa vasorum, and this part as well as the intima is nourished by imbibition from the main blood stream, it must be plausible that in tuberculosis with vasodilatation the arteriosclerotic changes must be operated by direct imbibition of toxin, independently of either tension or interference with the vasa vasorum. Also in the pretuberculous arteriosclerosis develops under circumstances very different from those connected with the gouty type. Occurring more frequently in concealed parts of the anatomy, it usually evades the clinician, even the pathologist, and we must step down to the cell arrangement for elucidation. The all-important reticular nucleus that directs and controls the activity of the cytoplasm contains chromatin, plastin, nucleoproteins, calcium, iron, etc. The cytoplasmic reticulum fibers, continuous with those of the nucleus, are also composed of plastin and calcium. In the reticulum spaces we have (1) ordinary proteins, (2) nucleoproteins with phosphoric acid, (3) calcium combinations, and (4) proteins in combination with fatty acids, fat according to some, and phosphoric acid, thus including lecithins and the much discussed liposomes. I shall beg for the sake of convenience, also avoiding some hair-splitting contention, to designate all of the fourth class as lipoproteins. It may be convenient for an easy understanding to touch on the fat and calcium metabolism. The fatty elements attract calcium salts and further their suspension or solution by the high increase of carbonic oxide, as occurs during catabolism of lipoproteins. This enables the reticulum fibers and nucleus to assimilate calcium for the maintenance of the resisting power of the cell. Several researchers already agree that fatty derangements as myelin formations are the immediate forerunners of nuclear degeneration. Besides acting as a mechanical support the calcium content of the cell must also be reckoned as the important factor in inhibition of catabolism, and at times as a neutralizer of certain poisons. We must, as one of the important premises on which this article is based experimentally and chemically, admit that there exists a mutual attraction between fatty substances and phosphoric radicles on one side and calcium on the other. Intracellular deficiency of one determines intracellular deficiency of the other. Given a small calcium content of the cell, we shall expect the consequent increased catabolism to result in an undue loss of protein from the lipoproteins, and, at least occasionally, as in states of denutrition, to occur too quickly for the latter to be restored in due time by protein assimilation. Under such circumstances the setting free of the fatty materials from the lipoproteins may result in myelin formation, fatty degeneration, and, if the deranged fatty matters unite with calcium ions, we may get calcium soaps and calcareous degeneration. This may be the modus operandi in the pretuberculous of acquiring arteriosclerosis. Occurring as a phase of denutrition it must be fundamentally different from arteriosclerosis in the gouty who as often suffer from hypernutrition and naturally require treatment of an opposite nature in spite of similarity in microscopic appearance. As for inhibition becoming diminished by a loss of calcium, we have evidence in the tetany following removal of the parathyroids, since this event has been found to be accompanied by a loss of that element from the cerebral cells. Even, if, as some may aver, the operation results in an intravascular accumulation of monovalent cations or ammonium combinations that may antagonize calcium, it is yet the calcium that inhibits. Loss of calcium by lactation is said to have caused spasmodic conditions. Again, in spasmophilia, calcium has proved beneficial. In this condition an interesting clinical proof is evinced of the interrelation between fatty matter, phosphorus, and calcium. For if in such a patient an increase of extracellular fat be allowed the spasmophilic condition becomes accentuated, because the extracellular fat takes up some calcium that otherwise would have entered lime-wanting cells. Give less fat, more lime, and the patient improves. If instead of calcium we give phosphorus, relief similarly occurs, as phosphorus enhances resorption of calcium. In the antiperistaltic action of calcium we have another proof of inhibition, and, with such several evidences at hand the catabolism-inhibiting virtue of calcium can hardly be doubted.

What do we know about deficiency of calcium as determining a pretuberculous state or predisposition to tuberculosis? Pregnancy and lactation are said to favor tuberculosis, and we cannot doubt that much of calcium is being lost under both circumstances. Workers in lime-kilns are reported immune. Diseases of the heart afford immunity by loading the system with carbonic oxide which, we know, favors calcium anabolism. The immunity of the gouty may be explained by his abundant assimilation of calcium, since his appetite for meat serves well to maintain the intracellular lime-attracting lipoproteins, while a perambulation of the abundant acid radicles, obligated by a high nitrogenous intake, necessarily enhances resorption of calcium. Again, considering that the poison of the tubercle bacillus is a nucleic acid, a sufficiency of intracellular calcium would afford a mode of neutralization. Lastly, it may not be an absurd idea that the mechanical or biochemical cell-strength, insured by calcium, would of itself offer protection against the tubercle bacillus. Anyone can verify that the leucocytes of the pretuberculous are very frail as compared with those of the gouty. If a pretuberculous state be inherited, we may consider that the chromosomes of the nucleus of the ovum as well as the reticulum fibers, resulting from the pulling apart of the former during the anaphase to form the daughter cells, may contain too little calcium to begin with.* The resulting delicate framework would expectedly exist in all of the cells of the embryo, and we get our pretuberculous individual with poor affinity and inborn disgust for fat.

Having already established how the pretuberculous can acquire arteriosclerosis, where do we expect it to occur? As Dr. Tomlinson has said, the brain as the last organ, and more especially the arrangements of inhibition, as underlying the very last and highest functions evolved, would be the

*An inherited defective adrenal system, involving the parathyroids, would be a competing factor.

favorable seat of arteriosclerotic changes in the pretuberculous; and following the spirit of this paper, such indeed would be inferable. For if we grant deficiency of calcium, a consequent poor affinity for fat, and consider that the brain needs much phosphorized fat with proportionately more calcium, then if it does not get a sufficiency we shall in the brain pre-eminently obtain those conditions already given as favorable to the development of arteriosclerosis. For a deficiency in fat-content again implies less resorption of lime, diminished inhibition, and increased catabolism with occasional setting loose of fatty matter and degeneration in consequence. As the grey matter is known to need more calcium than the rest of the brain, degeneration of the neurones may supervene on the same principle. As for the progressiveness of the arteriosclerosis we again must seek explanation on the inhibition basis. Suppose we visit the association spheres, the seat of unconscious and associative memory, and ask ourselves what defective inhibition in this territory would promise. We should have a diminished impediment to mental impressions, a rapid, more or less direct transmission of thought-elements from cell to cell, not stopping or switching off for deliberation. Or we may have the impulses overflowing to sociologically foreign association groups. Thus we get magnification or distortion of impressions, pleasant or unpleasant, and although the brilliant thinker who soon wears himself out, and the deteriorating genius with his grotesque associations may thus be evolved as likely as the criminal, yet, in most instances, the person suffers at bottom from a dominant, naturally resulting lack or difficulty of mental control that makes the highly self-conscious even shun society. We simply in all this have different phases of a frequently harassing heightened catabolism: If we now imagine effects of the constant strain involved in the adjusting of an unsteady mind to the requirements of advancing civilization, not forgetting an eventual magnification of the worries and axieties to which most people become subjected when they must provide for themselves, then it might be no myth that a progressive arteriosclerosis would be favored after the time of puberty. A sudden or severe mentral strain on such a subject may precipitate insanity if other psychobiological antecedents allow. The fact that the grey matter needs more calcium than the white speaks for the views adduced.

While writing these very lines a tangible illustration was afforded by a case just brought to my office, viz., a seventeen-year-old girl of tuberculous family. Her father complained that she would talk incessantly during the time of menstruation, indulging so much at her last period that exhaustion resulted and medical advice was deemed necessary. As admittedly large quantities of calcium are lost during menstruation, the logic of the case is self-evident if we accept the theories promulgated, and a clue to management is directly at hand.

As for treatment, while the gouty needs less of meat and nuclear material, the pretuberculous certainly needs a good share of both in order to maintain lipoproteins and to furnish acid radicles. By a short-cut reasoning from this paper we should simply shovel into him lime, but it probably as often devolves upon us to make him assimilate that which he already may be receiving in his food. For such purpose I recommend, besides underdone beef, phosphoric acid. Probably HCl in milk, as recommended by Dr. Russell for the tuberculous, but in smaller doses, may do well. If the urine exhibits normal or high acidity I give calcium. Country sojourn, as affording fewer irritating impulses or any life or work giving little worry and anxiety is highly commendable since a sense of security is the great keynote acting as a psychic damper on mental catabolism. I believe that insanity can thus be frequently prevented.

704 Donaldson Building.

ADVANTAGES AND DISADVANTAGES OF PLASTER-OF-PARIS AS A FIXATIVE APPARATUS.

By ROLAND HAMMOND, M.D.,

PROVIDENCE, R. I.

For many years plaster-of-Paris has been a *sine qua non* in orthopedic and surgical work. Its firmness, durability, and the ease with which it can be applied, have combined to render it almost indispensable in the treatment of tuberculosis of the various joints, in scoliosis, in fractures of the lower extremity, and after operations for the correction of congenital dislocation of the hip, bow legs, knock knees and club feet. The cumulative experience of the past points to a long record of successful treatment of these deformities, but of late years there has been a tendency with many surgeons to substitute surgical operations and mechanical appliances for the time-honored plaster-of-Paris.

Feiss[1] has called attention to the advantages of braces over plaster jackets in Pott's disease. He claims that the jacket does not correct the deformity nor even hold what correction has been gained; that it does not even fix the spine. By reason of the expansion of the plaster, and the matting down of the padding, the jacket soon becomes loose and allows so much motion that the requisite fixation is not obtained. Furthermore the jacket cannot be removed for a long period of time, and is therefore not cleanly. Respiration is impeded—an important factor in the growing child. The function of the cutaneous nerves is interfered with, and circulation is disturbed. Desquamation does not take place normally, and when the plaster is removed, a rough, scaly skin is observed. We have recently been treating cases of tuberculosis of the spine on the curved Bradford frame, and are pleased to observe that not only is the kyphos prevented from increasing in size, but the child's condition is much better than when wearing apparatus. The disadvantages attending the use of braces and plaster-of-Paris are avoided.

In treating fractures of the leg with plaster-of-Paris it is impossible to get at the limb and apply massage and early passive motions to the joints, which is such an important part of the modern treatment of most fractures. This can be accomplished, in a way, by bivalving the plaster and removing the upper shell. The massage and passive motions can be used, and the upper shell reapplied and held in place by adhesive plaster straps and bandages. But the plaster is still open to the objections of uncleanliness, interference with circulation and nerve supply, and atrophy of bone and soft parts. We have given it up in fractures of the upper extremity be-

cause splints and lighter dressings serve the purpose better.

In fixed rotary lateral curvature of the spine, on the other hand, no apparatus seems to give such good results, in the hands of most orthopedic surgeons as plaster-of-Paris. A few men, among whom are Adams[2] and Feiss, have the mechanical ability to use braces with success, but the majority of surgeons obtain their best results with plaster jackets.

Plaster has been the accepted treatment in club foot for many years. Of late, certain operations have been devised which are expected to hold the foot in correction without plaster or brace. More experience with these operations is necessary before passing judgment, but the use of plaster following manipulations and tenotomies will no doubt occupy an important place in the treatment of this deformity for many years to come.

In the treatment of congenital dislocation of the hip, a few orthopedic surgeons have used successfully a brace instead of plaster for holding the femur in its new position after the operation. Most surgeons have found plaster just as effective and more convenient to employ.

The recent work of some Italian and German surgeons seems to indicate that in using plaster-of-Paris we are dealing with a two-edged weapon. Anzoletti[3] and Roepke,[4] and later Hohmeier,[5] have shown that by applying plaster in the rhachitic deformities of the legs, a softening of the bones takes place, so that at the end of four to six weeks, the leg can be easily moulded into a corrected position. This is accomplished without giving an anesthetic and without performing an operation. It is rather startling to be made to realize that a plaster bandage, which we have applied in the firm belief that it aided in producing solid union and calcification, should really cause the bones to soften and the lime salts to disappear.

When we consider the evidence, however, the truth of the assertion is convincing. It is well known that in taking a Röntgen plate of a limb which has been in plaster for several weeks, the bone shows much increase in radiability throughout its textures, due to disappearance of lime salts. This occurs in a healthy as well as a diseased or fractured bone. It has been observed for many years in our hospital wards that if children were allowed to walk after the legs had been in plaster for a few weeks, the bones bent, showing that softening had occurred.

At the Rhode Island Hospital we have recently treated cases of bowlegs, especially those of the anterior type or saber deformity, by the use of plaster to obtain softening of the bones. At first we followed Anzoletti's method, and applied the plaster before attempting to correct the deformity. More recently we have given ether first, and corrected the deformity manually as much as possible. The correction gained at the first sitting may be only slight, but by changing the plaster at intervals of two weeks, the ultimate correction is obtained just as well and in a shorter space of time. This method is of course more applicable in young children with pliable bones. Osteomy and osteoclasis are preferable in older children and in cases where the bone is sclerotic.

REFERENCES.

1. Feiss: *Amer. Jour. Orth. Surg.*, 1908, VI, 391.
2. Adams, Z. B.: *Amer. Jour. Orth Surg.*, 1909, VII, 182.
3. Anzoletti: *Zentrlb. f. chir. u. mech. Orth.*, 1909, Bd. III. 489.
4. Roepke: *Zentrlb. f. chir. u. mech. Orth.*, 1909, Bd. III, 317.
5. Hohmeier: *Deut. med. Woch.*, 1911, XXXVII, 1940.

266 Benefit Street.

INDICANURIA AND THE PROTEINS.

By JOHN C. WARBRICK, M.D.,

CHICAGO, ILL.

If indican is present in the urine in health and if normally there is always a little present without causing any serious trouble it might be supposed that on a certain diet, especially one consisting mostly of protein articles of food, it would increase a good deal more. This is particularly the case if this form of diet is followed out for a number of consecutive days. In order to determine the relation of indicanuria to a diet consisting principally of proteins taken regularly for a number of consecutive days, and mostly of the same articles of food, a good many examinations of the urine were carefully made after each meal. Sometimes three examinations were made after a single meal, but at intervals, to find if there was any diminution or increase in the amount of indican. Then the amount of chlorides, phosphates and sulphates, and also the degree of indican present, were all noted from time to time and the results were compared. The protein diet followed was mostly one of eggs, but some meat was also taken, together with other articles. For instance, at one meal three light boiled eggs were taken along with three pieces of toast, coffee and a glass of water. Then the urine was examined and records were made in each instance of the amount of indican, chlorides, phosphates, and sulphates and also the color of the urine and its specific gravity. Then again the first day it was examined after a few hours' interval to see what changes, if any, had occurred without the taking of any more liquid or solid food. Once more on the same day it was examined to find out if there were any changes from the previous examinations. After the first meal in the morning the amount of indican was above normal as indicated by the figure 6 according to the method used by A. Robin. This consists of Obermeier's reagent, which is chemically pure hydrochloric acid 1000 cubic centimeters, ferric chloride 2 grams, a 25 per cent. solution of lead acetate and a solution of potassium chlorate, 34.6 grams to water 1000 cubic centimeters; also 2 cubic centimeters of chloroform. To 10 cubic centimeters of urine add 1 cubic centimeter of lead solution and filter. Put 5 cubic centimeters of the filtrate in the test-tube and add 5 cubic centimeters of Obermeier's reagent; then add 2 cubic centimeters of chloroform and shake the mixture a number of times. The chloroform will be colored a light or a dark blue if indican is present. Add drop by drop some of the potassium chlorate solution until the blue color disappears, shaking the mixture all the time. Some may find this method rather tedious to do every time in estimating the amount of indican, but it is a reliable and a correct method to use and need not take any longer than a minute to perform. When the index figure of indican was at 6 at the first examination the specific gravity of the urine was not high nor was the amount of chlorides present very great. At the next examination a few hours later in the same day the amount of indican was the same as at the first test, as indicated by the figure 6, while the specific gravity was low at 1016 and the chlorides were not very high, being much the same, 25-387.

At the next examination about two hours later the same day the amount of indican diminished to the figure 4, while the amount of chlorides was much the same. Still later the same day something was taken to eat and the urine was examined for indican and was found to be the same as indicated by 4. This was all in the same day. The next day there was a rise in the specific gravity to 1026 while the amount of chlorides increased to 45-697, but the amount of indican was the same, at the index 4. After breakfast on much the same diet the specific gravity increased to 1028, while the chlorides remained the same at the high figure of 45-697.5. Also the amount of indican was the same at 4 and a dark blue. This was at 8 A. M. At 9 A. M. on the same day the specific gravity fell to 1022, the chlorides diminished to 35-542, while the amount of indican was reduced a point to the figure 3, being pale blue. At 10 A. M. the specific gravity was the same, while the amount of chlorides diminished to 30-465 and the amount of indican to 2. At 11.30 nearly sixty ounces of water were taken during the course of a short time, about half an hour, or less. At 12 P. M. an examination of the urine was made when the specific gravity was found to be reduced a good deal to 1010, but the amount of indican remained the same at the figure 2, while the chlorides increased to the amount of 35-542. At 1 P. M. a heavier meal was taken, including fish and meat, while at 2 P. M. the specific gravity of the urine was reduced to the low figure of 1004. The chlorides were also reduced to 20-310, while not a trace of indican in the minutest amount could be found. When the amount of indican in the urine was at 6 at the beginning it was at the end of twenty-four hours completely removed from the system. The amount of indican seemed to gradually diminish at each examination made and was present every time until the last instance of the ten examinations.

The amount of chlorides gradually increased from 20-310 to the high figure of 45-697.5, found at two examinations; then from this time it gradually decreased until the last result showed it to be at the figure of the first examination, 20-310.

From a gradual increase in the amount of chlorides until the high tide was reached at 45-697.5 we might naturally look for an increase in the amount of indican also and much more so when protein food was the chief article of diet. Especially was this to be expected at the last meal, including coffee, from which combination we should expect to find some increase at least in the indican from the last analysis of the urine. However, this was not the case, for with an increase in the amount of chlorides there was a steady decrease in the amount of indican under these circumstances. The amount of sulphates being stationary at point 1 during three examinations increased to 3 and remained at this figure for only two examinations. The amount of sulphates did not gradually increase with the amount of chlorides as it might be expected to do until the high chloride tide of 45-697 was reached, when the sulphates increased to 3. Now, in spite of the fact that the chlorides were increased and that the sulphates increased also, although not for any length of time, there was no increase in the amount of indican at all, but otherwise a decrease. The phosphates, as will be seen, remained much the same from the beginning to the end. They were at 3 during the first report and only increased once a single point to 1 during all the remaining examinations. Where the amount of chlorides was high the specific gravity of the urine increased and also the color which deepened some.

From all that has been written about the presence of indican in the urine and the causes that tend to produce its formation, it might be supposed that on a certain diet, especially one consisting chiefly of proteins, an increase of indican would occur, but under these circumstances the increase did not take place. On the other hand, the indican disappeared in a short time, without much trouble and also without any medication whatever. It might be supposed, and reasonably so, that indican may form more readily in the urine of some persons than in that of others, while it may be more difficult to remove it from the system of some individuals than from that of others.

April 7—2 P. M., dinner, 3 soft boiled eggs, 3 pieces toast, 2 cups coffee and a glass of water. Urine examination: Specific gravity, 1016; yellow; indican, 6; chlorides, 20; phosphorus, 3; sulphur, 1. 7 P. M., specific gravity, 1016; yellow; indican, 6; chlorides, 25; phosphorus, 1; sulphur, 1. 9 p. m., specific gravity, 1016; light yellow; indican, 4; chlorides, 25; phosphorus, 1; sulphur, 1. 11 P. M., 2 cups of coffee, corned beef, bread. Urine examination, specific gravity, 1016; light yellow; indican, 4.

April 8—7 A. M., specific gravity, 1026; yellow; indican, 4; chlorides, 45; phosphorus, 1; sulphur, 3. 8 A. M., 3 boiled eggs, 3 pieces of toast, 2 cups of coffee. Urine, specific gravity, 1028; yellow red; indican, 4, dark blue; chlorides, 45; phosphorus, 2; sulphur, 3. 9 A. M., specific gravity, 1022; reddish yellow; indican, 3, pale blue; chlorides, 35; phosphorus 1; sulphur, 1. 10 A. M., specific gravity, 1022; reddish yellow; indican, 2; chlorides, 30; phosphorus, 1; sulphur, 1. 11.30 P. M., water, 60 ounces. 12 noon, urine, specific gravity, 1010; bright yellow; indican, 2; chlorides, 35; phosphorus, 1; sulphur, 1. 1 P. M., dinner, soup, fish, meat, bread, 2 cups of coffee and potatoes. 2 P. M., urine, specific gravity, 1004; pale yellow; indican, none; chlorides, 20; phosphorus, 1; sulphur, 1.

306 East Forty-third Street.

INNOCENT COLON BACILLI IN URINES.*

By ANTHONY BASSLER, M. D.,

NEW YORK.

In the ardent search for the cardinal signs of a disease, and in the still present tendency in medicine of binding ourselves by an obsolescent system of classification and by an inadequate terminology, difficulty is encountered in seeing things of worth in other fields than our own, even when these pertain to conditions in which we are the most interested. The time-honored classifications, based upon clinical observation aided by morbid anatomy, are breaking ground for those which have their foundations in bacteriology and ampler pathology. This broadening and unifying tendency will not make for the destruction of the specialties, as some believe, but for better specialists, and it is possible that a new type of medical men known as diagnostitians will be necessary to help them.

Of late years the medical literature of the country has so thoroughly presented the importance of *B. coli communis* in connection with inflammatory and infectious conditions in the urinary tract, that one is inclined to assume that a urine containing many

*Read before the New York Academy of Medicine, May 15, 1912.

of them has a stern pathological importance of genitourinary interest. That such a urine commonly does have this pathological importance there is no question, but to show that it does not always have it is the purpose of this paper. It is stated that there are three modes of infection by which bacteria can gain the urinary canal: (1) ascending infection by the path of the urethra; (2) descending or hematogenous infection where the organisms are conveyed from a primary focus to the urinary tract and excreted by the kidney; and (3) transparietal infection through the lymphatics from the intestine to the urinary tract and bladder mostly. Since *Bacillus coli communis* is a common denizen of the intestinal tract of all mammals, it is probable that most of the coli infections of the urinray tract take place in the hematogenous way in the kidney cases and the transparietal in the cystitis. Whether a lesion in the intestine is necessary for its liberation from the gut I do not know, but there is substance for this belief in the pyelitis, septic nephritis, or cystitis occurring in the convalescence of typhoid, dysentery, or acute diarrhea; in the transitory coli hematuria that follows operations for appendicitis and other surgery upon the intestines, even to hemorrhoids. Granted that this is so, there is also good reason for the belief that bacteria under certain unknown conditions can pass through the walls of the gut and gain the body in that way. This has been proven and that it is more common than ordinarily believed the following would seem to suggest.

The largest proportion of cases that I have to deal with are those of states of chronic excessive putrefaction in the intestines. To make these diagnoses properly, detail work in the examination of the feces and urine is essential. Several months ago while examining a urine sediment with the low power and split illumination (which gives a fair degree of dark field effect) I noticed that in certain areas of the field particles on the slide were in motion. At first I thought this to be due to coursing of small amounts of urine carrying particles with them disturbing others on their way. Further observation proved that all of the specimen on the slide was stationary and that this movement was localized in certain areas. At one place I noticed a small urinary cell to be raised on one side edge up, and then drop back, perhaps being carried a short distance before it rested on the flat again. In another area amorphous matter was being pushed about in a fibrillary movement. Evidently there were present bacteria of an actively motile form doing this which the low power did not magnify enough to discern. The medium power showed the presence of many active bacilli, which were more plainly seen with the high power lens and dark field substage and arc light. With the latter instrument and an amplification of about 1,200 there were seen in this urine from four to twenty of these organisms in each field, which grown in culture and differential staining proved to be organisms of the *B. coli* class. This urine was from a female patient, so I thought that perhaps it had become infected as it was being voided from the urethra by contamination from the close-by anus, or from a chamber in which the twenty-four-hour collection of urine was being saved and in which feces had been deposited at some time before. A few days following this I examined a specimen from a male patient who collected his urine in a sterile jar and noticed the same phenomena in the sedimentary fields. Here we could exclude a close anatomical connection between the urethra and the anus, so evidently the organisms (which proved to be *B. coli* again) must have been voided in the urine. On examination of the histories, of the stool findings, and other points in the urine to confirm them, I noted that both of these urines were from cases in which a high *B. coli* content in the intestine was a definite clinical condition —that is, cases of chronic excessive intestinal putrefaction due to the *B. coli communis* as the predominant organism.

My interest being awakened in the matter, I observed sediments of each urine since then, and when I noted motile bacteria in them (providing the urine was from a male patient and had not come in contact with a bedroom chamber), I inoculated sugar tubes with a small portion of the sediment to test for *B. coli*. Altogether since then 191 fresh urines have been examined for the first time, and in these the colon bacilli in large numbers have been encountered eight times, and in smaller amounts ten times; thus the colon bacilli were present in over 9 per cent. of all urines from persons having no genitourinary symptoms. As most of these were cases of intestinal putrefaction in which one might expect this phenomenon, it is significant to observe that seven of them were not. It seems, therefore, that *B. coli* in considerable amount in urines is not uncommon in the nonputrefaction cases, although somewhat more commonly met with in them. None of these patients had any symptoms suggestive of kidney or bladder disturbance, and there were no pus cells in the urines indicating inflammation or concomitants of infection. What makes me feel that perhaps some catarrhal condition of the bladder existed in most of them was the rather high content of mucus found, but I have observed just as high contents of mucus in urines in which no infecting agents could be ascribed as probable causes, and not all of my cases showed this. It is reported that in mild *B. coli* infections of the bladder, little change can be noted in the appearance of the interior of the organ, of which the most notable lesions are congestion and swelling around the neck of the bladder and in the area of the trigone, and a possible general anemia of mucous membrane with here and there areas of congestion. But in these cases certain urinary symptoms are present to warrant the employment of a cystoscope, whereas in mine these were absent and thus its use was unnecessary and even not to be advised. All of these urines were more or less foggy looking, suggesting a bacteriuria, and very highly acid —no doubt, from products of these bacilli, which are energetic acid-makers.

We know that in systemic states supplying them, the pyogenic organisms, notably the coccal forms, and the tubercle, typhoid, and colon bacilli are found in urines. In a general way, however, it is understood that urines of normal persons are practically sterile of pathogenic organisms. The colon bacilli are not as pathogenic as the other forms mentioned, but when present in large numbers in the body outside of the intestinal tract they are considered pathogenic. While this is very possible in a general way, I feel that in so far as the bladder is concerned it is not always so, and it seems that pus must be present with them to consider it as such. There are apparently normal individuals whose bladders are incubators, and whose urines are the media for the proliferation of *B. coli* which does not seem to do any harm to them, and the presence

of which need not concern us very much. In the constituents of normal urines there are carbon, nitrogen, hydrogen, and salts in solution for their growth and proliferation, and, not requiring oxygen, they grow, utilizing these products to sustain themselves. While urine is far from a perfect culture medium to grow *B. coli* in, this organism can utilize it if needs be and get along well with it when there is nothing else to have and the urine is within the body. Experiments that I have made on the average normal urine inoculated with *B. coli* is that the microorganism cannot proliferate to any considerable degree. But it does to some extent, and is not destroyed by any normal urine I have yet experimented with. It is a fact that there are not a few apparently normal individuals whose daily output of urine contains not much fewer coli bacilli than their feces do, and that many more have them in lesser amounts. It is probable that the gases that these organisms must generate go into solution in the urine in the bladder. This can be further proven by placing such coli urines in fermentation tubes, when, after standing for days, although the coli bacilli are actively proliferating in them, very little gas formation is present.

126 East Sixtieth Street.

THE DIFFERENTIAL DIAGNOSIS OF PULMONARY TUBERCULOSIS:

A STUDY BASED UPON 519 NON-TUBERCULOUS CASES ADMITTED TO GOUVERNEUR TUBERCULOSIS CLINIC FROM NOVEMBER 1, 1903, TO NOVEMBER, 1910.*

By I. P. STARR, M. D.,

NEW YORK

ASSISTANT ATTENDING PHYSICIAN GOUVERNEUR TUBERCULOSIS CLINIC.

A study of differential diagnosis is of peculiar importance in pulmonary tuberculosis because of the acknowledged difficulty in recognizing cases in their incipiency, and the great importance both to patient and to the community of this early recognition.

It is generally admitted that the physical signs of an incipient case may be so slight as to escape even the trained observer, and on the other hand the symptoms with which such a patient presents himself may simulate a variety of other diseases. In the great number of cases presenting themselves at the tuberculosis clinic of a city hospital, such as Gouverneur, a certain number of puzzling incipient cases are seen, and a large percentage of patients wrongly diagnosticated as tuberculous and suffering from other conditions.

A study of these non-tuberculous cases seems to us of interest and importance for the following reasons: (1) These cases were referred to our clinic on the suspicion, or with a positive diagnosis, of consumption. They may therefore be considered as fairly representing the types of cases usually confused with pulmonary tuberculosis and most often mistaken for it. (2) In the majority of these cases, the history and symptoms correspond so closely with those of the positive cases that a comparison of the two groups is not without value. (3) So many of these cases were directly exposed to tuberculosis that they demanded careful and prolonged observation on that account if for no other. Finally, the ultimate decision recorded affords the best practical study of differential diagnosis at our disposal.

Out of the total of 2,151 cases included in this review, 519 were grouped as non-tuberculous.* Doubtless, in some of these, our decision was at fault or based upon insufficient observation; but all cases discharged at any time from the clinic as non-tuberculous, and later readmitted with positive signs (either acquired in the interval or originally overlooked), are excluded from this group.†

Of these 519 non-tuberculous cases there were 276 males and 243 females. The ages represent all decades, the greatest number, as with the positive cases, falling between twenty and forty years. Thus, there were 38 under ten years; 116 between ten and twenty years; 132 between twenty and thirty years; 120 between thirty and forty years; 81 between forty and fifty; 19 between fifty and sixty, and 13 over sixty years of age.

The family history in these cases is as frequently positive or suspicious as in the tuberculous cases, 99 giving a history of tuberculosis in one or both parents, 74 with a suspicious family history, and 346 without any history of tuberculosis. That is, there were 19.2 per cent. with positive histories; 14.2 per cent. with suspicious histories, and 66.6 per cent. with negative histories, as compared with 22.9 per cent. positive, 2 per cent. suspicious, and 73.5 per cent. negative histories in the tuberculous cases.

Naturally, the commonest symptom in all these cases was cough, 224 of this group coming to us with that complaint alone. Other suspicious symptoms—as hemoptysis, fever, loss of weight or strength—were also presented, as the following summary of the complaints on admission will show:

Complaints on Admission	No. of Patients	Percentage in Non-Tuberculous Cases	Corresponding Percentage in Tuberculous Cases
Cough	224	43.2	47.1
Cough and pain in chest	42	8.1	....
Cough and dyspnea	24	4.6	....
Cough and hemoptysis	17	3.2	3.4
Pain in the chest	66	12.7	9.9
Hemoptysis	16	3.08	2.5
Weakness	20	3.9	5.9
Chills, fever and sweats	6	1.15	1.0
Loss of weight	3	0.57	0.4
Digestive disturbances	20	3.9	4.1
Symptoms referable to the throat	15	2.8	4.7

Twenty-seven presented no symptoms whatever (5.2 per cent.); and in 39 cases (7.1 per cent.) the symptoms were not suggestive of tuberculosis.

The duration of these symptoms previous to admission to the clinic was as follows:

Duration of Symptoms	Number	Percentage	Corresponding Percentage in Tuberculous Cases
Under one month	73	14.0	7.3
1 to 3 months	49	9.4	11.9
3 to 6 months	74	14.2	17.0
6 to 12 months	56	10.7	20.2
1 to 2 years	63	12.1	15.5
2 to 3 years	58	11.1	8.2
3 to 5 years	45	8.7	7.7
Over 5 years	55	10.5	6.9
Not stated	46	8.8	1.1

The comparison of percentages shows a relatively higher average for the non-tuberculous cases at the extremes of the table, while the most frequent duration recorded for the positive cases was between six months and one year.

The number of these cases giving a history of

*Submitted at Staff Meeting in February, 1911.

*This is exclusive of the children of tuberculous patients discussed in a separate section.

†There were, in all, only 11 such cases, and they were studied under the section on Special Cases.

direct exposure to tuberculosis was seventy-seven, *i.e.* 14.8 per cent., as compared with 21.1 per cent. of those with a history of exposure in the positive cases. That is to say, they came, in part at least, from that portion of the community in which tuberculosis is to be expected and sought, *i.e.* among those living with the tuberculous.

The final diagnosis reached in these cases is, after all, the point of great interest, medically, in our review of the non-tuberculous charts, since it summarizes the commonest errors which may be made in favor of tuberculosis, as well as grouping together the diseases most often confused with it. In a number of our non-tuberculous cases, no diagnosis was possible, on the data charted, except for the single term "negative," for at the time of discharge all symptoms had disappeared and in these cases there were no significant physical signs. Doubtless many of them came in with tracheitis, subacute bronchitis, or nose and throat conditions giving rise to cough, but we have no positive evidence in support of this supposition. There were 284 such cases dismissed as negative. Of the remaining 235 there were 53 cases of chronic bronchitis and emphysema; 48 cases of simple bronchitis; 49 cases of chronic endocarditis; nasal obstruction (adenoids and hypertrophied tonsils), 15; anemia, 6; leucemia, 2; lobar pneumonia, 4; asthma (bronchial and cardiac), 6; tuberculous osteomyelitis (with pulmonary involvement), 4; pleurisy (non-tuberculous), 5; acute laryngitis, 2; cervical rib, 2, and 55 miscellaneous diagnoses, including such diverse conditions as cirrhosis of the liver and exophthalmic goiter. Six charts bore the diagnosis of "healed lesion," the physical signs being suggestive only of the old tuberculous process entirely inactive.

The difficulties involved in the differential diagnosis of such cases, presenting histories and symptoms so similar to those of our positive charts, are well illustrated in this list of the conditions which were suspected of, or mistaken for, pulmonary tuberculosis. Any illness accompanied by cough, loss of weight or color, pain in the chest or dyspnea, weakness and rapid pulse may be suspected of tuberculous infection, and such a suspicion is often confirmed or refuted only after repeated examinations and a considerable period of observation. From our figures it would seem that the commonest condition to be mistaken for pulmonary tuberculosis is chronic bronchitis associated with emphysema. Our experience, however, leads us to believe that the association of these two conditions is much more frequent than its recognition. Thus, while there were 53 cases of chronic bronchitis and emphysema discharged as not tuberculous, there were 24 cases of pulmonary tuberculosis complicated by chronic bronchitis and emphysema, separately or in combination. The difficulty in excluding tuberculosis in these cases is due to the variety rather than the deficiency of physical signs. In a chest full of râles and presenting the emphysematous type of resonance and breath sounds it is sometimes difficult or impossible either to detect or to exclude tuberculosis, however suspicious the symptoms or history. Often only a positive sputum after a number of negative examinations decides the question. Contrary to the older teaching, the two conditions seem to occur together with comparative frequency.

That these 519 non-tuberculous cases were not easy of recognition or differential diagnosis can be attested by the fact that the majority were sent through other clinics and from competent observers. A certain number, of course, were referred from the various philanthropic societies and other lay organizations, from whom we also derive many of our positive cases. To be exact, 148 of these negative cases were sent to us from the Board of Health; 110 from the medical clinic of our own dispensary; from private physicians, 16; from other tuberculosis clinics, 23; from Board of Health nurse, schools, and school inspectors, 5; from churches, settlements, and social workers, 23; from the United Hebrew Charities, 34; and the Charity Organization Society, 25; from sanatoria and convalescent homes, 3; and from other patients, 31. Twenty-four applied for examination or treatment on their own initiative. The source of 69 of these cases was not given on the charts.

The only conclusion to which a study of these cases has brought us is the familiar and often repeated caution not to make a diagnosis hastily upon insufficient data or too brief a period of observation. The number of apparently negative cases with positive sputum, as well as those in whom a positive sputum or definite signs were only detected after repeated examinations, would alone justify this caution. Furthermore, the difficulty of recognizing incipient tuberculosis, either alone or in combination with other conditions, makes our conclusion too obvious for further emphasis.

I wish to make acknowledgment to Drs. N. G. Seymour and Max Fladen for assistance rendered in collecting the data used in this report.

22 Montgomery Street.

Primary Tuberculous Cystitis.—Gli Virghi states that although in many cases tuberculosis of the bladder is secondary to tuberculosis of the kidney or prostate, still in a considerable number of cases it may be shown to be primary in the bladder. These cases are quite curable by local applications to the bladder combined with attention to hygiene and diet such as is given in tuberculosis elsewhere. The bacilli carried in the circulation directly to the bladder cannot determine a specific affection unless they find a susceptible soil for their action produced by a catarrhal lesion. The principal clinical forms of tuberculosis of the bladder are that depending on renal or prostatic disease, the primary vesical form, and that produced by contiguity, or ascension of the bacilli from the genital organs. The principal symptoms are hematuria, never very prolonged, and due to congestion of the bladder, pain, which is often extreme, preventing cystoscopy and catheterization, and urinary symptoms. There is pus in the urine, but in less amount than is found in abscess of the kidney. Frequent micturition, nocturnal enuresis, and in the early stages an increased amount of urine, with incomplete retention, may be found. The urine remains acid in reaction, the bacteriological examination is interesting, while the chemical examination is of little value. There is present an increased number of leucocytes, which are polyhedral, dentated, or prolonged. Cystoscopy shows in primary cases congestion about the mouth of the bladder, while in renal tuberculosis the congestion is around the mouth of the ureters, and the tubercles are placed there. The author's treatment is local and although it lasts some time it results in a cure. He also attends carefully to the general health. Locally he evacuates the bladder completely, and then injects analgesic and antiseptic solutions, using corrosive sublimate with cocaine once daily. This lessens the pain and cleanses the bladder.—*Giornale Internazionale delle Scienze Mediche.*

MEDICAL RECORD.

A Weekly Journal of Medicine and Surgery.

THOMAS L. STEDMAN, A.M., M.D., EDITOR.

PUBLISHERS

WM. WOOD & CO., 51 FIFTH AVENUE.

See fourth page following reading matter for Rates of Subscription and Information for Contributors and Subscribers.

New York, July 6, 1912.

EFFECT OF DRUGS ON THE OPSONIC INDEX.

WHEN the opsonic doctrine was first made public it was freely prophesied that drug therapeutics would have to be completely rewritten. We believe that Wright went so far as to state that no remedy could be shown to act either favorably or unfavorably in disease unless it raised or lowered the opsonic index. Prominent homeopathists saw here a long-wished-for opportunity to employ an external checking system for their system of therapeutics. It is evident that no widespread concerted or systematic effort is likely to be made in this field, for the technical difficulties are very great and the proverbial "two thousand" positive results believed to be necessary to overantagonize the combined sources of fallacy in observation require a long time for their accumulation and digestion. It is almost certain that this vast problem will only be attacked piecemeal, when particularly favorable conditions are at hand, and when the immediate problem to be solved is one unusually well suited for a demonstration at will.

Professor Strubel of the Opsonic Laboratory of the Royal Veterinary High School at Dresden (*Berliner klinische Wochenschrift*, June 3) appears to have made some peculiarly happy discoveries in this field. Starting with the knowledge that bromides and iodides cause acne in a large proportion of cases, and assuming that this acne must come about because the resistance to the action of pyogenic cocci is diminished by the drugs, he was able to show that a single large dose of sodium bromide or iodide was able to depress the opsonic index within one hour's time. The index rose to its normal height somewhere from 6 to 52 hours later. The depressing effects of continuous administration of these substances on the index may readily be imagined. Strubell now made the important discovery that a staphylococcus vaccine exhibited at the same time to a subject sensitive to iodine and bromine would antagonize the development of the acne. He then inquires whether this depressing action is due to chemical or physical causes. Sodium chloride, even in very large doses, did not affect notably the opsonic index to staphylococci, while large doses of urea depressed it temporarily. It is evident that large doses of salts have *per se* some influence, however slight and transitory, on the opsonic index, but in order to explain iodic and bromic (he might have added chloric) acne some special causal moment is present, dependent on the halogen component.

The known bactericidal properties of arsenic and the fact that Fowler's solution can to some extent antagonize bromic and iodic acne led Professor Strubell to test it in regard to its action on the opsonic index. Experiments by the author and his staff on their own persons appeared to show that Fowler's solution raised the opsonic index not only against the staphylococcus but against the tubercle bacillus as well. A few tests of salvarsan seemed to show that its marvelous activity in certain directions cannot be due to any general property of improving the opsonic defence. As far as the author has gone he sees no clean-cut evidence of specific activities. Certain substances depress, others elevate the opsonic index. This fact will have to be added to what we already know of the action of a drug. If a medicament lowers the opsonic index for a given germ, an antagonist should be given. If we have to give potassium iodide we may have to exhibit staphylococcus vaccine (or Fowler's solution as of yore).

SELENIUM IN AN OLD ROLE.

THE demonstration by Fournier d'Albe at the Optical Conference Exhibition in London, June 25, 1912, of the remarkable properties of the "optophone," an instrument by means of which the blind can be made to become aware of the proximity of light or darkness through the agency of sonorous vibrations, directs attention to a property of selenium that has been known for many years and that has already been utilized for similar purposes. The optophone appears to be an adaptation of the photophone which was invented by Alexander Graham Bell in conjunction with Sumner Tainter. One of the properties of the crystalline variety of selenium is its electrical conductivity which increases considerably on exposure to light, especially to the red rays. Professor Bell used the telephone receiver as a means of translating into sounds the electrical variations occurring in selenium in response to successive flashes of light. Sounds could be transmitted without wires over considerable distances by means of the sunbeam reflected from an oscillating diaphragmatic mirror attached to the telephone mouthpiece; the oscillating ray, impinging upon the bit of sensitive selenium in a telephone receiver, caused electrical changes which were in turn translated into sonorous vibrations. It was subsequently shown that other substances, such as lampblack, could be substituted for the selenium. Later Mercardier found that different parts of the spectrum produced different sonorous effects. Bell, in amplifying these experiments, showed that the intensity of the sound increased as the telephone receiver was moved from the violet into the ultra-red portion of the spectrum, corresponding to the increase in the heat waves and showing that these are responsible for the sonorous effects. These observations were utilized in the invention of the spectrophone, by means of which bands of sound and of silence are produced to correspond to the colors and absorption bands of the spectrum and

by means of which even the invisible portion of the spectrum can be analyzed.

The press dispatches from London state that the optophone is contained in an oblong box twenty-six inches long and eight inches deep. A blind man held this in one hand and in the other held a cardboard cylinder which was moved slowly before him while being pointed toward the window. By means of the sudden changes of sound in the telephone receiver he could count the number of persons that were standing between him and the window. It is suggested that future developments of this instrument may enable the blind to distinguish by means of audition the shapes of objects and even large print.

Whether the optophone will ever be of any real practical value to the blind is extremely doubtful. The idea is preposterous that this instrument "makes light audible." By translating radiant energy into sonorous effects it may enable the blind, by means of the association of ideas, to recognize changes in the external world which he is already able to appreciate by means of the unaided ear and a well-developed sense of touch. He does not need the optophone to apprise him that he is near an open window, for his acute hearing will enable him to distinguish its proximity by means of the sounds transmitted from the street, and his skin will feel the coolness of the outer air or the warmth of the sunshine. It does not take him long to detect the presence of other individuals in the room. The optophone provides the blind with a roundabout means of distinguishing light from darkness, for which faculty he is abundantly equipped by means of his intact senses and his power of association of ideas. It is to be hoped that human ingenuity will eventually find some use for the optophone other than that of a curiosity.

GRADUATED LABOR IN THE TREATMENT OF THE CONSUMPTIVE.

Although statistics regarding tuberculosis are occasionally somewhat confusing, and it is difficult to say exactly how great progress is being made toward the control and eradication of the disease, it would seem to be a sound statement to make that pulmonary tuberculosis generally is showing a slight decrease in almost all parts of the civilized world. Methods of treatment now appear to have been evolved which meet the exigencies of the situation in a satisfactory manner. A combination, or rather a cooperation of the dispensary, the sanatorium, and the hospital treat and care for those afflicted with pulmonary tuberculosis in the way best adapted to the individual and so that the disease shall spread as little as possible. There is, however, not much new to be said concerning tuberculosis, as Adami pointed out in his presidential address a short time ago before the annual meeting of the Canadian Association for the Prevention of Pulmonary Tuberculosis in Toronto. But there is one feature of the situation which is especially worthy of earnest attention, the need for sending patients out of sanatoriums able to earn their living and not to be a drag upon their family and relatives and a menace to the community. This is one of the hardest problems to solve successfully, so far as the tuberculous are concerned. It is a notorious fact that sanatoriums are frequently compelled to discharge their patients before they are in a condition to bear well the buffets of the world. According to C. D. Parfitt it has been estimated that 75 per cent. of tuberculous patients leave sanatoria or health resorts before the disease is arrested and that 98 per cent. of all patients have to be treated at home.

Oliver Bruce of London, England, who read a paper at the same meeting, holds that much can be done at the sanatorium itself in fitting the consumptive to take his part in the world of work, and he demonstrated the manner in which he believes this result can be brought about. He is a follower of Wright, and has brought Wright's discovery of opsonin into the service of the tuberculous. Opsonin is a protective substance and makes for health and thus it is obviously desirable to raise the quantity present in the serum of all infected people. Rest first and graduated labor afterwards, according to Bruce, have this effect. It is found in the case of a person with tuberculosis that when the temperature is high his opsonic index is low and *vice versa*. The opsonic index varies inversely with the temperature, and as in regulating the amount of exercise to be prescribed in graduated labor, some guide is necessary to show the amount of protective substances which are being elaborated as the result of the exercise, and as it would be too tedious to take the opsonic index as a guide, the knowledge as to how the opsonic index varies with the temperature permits the substitution of the temperature chart for the index. There are now two main facts to work on, Bruce said, (1) that the amount of opsonin or antibody in the blood can be raised by exercise and (2) that the temperature chart and feelings of the patient are a sufficient guide to an experienced observer as to whether the amount of exercise prescribed is too great or too little.

Paterson of England, it is claimed, was the first to find out and to put the discovery into practice that graduated exercise is an excellent mode of controlling tuberculosis and of rendering certain of its subjects selected for the treatment able to take their places in the working world after a prescribed course. Bruce and others have put the treatment on a scientific basis which Paterson had not done. Indeed, Bruce claims that the graduated labor system of treatment is an advance in the scientific care of the consumptive. It aims at raising the amount of antibacterial substance in his blood to as high a degree as possible and keeping it there by gradually increasing doses of tuberculin. Emphasis is laid on the fact that the supervision of consumptives being treated by means of graduated labor must be left in the hands of a person experienced in knowledge of the opsonic index. Bruce stated that results from the treatment of consumptives by graduated labor have been remarkably encouraging. Some patients, indeed, when on the final grade of labor and ready to be discharged, had indices which never varied from the normal, however hard the work, and in the last grade the work

is of the very hardest kind. The reason for this is that when the final grade is reached the lesion is so shut off from the blood stream by fibrous tissue that no toxin can be poured into the circulation and consequently there is no need for the formation of antibodies above the normal amount. Bruce thinks that such patients are, in the true sense of the word, cured—that he obtains a true clinical cure and not a temporary improvement or even an economical cure.

Cancer in Scotland.

Scotland is a small country, but nowhere in the world, not even in Germany, which has recently been so extravagantly lauded by a Carnegie Foundation investigator for its thoroughness and achievements in scientific research, is medical education at a higher standard or are medical men more able and progressive. Consequently the paper read recently before the Royal Society of Edinburgh by Sir George Beatson on the cancer statistics of Scotland from the year 1861 to 1900 is worthy of careful consideration. In the last decade considered, 1891-1900, cancer accounted for 30,908 deaths, or 3.95 per cent. of the total. The mortality from cancer between the decades 1861-1870 and 1891-1900 increased from 3.964 to 7.274 per 10,000 people living, the rate of increase being accelerated from decade to decade. Dealing with the distribution of cancer Beatson stated that no general conclusion could be drawn as to the incidence of cancer in districts. The principal towns compare unfavorably with other districts, and among them Edinburgh stands above and Glasgow below the others. In conclusion, he confessed that the statistics did not tend to any definite results, apart from the fact that an increase in the disease, especially as affecting males, was proven. It also seemed clear that cancer was not affecting young people more frequently than formerly, in spite of the assertions of Mitchell Banks and others. The fatal incidence period in women is from 35 to 45, and in men from 45 to 55, corresponding with the different site of the disease in the two sexes. Cancer as a disease occurs not in the decline of life but on the cessation of reproductive life. Climate and geological conditions do not affect the question. Whether so-called "cancer homes" are instances of coincidence or not is not settled. The only preventive measure which suggests itself to Beatson as of any value is notification which would give more accurate information as to where the disease arises. One other thing is needed in Scotland, and that is research work on the disease, special laboratories, clinical research in cancer hospitals, and systematic investigation generally into the causes, prevention, and treatment of malignant growth. The conditions in Scotland as regards cancer appear to be similar to those in most civilized lands. Statistics tend to show that the disease is increasing, although the very fact of keeping statistics is in itself a means of magnifying the menace of cancer. As for researches into the origin of cancer, the best that can be said is that the mystery gives promise of solution at no very distant day. With regard to treatment, too, the surgeons are probably quite correct when they contend that operation when such is possible is the only method at present known for curing cancer, but even then a return is far from unlikely.

Spreading the Upper Jaw for Mouth Breathing.

That a high palatal arch is naturally associated with a deflected nasal septum is well known and this associated deformity is one of the commonest causes of mouth breathing. In the high, narrow palate it is also common to find the teeth imperfectly aligned, so that when the upper teeth are spread by wearing the brace employed by the dentist, it is easy to understand that in the child the spreading of the upper jaw would have a tendency to flatten the high palate and correct the septal deformity and incidentally to facilitate normal nasal respiration. Landsberger has made a study of the entire subject of the influence of the teeth on the development of the nose. He has noted among other data that defective development of the teeth tends to cause hypertrophy of the turbinal bones. Again, if the *anlage* of the teeth is seated too far inward, there results a deviated septum and narrowing of the respiratory fissure, with formation of a high palate. Several years ago the author began to employ a special apparatus for the relief of this condition. At a recent meeting of the Berlin Laryngological Society (*Berliner klinische Wochenschrift*, June 10) Sturmann announced that he had recently employed the resource in the case of a youth who had marked septal deformity and unusually high narrow palate. After the patient had worn the brace for two and a half months Sturmann was surprised to find that the palate and septum were practically normal. There was none of the recession of the front teeth which might occur in theory. This resource seems worthy of more extensive trial.

The Riddle of Trypsin.

The behavior of trypsin is a never failing source of interest to the physiologist and clinician, and the more we learn of it the more incomprehensible it appears. Inert when first secreted it becomes activated by various agencies, notably the intestinal secretions, into a powerful enzyme, attacking all the types of nutriment but unable to attack the intestinal mucosa, and apparently powerless against intestinal parasites. Nevertheless it quickly attacks various living tissues with which it accidentally comes in contact, as the unprotected integument in pancreatic fistulæ, and the omental fat in pancreas disease (causing fat necrosis). As a rule it is unable to exist in the blood, an antisubstance being produced (antitryptic reaction); but it often appears in the urine. Thrown directly into the circulation it has been accused of setting up a toxic syndrome. At the recent session of the German Congress for Internal Medicine (*Muenchener medizinische Wochenschrift*, May 23), Kirchheim announced that trypsin cannot attack the urinary mucosæ, but that if it is injected beneath the epithelial layer the entire thickness of the wall of the passage becomes necrotic. The mucus secreted is the substance which confers the immunity, and not the epithelium, as he shows by crucial tests. No doubt it is also the intestinal mucus which binds the trypsin and prevents it from attacking the mucosa. In discussion which followed Kirchheim's announcement Schittenhelm stated that absolutely pure trypsin may be thrown into the blood stream in large amounts with impunity, for all the toxic action of this substance, he said, was wholly due to various adherent impurities.

News of the Week.

Typhoid Carrier.—The State Hygienic Laboratory of the University of California has discovered in a sailor on the ship *Acme* a typhoid carrier who is thought to be responsible for twenty-seven cases of typhoid fever which have occurred on the ship in the last three years and a half. The sailor in question suffered from the disease four years ago and was discharged from the hospital as cured. As he had had nothing at all to do with the provisions or cooking on the ship it is thought that the infection was transmitted by means of a common drinking cup used at a water cask on the deck of the ship. Of the twenty-seven cases thought to be traceable to this source of infection four were fatal.

Death Rate Low.—For the week ending June 22, 1912, the death rate in New York was 12.16 per thousand, and the total number of deaths 1,206, a considerable decrease as compared with the same week of last year when the total number was 1,273 and the rate 13.33. For the first twenty-five weeks of this year the rate was 15.17 per thousand, as compared with 16.34 during the same period of 1911. Of the total number of deaths during the week 215 were of children under 1 year, and 343 under 5 years, and 200 of persons 65 years of age and over. Heart disease caused 168 deaths, an increase of 10; pulmonary tuberculosis 155, a decrease of 5; kidney diseases 111, an increase of 28, and lobar pneumonia 72, an increase of 20. In most of the other important causes of death there were considerable decreases.

Free Milk Station.—The first free milk station in Jersey City, N. J., where modified milk will be supplied to mothers unable to pay for it, will be open in the Whittier House on Grand street after July 1.

Psychopathic Hospital.—The new Psychopathic Hospital in Boston was opened for inspection on June 19. The building is four stories high, of brick with terra cotta trimmings, and includes every possible convenience for the treatment of patients, as well as accommodations for a large medical library and laboratories for chemical analyses, etc. The staff of the hospital includes Dr. E. E. Southard, professor of neuropathology in the Harvard Medical School; Dr. H. M. Adler, chief of staff, a graduate of the College of Physicians and Surgeons, New York; Dr. E. S. Vosburgh, executive assistant, a graduate of the Jefferson Medical College, Philadelphia, and Dr. A. W. Stearns, a graduate of Tufts Medical College, Boston.

A Mission Boat.—The schooner yacht *Fleur de Lys* has been presented to the Dr. Wilfred Grenfell Missionary Association by Dr. Lewis A. Stimson of New York, to be used in connection with the work of the Labrador missions.

Connecticut Health Board.—The report of the Connecticut State Board of Health shows that during the month of May there occurred 1,356 deaths, this being a little above the average for the month for five years. The death rate per thousand was 14.8 for the large towns, 14.5 for the small towns, and 14.7 for the whole State.

Hookworm in Alabama.—The director of the hookworm commission in Alabama, Dr. W. W. Densmore, reports that since January 1 hookworm infections have been reported in 3,588 cases. He believes that had it been possible to secure accurate returns from all the physicians in the State this number would have risen to nearly 12,000.

Dr. Carrel in France.—The report made to the French Academy of Medicine in Paris by Professor Pozzi on the results of Dr. Alexis Carrel's experiments in tissue cultivation has created a profound impression in France, and has been received with about equal enthusiasm and scepticism, judging from the newspaper reports. It has been suggested by some of the leading biologists that as these results, if authentic, form the greatest scientific advance of the generation and so cannot be accepted without the fullest proof, a deputation of French biologists be appointed to visit the Rockefeller Institute and determine for themselves that Dr. Carrel's claims are well founded. This proposal has been warmly received and is very likely to be carried out in the near future.

Yale Medical School.—In his annual report President Hadley of Yale University announces that a tentative agreement has been entered into with the New Haven Hospital by which the Yale Medical School will have all the rights of nomination of attending physicians in the hospital and the right to use the hospital for teaching purposes, provided the University agrees before July 1, 1914, to set aside a fund of $600,000, of which $100,000 shall be used to build a clinical and pathological laboratory in connection with the hospital, and the other $500,000 be used to endow it. This arrangement is considered highly advantageous to both parties, and it is to be hoped that it may soon be carried into effect.

Syracuse University.—The Dean of the College of Medicine of Syracuse University reports the following additions to the corps of instructors: As assistant professor of bacteriology, Dr. Leverett Dale Bristol, Johns Hopkins Medical School, 1907; as instructor in the department of histology, Dr. Earl V. Sweet, Cornell University Medical College, 1910; as instructor in surgery, Dr. Albert G. Swift, Syracuse, 1902; as instructor in pathology, Dr. John W. Cox, Syracuse. At the suggestion of the dean, Colgate University has signified its intention of permittting students to take the senior year in a registered medical college *in absentia*, such students to receive the bachelor's degree upon the presentation of a certificate from the college of medicine attended to the effect that his work has been done satisfactorily.

Charitable Gifts.—By the will of the late Mrs. Caroline Butterfield the Children's Aid Society of New York receives a bequest of $25,000 for a "health home" to be named in memory of her son, Frederick F. Butterfield. The New York Orthopedic Dispensary and Hospital also receives a bequest of $5,000 for the endowment of a free bed in memory of her son.

Through a decision recently handed down by the Supreme Court of Massachusetts, the Massachusetts General Hospital of Boston will receive the sum of $60,000, the amount of a bequest made to the hospital in the will of the late Mrs. Sarah Cazenove, who died thirty years ago. The will has been contested by relatives of the testator.

The Montefiore Home for Chronic Invalids has received gifts amounting to $200,000 to be used in the erection of a private pavilion in connection with the new home now under course of construction at 210th street and Gun Hill Road, New York. This will be the first private hospital for chronic invalids in the city.

The Kenosha Hospital of Kenosha, Wis., has received from Mrs. Ella F. Allen a gift of $10,000 to be used for the maintenance of a room in the hospital to be known as the Charles W. Allen room.

By the will of the late Mary E. Irwin of Philadelphia, the sum of $3,000 is bequeathed to the Children's Seashore Home at Atlantic City for the establishment of two beds as a memorial to her parents.

Col. Gorgas Honored.—The trustees of the *American Medicine* Gold Medal Award have conferred the medal for 1912 upon Dr. William C. Gorgas, Ancon, Panama, as the American physician who, in their judgment, has performed the most conspicuous and noteworthy service in the domain of medicine during the past year.

Dr. David F. Atwater of Springfield, Mass., is the oldest living graduate of Yale University. He is now in his ninety-fifth year and was graduated from the University in 1839 and from the Yale Medical School in 1842.

Dr. E. F. Bashford, director of the Imperial Cancer Research Fund of London, has accepted an invitation to deliver the Middleton-Goldsmith Lectures of the New York Pathological Society in this city next October. The exact dates and the title of the lectures will be announced later.

Dr. Eugene L. Opie, professor of pathology in Washington University, St. Louis, has been appointed dean of the Medical School to succeed Dr. George Dock, who resigned recently in order to devote his entire time to his professorship of medicine and to research work.

Dr. Charles Baskerville, professor of chemistry in the College of the City of New York, has been awarded the Edward Longstreth Medal of Merit by the Franklin Institute of Philadelphia for his investigations in the chemistry of anesthetics.

Dr. Duncan W. Blake, Jr., has been elected medical inspector of the public schools of Gloucester City, N. J.

Dr. William Kelly Simpson, professor of laryngology at Columbia University, has recently been appointed consulting laryngologist to the Presbyterian Hospital, New York City.

Medical Society of the State of North Carolina.—The annual meeting held in Hendersonville during the third week of June was brought to a close with the election of the officers for the ensuing year, as follows: *President,* Dr. John P. Munroe, Charlotte; *Vice-Presidents,* Dr. Fletcher R. Harris, Henderson; Dr. E. S. Bullock, Wilmington, and Dr. L. B. Morse, Hendersonville; *Treasurer,* Dr. Herbert D. Walker, Elizabeth City. Morehead City was chosen for the next meeting place.

North Carolina Health Officers' Association.—The second annual session, held in Hendersonville on June 19, closed with the election of officers, which resulted as follows: *President,* Dr. Lucius N. Glenn, Gastonia; *Vice-President,* Dr. George M. Cooper, Clinton; *Secretary-Treasurer,* Dr. Watson S. Rankin, Raleigh.

Chicago Medical Society.—The following officers were elected at the annual meeting on June 19: *President,* Dr. Jacob Frank; *Secretary and Editor,* Dr. Patrick J. H. Farrell.

American Institute of Homeopathy.—At the convention held recently in Pittsburg, the annual election of officers resulted as follows: *President,* Dr. Wilbert B. Hinsdale, Ann Arbor, Mich.; *Vice-Presidents,* Dr. B. Stout, Jacksonville, Fla., and Dr. Mary E. Banks, Chicago; *Treasurer,* Dr. T. Franklin Smith, New York; *Secretary,* Dr. J. Richey Horner, Cleveland, Ohio.

Glynn County (Ga.) Medical Society.—At the annual meeting held in Brunswick on June 17 officers were elected as follows: *President,* Dr. Robert E. L. Burford; *Vice-President,* Dr. George W. Blanton; *Secretary-Treasurer,* Dr. John W. Simmons.

Obituary Notes.—Dr. HENRY B. DEALE of Washington, District of Columbia, a graduate of the George Washington University, Department of Medicine, in 1887, and a member of the Medical Society of the District of Columbia and of the Society of Nervous and Mental Diseases of Washington, died suddenly at his home of neuralgia of the heart on June 19, aged 50 years.

Dr. ALBERT F. MCVETY of Toledo, Ohio, a graduate of Queen's University, Medical Faculty, Kingston, Ontario, in 1887, a member of the American Medical Association, the Ohio State and Lucas County Medical Societies, and the Royal College of Surgeons, London, died at his home suddenly of acute indigestion on June 9, aged 58 years.

Dr. R. BRUCE BURNS of Philadelphia died at Atlantic City on June 15, after an illness of three years, at the age of 62 years. He was graduated from the Medical Department of the University of Pennsylvania in the class of 1871. He was one of the founders of the Frankford Hospital as well as one of its visiting physicians.

Dr. HARRY H. HARRISON of Jackson, Miss., a graduate of the Kentucky School of Medicine, Louisville, in 1891, and a member of the Kentucky State and Hinds County Medical Societies, died at his home after a long illness on June 14, aged 51 years.

Dr. MANUEL R. MORENA of Tampa, Fla., a graduate of the Medical College of the State of South Carolina, Charleston, in 1878, and an expert on yellow fever, died at his home on June 17, aged 66 years.

Dr. HOMER V. REYNOLDS of Marietta, Ga., a graduate of the Jefferson Medical College, Philadelphia, in 1869, and a member of the American Medical Association and the Georgia State and Cobb County Medical Societies, died on June 18 in a sanatorium in Atlanta, aged 64 years.

Dr. W. F. MUELLER of Denison, Ia., a graduate of the University of Marburg, Germany, in 1869, died at his home recently.

Dr. GEORGE P. HANAWALT of Des Moines, Ia., a graduate of the Georgetown University, School of Medicine, Washington, in 1864, a member of the American Medical Association, of the Iowa State Medical Society, in which he served as secretary in 1871, and as president in 1880, and of the Polk County Medical Society, a veteran of the Civil War and a former surgeon in the National Guard of Iowa, retiring some years ago with the rank of brigadier-general, died at his home on June 19, aged 76 years.

Dr. WILLIAM WILSON WALTER of Leavenworth, Kan., a graduate of the University of Pennsylvania, Department of Medicine, in 1883, and a member of the Kansas State and Leavenworth County Medical Societies, died at his home after a long illness on June 12, aged 51 years.

Dr. WILLIAM E. GORDON of Pocahontas, Ill., a graduate of the Washington University Medical Department, St. Louis, in 1890, died at his home on June 19, after a long illness.

Dr. GEORGE F. LUCAS of Currie, N. C., a graduate of New York University Medical College in 1870, and a member of the North Carolina State and Pender County Medical Societies, died at his home suddenly on June 17.

Dr. HENRY J. C. SIEVING of St. Louis, Mo., a graduate of the Beaumont Hospital Medical College, St. Louis, in 1897, and a member of the American Medical Association and the Missouri State and St. Louis City Medical Associations, died suddenly at his home on June 21, aged 53 years.

Dr. ROBERT J. DEVLIN of New York, a graduate of the College of Physicians and Surgeons, New York, in 1881, a member of the American Medical Association, the New York State and County Medical Societies, the New York Academy of Medicine, the Society of the Alumni of St. Luke's Hospital, and the Medico-Surgical Society, dermatologist to the Northern Dispensary, and consulting physician to the French Hospital, died at his home on June 26, aged 52 years.

Dr. JUAN GARCIA PURON, who died in his native town, Llanes, Asturias, Spain, on June 9, aged 58 years, was for many years at the head of the Spanish Department of D. Appleton & Company, New York. Dr. Puron took his medical degree in Spain and when quite a young man went to Mexico to practise medicine and advance the cause of education. While there he became interested in politics and was one of the leaders in a revolution against the Government of Diaz, for which he was banished from the country. Coming to the United States he practised his profession for a time and then took up literary work. A few years ago he returned to Spain.

Correspondence.

THE CARE OF TUBERCULOUS CATTLE

TO THE EDITOR OF THE MEDICAL RECORD:

SIR:—It is astonishing to consider how differently the disease known as bovine tuberculosis is being handled in this country compared with the methods of handling infectious diseases in human beings, particularly those which are known to be readily transmissible. In suppressing smallpox, scarlet fever, or diphtheria among human beings one would not dream of making an appropriation of money and offering to pay this to such persons as voluntarily submit themselves to a test for these diseases, leaving all others afflicted with the disease to roam at large unrestrained. If there is any one thing which bacteriologists, health officers, and physicians know is positively common to infectious diseases it is that they are transmitted from persons already infected to new persons who have not yet been infected. The bacteria of infectious diseases are carried about on the bodies of men and of animals, and in this way are distributed as the man or animal moves from place to place. In taking measures for the suppression of smallpox, diphtheria, or scarlet fever, it is fully recognized that this wandering of the infected person must positively be checked or the disease will spread. Therefore a strict quarantine is maintained over the persons known to be sick and they are prevented from coming in contact with those who are well until the disease has run its course and they cease to be a menace to others. In the case of tuberculosis in human beings, while it is well known that this disease also is transmitted from those who are sick to those who are well, yet, becaue it is so widespread and because it has not been looked upon as so serious a disease as the others above mentioned, no attempts have been made to maintain a strict quarantine over infected persons. Sanitary precautions can be exercised by the majority of human beings which will prevent the transmission of this disease without quarantine.

In considering tuberculosis among cattle, however, we have to face a different state of affairs. Here it is obvious that the individual has not sufficient intelligence to carry out any sanitary precautions for herself. An infected dairy cow is certain to carry her infection and to transmit the disease to other animals if allowed to mingle with them. While this fact is well known, the action taken by our State authorities entirely ignores its existence. State laws in general have taken only two precautions. The first has been the establishment of quarantine against cattle imported from other States; the second has been to offer to pay part of the value of such animals as are destroyed after having been proven tuberculous by the application of the tuberculin test. The State laws, however, have made the tuberculin test optional. This has left the dairy cattle in the State at entire liberty to be transferred from farm to farm, from county to county, and from one part of the State to another, with no restrictions whatever. Consequently we find States some of which have made large appropriations of money amounting to several hundred thousands of dollars, spending the same in paying for the slaughter of dairy cattle, while the number of animals suffering from bovine tuberculosis is constantly recruited by the wanderings of infected cattle from herd to herd and from county to county throughout the State. This is a foolish waste of money. We cannot dodge the issue. Either bovine tuberculosis is a disease which should be suppressed by the proper application of State laws, or it is one which State laws cannot control. If it is to be brought under control it certainly must be treated as other infectious diseases are treated, namely, by quarantine. If those animals which suffer from tuberculosis are not permitted to leave the premises on which they are stationed, then the disease will cease to be transmitted from one place to another. There are few dairy farmers even among those opposed to the application of the tuberculin test who would buy an animal afflicted with tuberculosis if they had knowledge that such was the case. I doubt if there is a buyer in existence who would voluntarily accept an animal to be used for dairy purposes knowing the same to be suffering from tuberculosis. The majority of buyers accept animals on the assumption that they are free from this disease, even though the test has not been applied. It would therefore be no injustice to the buyer of cattle if the law should prohibit the transfer or the sale of an animal which had not been proven free from tuberculosis by the tuberculin test. The owner of tuberculous cattle might object to the enforced quarantine on the ground that he is prevented from selling his tuberculous cows. He is not likely, however, to receive much sympathy either from the buyer or from any one else on this point. If cows are tuberculous they certainly should not be placed upon the market without being labeled as such.

The slaughter of animals found to be tuberculous is an immense economic loss to the State. It seems probable that a large percentage of tuberculous

cattle under proper conditions would recover from the disease in the same manner that a large percentage of human beings recover. Any one who has attended the slaughter of large herds cannot help being impressed with the fact that many times a large percentage of healthy looking animals in whom but slight evidences of localized disease are found are killed, and their slaughter seems unnecessary. These animals if placed amid proper surroundings and treated by the Bang system would undoubtedly show a large percentage of recoveries.

New York State spends several hundred thousand dollars yearly in paying for slaughtered animals and yet those who have studied bovine tuberculosis believe that it is on the increase at the present time in that State. Either the campaign should be carried on more intelligently or it should be entirely abandoned. As an improvement over present laws I would make the following tentative suggestions:

1. That each dairy farm be quarantined to the extent that dairy cattle are prohibited from crossing the farm boundary just as they are now prohibited from crossing the State line until they have been proven free from tuberculosis by the tuberculin test.

2. That animals offered at public or private sale cannot be so offered until they have successfully passed the tuberculin test.

3. That in the event of the tuberculin test being applied and reacting animals being found, only those shall be slaughtered which are obviously diseased as shown by physical examination.

4. That animals which are obviously diseased as shown by physical examination by a competent veterinarian shall be slaughtered and paid for as under State appropriations provided by State laws in the past.

5. That reacting animals which show no obvious signs of disease by physical examination shall either be kept separate on the farms where they reside from healthy animals, or that the State set aside certain farms as sanatoriums for the treatment of these cases, with a view to securing the recovery from the disease of a large percentage of the animals.

CHARLES E. NORTH, M.D.

The Survival of the Premature Infant.—L. Tissier presents a study of the viability of premature infants with reference to their legal status in various countries. In Germany the state of maturity of the fetus in order that it may inherit is not defined, but proofs that the child had lived must be given; in Spain it must have lived for 24 hours completely separated from its mother; in England it must have given some signs of life after birth; in France 140 days of intrauterine life must have elapsed in order for the child to have been viable. Theoretically it is generally accepted that the child is not viable until the sixth month and cannot inherit. The author describes a case under his observation in which the child was born on January 4, in the Charité Hospital, the weight being 990 grams, and length 31 centimeters; the eyes were closed, the nails were incompletely formed, the body was red, and the movements were hardly perceptible. The infant was at first fed with a stomach tube, and later began to swallow and suck. The last menses occurred about the end of June. The patient thought conception occurred about July 14. Thus the child, still alive at the time of writing, and 36 days old, had had five months and twenty days of intrauterine life. The law does not provide for such a contingency.—*Gazette des Hôpitaux.*

OUR LONDON LETTER.

(From Our Regular Correspondent.)

HOSPITAL SUNDAY—KING'S BIRTHDAY HONOR LIST—QUEEN AT EXHIBITION OF MISSIONS TO ABORIGINES—RESEARCHES AUTHORIZED BY GOVERNMENT BOARD—DEMENTIA—ANNUAL CONFERENCE ON PREVENTION OF CONSUMPTION—GENERAL MEDICAL COUNCIL—OBITUARY.

LONDON, June 15, 1912.

HOSPITAL Sunday was the opening day of the week. The King and Queen attended the morning service of St. Paul's, their presence being without ceremony. Dean Inge was the preacher and founded his sermon on the parable of the Good Samaritan. He paid willing tribute to the work of the hospitals, which, he declared, were judiciously and economically managed. The doctors and nurses, he said, "whether they professed themselves His disciples or not, were doing our Lord's work. No more devoted work was being done anywhere."

In the afternoon our medical Lord Mayor and corporation attended St. Paul's in state, together with the Judges. The Lord Mayor with the Sheriffs had attended the morning service at Westminster Abbey, where Canon Pearce urged that recent legislation should not be pleaded as an excuse for omitting this work of charity.

The Bishop of London, preaching at Kensington, described the hospitals as "the air shafts of heavenly charity and sympathy for the purification of our lives, the most complete centers of unselfish activity in this great city, schools of moral discipline, and homes of rest."

To-day the King's birthday is officially celebrated, though not the actual anniversary. A list of honors conferred is accordingly issued—four new peerages, a number of privy councillors, 9 baronetcies and a long list of knights. Among the last are the following members of the profession: B. G. A. Moynihan, F.R.C.S.; J. Bland-Sutton, F.R.C.S.; A. G. Thomas, M.D.; St. Clair Thomson, M.D.; Lieutenant-Colonel Professor Prain, F.R.S. Among Companions of St. Michael and St. George is Andrew Balfour, M.D., director of the research laboratories, London College, Khartoum. Companionship of the Star of India is conferred on Surgeon-General H. R. Stevenson, and the same rank in the Order of the Indian Empire on Lieutenant-Colonel C. H. James of the Indian Medical Service and adviser of the Patiala State. The Kaisar-i-Hind medal for public service in India goes to Dr. Avergal of Madras. Appointments and promotions in the Order of the Bath include Surgeon-Major-General A. F. Bradshaw and Surgeon-General William Babtie. In the Royal Victorian Order Professor Ogston becomes a knight and Mr. Cheatle commander, as does Inspector-General Ninnis M.D., and Mr. Barron a member. Rickman Godlee, president R.C.S., receives a baronetcy.

The Queen opened on Wednesday an exhibition illustrating the work of missions among aborigines who are subjects of the British Crown. There is a court devoted to medical missions in which may be seen complete equipments of dispensaries and hospitals, in contrast with the barbaric implements of witch doctors and the remedies employed in China, India, and other places. There are also exemplifications of the life and habits of different peoples.

The Local Government Board has authorized some medical researches, to be paid for out of the Parliamentary fund for scientific investigations

concerning disease, viz.: (1) As to the distribution of tubercle bacilli in children of two to ten, and the incidence of tuberculosis of different forms in various parts of the country according to age, sex, and other conditions. (2) Continuation of research into arterial degeneration in man by Dr. Andrewes. (3) Joint investigation by him and Dr. H. H. Gordon. (4) Continuance of researech as to nonlactose ferments in the alimentary canal of infants by Drs. C. J. Lewis, D. M. Alexander, and Graham-Smith. (5) Continuance of Professor Nuttall's investigations on fleas and on the range of flight of domestic and allied flies.

What does the word dementia mean? Dr. Robert Jones tried to elicit opinions on this at the Medico-psychological Association. He himself held there was only one form—primary, its chief characteristic being unemotionalism, though will power and conductivity might be present. Sir Thomas Clouston wrote that the term should be used for incurable, noncongenial states of mind, and new names found for the acute form and the precox. The dominating form was the secondary or sequential, which covered five-sixths of the incurably insane and was the type of all hereditary mental diseases. Adolescent insanity and dementia precox were merely preliminary to it. Dr. Mercier, who also wrote, said he means by the word any degree of mental deterioration, temporary or permanent, whether or not with active manifestations such as delusions or disorderly conduct. A demented person was "unminded" or deprived of some portion of his mind, especially his judgment and intelligence, or of moral rectitude. The term "precocious dementia" implied that in advanced life there was naturally weakening or decay, which might set in earlier than usual. The term partial might imply a degree of failure in all faculties, or to some only, the others being unaffected. In the first sense the term "completely demented" has been used, but if all his mind were lost the patient must be quite unconscious, as one in coma is. In every case of insanity both a negative and positive factor existed. The delusion is not important, but the loss of judgment which would prevent it being entertained; not the outrageous conduct, but the loss of inhibition of conduct which permits that conduct to occur. These losses he calls the unminding or deprivation of mind dementia in the literal sense which he understands by the word.

The fourth annual conference of the Association for the Prevention of Consumption has been held at Manchester. One of the chief discussions was on tuberculosis in childhood. Dr. Raw dilated on the damage of expectoration and also condemned kissing by consumptives. The work done by the Edinburgh School Board in establishing country schools for consumptive children, and improved types of city schools, was illustrated by a lady member of the board. Dr. J. E. Squire said there was little evidence that infection occurred to an appreciable extent in school, but on the other hand there was abundant evidence of the opportunities for infection in the homes of many of the children attending the elementary schools. The presence of a consumptive teacher must be admitted to be a risk, and school teachers suffered from phthisis above the average of the population. Medical inspection should include the teachers.

Dr. Philip said tubercle existed in the majority of school children, and Dr. Priestley estimated that most children became tuberculized by their fifteenth year, but in 22 per cent. its development was indefinitely postponed. Dr. Last, from experience of 800 children, said it was an error to class tuberculosis as acute and fatal in them. It was often very insidious in its approach, and treatment was more hopeful than in adults. These opinions were elicited by a paper contributed by Professor Delapine, who gave the results of his researches during about sixteen years, and exhibited elaborate statistics. Modern teaching, he said, was that tubercle could be conveyed from cattle, contrary to Koch's view. Milk is the most important danger from bovine tubercle. His statistics showed 20 per cent. of fatal cases in children were infected through the alimentary canal, and in 22 per cent. of deaths at all ages infection had been of bovine origin. He estimated 25 per cent. of all children under five had bovine tuberculosis in some form. The relation of the insurance scheme to the disease was discussed at later sittings. The tuberculosis exhibit made a stay at Salford during the sitting of the conference, after which it passed on to Manchester.

The Countess of Aberdeen presided at the concluding meeting and gave an account of the work of the Women's Association for Preventing Tuberculosis in Ireland. She said the deaths from all forms in 1901 numbered 11,679 and in 1911 the number was 9,623, equal to 40 fewer every week. Special courses for studying the Insurance Act were being arranged in the hope it would bring together all the agencies at work in the anti-tuberculosis crusade. Dr. C. Templeton, Medical Health Officer of Health for Dundee, said the act would make it possible for local authorities to carry out a comprehensive scheme for dealing with tuberculosis without unduly taxing their financial resources. Another member thought the work would be less efficiently done when left to State officials. There was some difference of opinion expressed on this point and as to whether the campaign could be continued without imposing an excessive burden on local funds.

The General Medical Council concluded its services on Saturday. In addition to what I reported of its doings in my last, it exercised its disciplinary powers on several other cases brought before it. They were all carefully considered. It was agreed to recognize teaching of preliminary science to a certain extent in institutions duly approved, subsequent to the student passing the preliminary examination in general education. The words pharmacology and therapeutics were substituted for therapeutics, and anesthetics added in the lists of subjects for study and examination. The report of the Educational Committee was received and inserted in the minutes, as were several other reports. Other committees were reappointed, formal business transacted, and a vote of thanks to the president carried with applause.

Liverpool laments the loss of her senior physician, Dr. A. T. H. Waters, who died on Saturday last, aged 86. He had served for a long period in the Northern Hospital and the Royal Infirmary, in which his skill as a physician and clinical teacher were both much admired. He was one of the most influential advocates of establishing the University, and in due course was its Professor of Medicine. His contributions to societies and journals were always worth careful study. He had practically retired from practice for a long time, but in age and impaired health was able to indulge his literary tastes and enjoy the society of his

numerous friends, who regarded him as the highest type of a physician and gentleman.

Dr. Robert N. Hartley, formerly surgeon and ophthalmologist at the Leeds Infirmary, has died at the age of 58. He had suffered from ill health for many years and some fifteen years ago was obliged to retire. He had been prominent among those of the Leeds School who desired to have it made into a faculty of the University, and when that took place accepted the Professorship of Public Health. He suffered from a form of epilepsy which he thought originated in an injury to the head which was inflicted on him in an attempt at robbery. After retirement he devoted himself to every good work open to him.

Progress of Medical Science.

Boston Medical and Surgical Journal.

June 30, 1912.

1. The Annual Discourse: The Burden of Feeble-Mindedness. W. E. Fernald.
2. Efficiency Tests of Out-Patient Work. Michael M. Davis, Jr.
3. Is the Early Diagnosis of Pulmonary Tuberculosis Being Carried Too Far? J. B. Hawes, 2d.
4. A "Library-Museum" in Medicine. T. Ordway.
5. Dickens' Doctors. R. M. Green.
6. Two New Instruments for Nose and Throat. L. M. Freedman.
7. A Report of Two Cases Reinfected with Syphilis Following Treatment by Salvarsan. J. H. Cunningham, Jr.

1. **The Burden of Feeblemindedness.**—W. E. Fernald states that compulsory surgical sterilization of all defectives is proposed as a radical method for preventing the hereditary transmission of feeblemindedness. At least six States have passed laws authorizing or requiring this operation. In no State, however, has this remedy been applied on a large scale. There are many objections to this plan. The friends of the patients are not willing to have the operation performed. The normal "carriers" of defect would not be affected. The presence of these sterile people in the community, with unimpaired sexual desire and capacity, would be a direct encouragement of vice and a prolific source of venereal disease. Sterlization would not be a safe and effective substitute for permanent segregation and control. It is probable that education in the broadest sense will be the most effective method in a rational movement for the diminution of feeblemindedness. The public generally should be intelligently informed as to its extent, causation, and significance by means of suitable literature, popular lectures, and other means. There is now a great demand for such information from women's clubs, church societies, charitable organizations, etc. General knowledge of this subject in a community will insure the rational protection and control of the feebleminded persons in that community.

2. **Efficiency Tests of Out-Patient Work.**—W. E. Fernald states that the work of out-patient departments is of great public importance, but despite the large sums devoted to it annually, no systematic tests of its efficiency have been devised. The ordinary method of judging out-patient and similar medical work is by the "method of adventitious memory," *e.g.* telling about cases the results of which happen to be known. The proper method of applying an efficiency test is the statistical method, by which a number of cases selected at random are studied as a whole in order to ascertain the different results achieved and the relative proportion of each type. Out-patient departments must determine, first, the results attained with relation to disease, and second, those secured in improving the human beings who come for care. An efficiency test based on these principles leads to the study of a group of patients selected at random, conducted partly by persons trained in social investigation and partly by examination of the medical data secured during visits to the clinic. A study of this type conducted at the Boston Dispensary, upon a group of 116 patients, reveals the social and economic classes to which they belong, their previous medical resources, their present medical and social problems and the medical results achieved. The discussion of so-called dispensary "abuse" has suffered because of lack of social facts secured in this way; and because of consequent absence of recognized standards. In determining the eligibility of patients for treatment, the character of the disease from which the patient is suffering and the provision of medical service in the community for that particular disorder must be considered as well as financial condition. The study of the 116 patients of the Boston Dispensary indicates that in one-third of the cases no result was reached because of the failure of the patients to return for the treatment which the first visit had shown to be required. This is a minimum figure for the medical waste in this group. An increase of efficiency (including the reduction of the percentage of medical waste) depends on various factors, particularly on clinical organization and on an organized follow-up system. Follow-up work, to be most efficient and economical, must be based upon social diagnosis and classification of the patients, and this must be done chiefly by specially trained social workers assigned to service in the clinics under the direction of the physicians. Only by systematic efficiency tests, based on medical and social studies of groups of patients selected at random, is it possible for an out-patient department to organize its work on a basis of maximum efficiency and economy.

3. **Early Diagnosis of Pulmonary Tuberculosis.**—J. B. Hawes, 2d, finds that the evidence from the best sources available is strongly against any proposition that the early diagnosis of tuberculosis is being carried too far. Very few non-tuberculous patients are admitted to sanatoria; there is no evidence that any harm is done, or anything but good accomplished by admitting such patients; the "stigma of tuberculosis" is more a fiction than a fact; homes are not wrecked by sending away the breadwinner who has suspicious symptoms, but, on the other hand, tragedies of the most pathetic nature are daily being enacted on account of hyperconservatism and unwillingness on the part of the physician to make a definite diagnosis and to institute efficient treatment. Finally, while the diagnosis of "tuberculosis suspected" is a perfectly proper and right one to make in many instances, it should be regarded as only a temporary or provisional one, and the patient should be followed up until the diagnosis of his condition can be made definite one way or the other, while in the meantime he is given proper treatment and has the exact situation clearly explained to him.

New York Medical Journal.

June 22, 1912.

1. Indications for Arthrodesis and Arthrolysis. A Lorenz.
2. Comments on Sex Issues from the Freudian Standpoint. J. J. Putnam.
3. The Causes and Results of Constipation in Relation to Pelvic Disorders of Women. G. G. Ward, Jr.
4. Dementia Paralytica. W. W. Richardson.
5. The Dietetic Treatment of Cardiovascular Disease. E. E. Cornwall.
6. Pneumonia as a Complication. M. Girsdansky.
7. The Rapidly Fatal Institutional Form of Acute Poliomyelitis. J. Van V. Manning.
8. Some Facts Suggested by the Examination of the Children of Tuberculous Patients. C. Blum.

1. **Arthrodesis and Arthrolysis.**—A. Lorenz concludes that if it be admitted that a healthy and painless, though paralytic joint, outvalues a stiff joint (especially in patients condemned to a sitting life), then arthrodesis is justified only at the paralytic shoulder and eventually at the contracted paralytic wrist; the static joints had better be left to mechanical fixation. If an ankylosed joint in favorable position is preferable to a mobile but sensitive and even painful joint without sufficient stability, then it must be admitted that for the moment being, arthrolysis is justified only in the elbow joint and in the jaw. In

judging these difficult questions, one must always be aware that in orthopedic surgery one has no vital indications. One should have faith in his asepsis in operations of vital indications, but should not boast of its infallibility to justify an unnecessary operation.

2. **Sex Issues from the Freudian Standpoint.**—By J. J. Putnam. (See MEDICAL RECORD, May 11, 1912, page 918.)

5. **Dietetic Treatment of Cardiovascular Disease.**—E. E. Cornwall concludes that the most important thing in the treatment of cardiovascular disease is the regulation of the diet. The diet should be regulated so as to supply the maximum of nutrition with the minimum of work for the crippled cardiovascular system. Such regulation means the restriction of the quantity of food to the minimum health ration or less, and the selection of articles which meet the indications presented by the kidneys, the liver, the heart, the gastrointestinal tract, and the general condition and habits of the patient. The diet in cardiovascular disease should be antiputrefactive, it should be to a large extent purin free, from it should be excluded the more fermentable carbohydrates, particularly cane sugar, it should be easily digestible, and it should be sufficiently laxative. The evening meal should always be a light one, and no food or drink should be taken near the time of sleeping. A prophylactic treatment of cardiovascular disease is possible, and consists largely in the regulation, according to the principles above laid down, of the diet of those whose family history or ways of life point to premature cardiovascular degeneration.

6. **Pneumonia as a Complication.**—M. Girsdansky states that it is held by many authorities that primary uncomplicated pneumonia is a self-limited disease, tending to end in recovery; others have stated that in such cases the mortality should be nil. But for pneumonia complicating other pre-existing diseases, no such prognosis is given. The author believes that even in the latter cases when fatalities result, these are due not to the pneumonia, which, when properly treated should always end in recovery, but solely to the underlying conditions. For example, in cases treated for pneumonia complicating cirrhosis of the liver or kidney, Hodgkin's disease, hemiplegia, grave myocarditis, diabetes, carcinoma, advanced senile arteriosclerosis, or extensive pulmonary tuberculosis when resulting in death, the fatal issue, it seems, is always due, not to the pneumonia, but to the pre-existing conditions. But when pneumonia occurs in the course of an otherwise nonfatal, acute, or chronic malady, the pneumonia in itself does not render the prognosis unfavorable and such cases always terminate in recovery.

7. **Rapidly Fatal Institutional Form of Poliomyelitis.**—J. Van V. Manning states that it was in England that there was first recognized the rapidly fatal institutional type, in which poliomyelitis appears in the form of sudden and deadly asphyxia. Hospitals and institutions were affected seriously with epidemics of this disorder, and an official blue book on the subject was published. The cases tended to occur in small epidemics, in which, after a few hours' illness, death occurred suddenly with the signs of acute asphyxia. The cases were supposed to be occasioned by an inflammation of the cord and brain, as the result of which the vital centers were first attacked. As this form of the disease has not yet been confirmed or negatived by autopsy and pathological examination, it must be considered hypothetical. This should not interfere with prophylaxis of these outbreaks, and the same methods should be advocated and made use of that would be used were the pathological relations established. Obscure knowledge concerning these outbreaks has led to guesswork that would tend to nullify any reasonable method of checking the spread of the disease.

Journal of the American Medical Association.

June 22, 1912.

1. The Shortcomings of Dermatology. C. J. White.
2. The Treatment of Syphilitic Diseases of the Nervous System by Salvarsan. J. Collins and R. G. Armour.
3. Simple Methods of Infant-Feeding. D. J. Levy.
4. Adhesions of the Colon. M. L. Harris.
5. Uterovaginal Prolapse in Elderly Women. Technique of Operation. G. B. Somers.
6. Incomplete Abdominal Surgery. H. G. Wetherill.
7. The Nature of the Filterable Agent Causing a Sarcoma of the Fowl. P. Rous and J. B. Murphy.
8. A Method of Continuous Sterilization of Instruments, Together with Aseptic Hypodermic Medication. W. J. Manning.
9. A Cheap and Portable Apparatus for Forming Carbon Dioxide Pencils. G. H. Boyer.
10. A Catheter Knotted in the Bladder. W. J. Anderson.
11. Ten Pellagrins in One Family. J. E. Knight.
12. A Simple and Precise Method of Differential Leucocyte Counting Where the White Cells Are Greatly Increased. P. Atlee Sheaff.

2. **Salvarsan in Syphilis of the Nervous System.**—J. Collins and R. G. Armour present the results of their investigations on this subject. The diseases studied were tabes, paresis, certain forms of myelitis, myelomalacia, encephalomalacia, meningitis, endarteritis, and gummatous formation. Assuming that salvarsan destroys the spirochete when brought in contact with it, the authors state that what they have already learned is that one dose rarely cures the disease, that the intravenous method is preferable for certain reasons, but not so potent as the intramuscular, and that in cases of long-standing syphilis salvarsan must be given repeatedly in many instances in full doses, and sometimes other agencies, such as mercury, must be invoked. The average dose of salvarsan in nervous syphilis, when vitality is not greatly impaired and the blood-pressure is not high, is 0.6 gram. Not more than half of this dose should be given, however, in cases with cardiovascular degeneration and high blood-pressure. It is not the author's experience that organic nervous diseases are best treated by repeated small doses, but that full doses are better with patients that have a fair amount of vitality. Nine cases of paresis were systematically treated with salvarsan and in three great improvement took place though one of these patients died later in convulsions occurring while the patient was apparently in perfect health. While mercury has been for a long time a trusted weapon and practically the only one, salvarsan is far more satisfactory in the treatment of syphilis, though it has not replaced mercury altogether.

4. **Adhesions of the Colon.**—By M. L. Harris. (See MEDICAL RECORD, June 29, 1912, page 1248.)

5. **Uterovaginal Prolapse in Elderly Women.**—G. B. Somers believes that a careful consideration of the conditions involved in the operation for prolapse of the uterus will lead to an acceptance of the following propositions: It is better to preserve the uterus than to remove it. The cystocele complicating prolapse of the uterus is most effectively treated by re-inforcing the anterior vaginal wall. Interposition or vaginofixation best answers the requirements of the operation. In regard to the technique of interposition the author believes that where the operation is applied to severe cases of prolapse, success depends largely on the following points: Amputation of the portio vaginalis, transposition of the cervical stump high in the vault, support of the stump by shortened sacrouterine ligaments, and functional restoration of the perineum.

6. **Incomplete Abdominal Surgery.**—H. G. Wetherill makes a plea for larger incisions and more thorough examinations in abdominal surgery. In operations for appendicitis through a small "gridiron" incision, serious pelvic lesions, gallstones, gastric and intestinal lesions, etc., have been often overlooked and the patient is hardly better after the operation although the diagnosed lesion has been removed. Every one who proposes to undertake abdominal operations of any kind should feel it his duty to be prepared to meet any conditions which may

be found in the abdomen and should not close it up, except in an emergency, until he has ruled out any possible coincident or corresponding pathological condition. Certain noted exceptions to this rule may be admitted, as in operations for intestinal perforation, appendicitis or salpingitis, in which infection would be diffused, or in ectopic pregnancy with rupture, or cesarean section. In such cases a definite diagnosis is usually possible and the emergency is such that the particular trouble diagnosed is alone to be considered. One should remember the frequency of gallbladder disease in women when performing gynecological operations, and that certain pelvic conditions may give rise to profound stomach disorders. Tuberculosis, cancer, enteroptoses, stomach or intesinal perforations, intestinal obstruction, rupture of the uterus, diverticula, gallstones, pancreatitis, etc., may accompany any other condition and complicate any abdominal operation one undertakes. Exact and complete preoperative diagnosis in certain areas of the abdominal cavity can never be made with exactness and this is particularly so in the upper right quadrant of the abdomen.

The Lancet.

June 15, 1912.

1. Some Moot Points in the Pathology and Clinical History of Pneumonia. P. Kidd.
2. The Pathology of Immunity, as Illustrated by the Behavior of Fluid Exudates from the Tissues and Various Body Cavities, in Acute and Chronic Bacterial Infections, more Especially with Regard to the Problem of Aggressins. L. S. Dungeon.
3. The Presence and Intensity of Syphilis in the Past and at the Present Day. N. Moore.
4. Abdominal Drainage in the Treatment of Peritonitis. C. Wallace.
5. Syphilis d'Emblée. J. E. Lane.
6. Relief following Bilateral Nephrotomy and Drainage for Acute Nephritis Attended by Suppression of Urine and Uremic Convulsions. W. G. Spencer.
7. Tetanic Spasms Occurring in a Case of Chronic Ulceration of the Leg. M. Dew Roberts.
8. An Accessory Uterus Distended with Menstrual Fluid Enucleated from the Substance of the Right Broad Ligament. J. Oliver.

1. **Moot Points in the Pathology and Clinical History of Pneumonia.**—P. Kidd states that whether pneumonia is excited by the entrance into the body of dried sputum containing diplococci from without, or whether it is to be attributed to autoinfection with germs constantly present in the throat, is still uncertain. It seems somewhat difficult to believe that the continued presence of diplococci in the throat would not lead to the establishment of a certain degree of immunity against infection with the particular strain, whereas the entrance of a different and perhaps more virulent strain of pneumococcus from external sources might, under certain conditions, be able to cause infection. It seems from the early date at which diplococci may be found in the blood and from the clinical evidence that pneumonia so often appears for some days under the guise of a general infection without local manifestations that a septicemic origin supplies the best explanation. But the exact route by which infection of the blood takes place has yet to be demonstrated. Neufeld and Haendel have published the results of their investigations on the origin of the crisis in pneumonia and on the immunizing action of pneumococcal serum. In opposition to Seligmann and Klopstock, they believe that the crisis not only depends on the formation of antibodies, but that these antibodies can be recognized experimentally with certainty, and may even be estimated quantitatively. The antibodies found in the blood of convalescents from pneumonia behave in exactly the same way as those artificially produced in animals. The practical application of pneumococcal serum for therapeutic purposes depends on the preparation of a sufficiently powerful serum and on the rapid introduction of the same into the body in sufficient quantities. For this purpose they recommend as indispensable the intravenous injection of large quantities of serum, which, according to recent experience, is free from danger.

2. **Fluid Exudates and Immunity.**—L. S. Dudgeon presents the results of his investigation of the blood and body fluids in 150 cases of acute and chronic infective diseases occurring in the human subject. It was thought necessary to ascertain the comparative value of the exudates formed during the course of bacterial infections in man, and whether these exudates contained active substances similar to those found in blood serum and possessing the same degree of activity. On the other hand are substances of an inhibitory nature present in these exudates and in blood serum, and, if so, is the action specific or otherwise? If an inhibitory action occurs, is it directly on the leucocytes or on the serum or both? It was also considered necessary to ascertain, as far as possible, the reaction of the exudates, and whether the reaction was directly related to the phagocytic activity of the fluids. In the majority of instances the author found that the body fluids obtained from the infective focus are devoid of opsonin and complement. In one instance there was abundance of opsonin and complement, but the activity of the exudate was much less than that of the autogenous blood serum. The loss of opsonin appears to be complete and cannot in any way be regarded as a specific defect, as in these experiments and in the vast majority which have been made the body fluids were tested with the organism giving rise to the infection from which the patient was suffering, and another organism in no way related to the disease. In some acute infections of very short duration and in certain bacterial conditions affecting the serous cavities the body fluids are found to be as potent as blood serum. The author's experiments clearly demonstrate the activity of the body fluids in many acute infective processes. In three cases of acute arthritis it was found that the serum from the joint cavity in each case contained a large amount of opsonin and complement. The experiments are sufficient to show that the body fluids which contain complement also contain opsonin, and the opsonin is present for bacteria other than those which give rise to the disease from which the patient is known to be suffering.

3. **The Presence and Intensity of Syphilis in the Past.**—N. Moore states that the poem of Hieronymus Fracastorius which was published at Verona in 1530, furnishes evidence that at the time the poem was written there was prevalent an hypothesis that syphilis was then of recent origin. There is no evidence that syphilis was imported from America following the discovery by Columbus. No certain references to syphilis are to be found in the general Greek or Latin literature. No undoubted syphilitic lesions have been discovered in the vast collection of human remains belonging to several thousand years of Egyptian history. In the numerous writings of Galen there is no reference to any of the nervous diseases that are caused by syphilis. There is reason to believe that syphilis first made its appearance in Europe at the end of the fifteenth century.

5. **Syphilis d'Emblée.**—J. E. Lane states that this term connotes an infection that may occur directly into the blood stream without the formation of a chancre. A far better term is cryptogenic syphilis, signifying syphilis of hidden origin. This form of the disease is found especially in members of the medical profession. In two cases reported by Jullien of Paris, this observer calls attention to the early date at which the blood of syphilitic subjects becomes infectious, before the appearance of any secondary eruption, and even before that of the initial lesion. More than two years ago Waelsch made a communication on this subject in the *Münchener medizinische Wochenschrift*, and related several cases in which medical men had contracted the disease in this manner. Strictly speaking, the term cryptogenic syphilis can hardly be applied either to Jullien's or to all of Waelsch's cases,

for the point of entrance of the poison into the system was known in the majority of instances, though the initial lesion did not manifest itself at the seat of inoculation; these are rather cases of syphilis without chancre than of cryptogenic syphilis. But there is another class of case in which the victim of the disease is unaware of the occurrence of any breach of surface on the skin, or even of contact with anyone suffering from syphilis, and in which the method of entrance of the poison remains a mystery; to such cases the term cryptogenic syphilis may justly be applied. The author notes that the cases of cryptogenic syphilis, which came under his observation, were characterized by unusually severe sequelæ, and were usually unamenable to the ordinary methods of treatment. It is an axiom that the earlier the treatment of syphilis is commenced the better is the prognosis of the case, if efficiently and sufficiently treated; if the sore is capable of early detection and diagnosis, and especially if it admits of excision, the subsequent evolution of the disease is considerably modified. But in the class of case now under consideration the patients suffer from the disadvantage that an early diagnosis is impossible, and the treatment cannot be commenced until the symptoms are obvious, until the system is thoroughly impregnated with the poison. Induration of the dorsal lympathic of the penis and of the inguinal group of lymphatic glands is an indication that the poison has been introduced by means of sexual intercourse. In urethral chancre a urethral discharge may lead to the diagnosis of gonorrhea, and may be treated as such by injections and balsamic remedies, and the author encountered several such cases in which an obvious secondary sphilide had been attributed to the use of antigonorrheal remedies such as copaiba and cubebs.

British Medical Journal.

June 15, 1912.

1. The Evolution of Obstetric Medicine; with Illustrations from Some Old Midwifery Books. Sir John Byers.
2. Wertheim's Operation for Cancer of the Cervix Uteri. J. D. Malcolm.
3. Fracture of the Lower End of the Humerus in a Child Treated by Immediate Wiring. L. A. Parry.
4. Endothelioma of the Pituitary Gland with Infantilism. G. E. Rennie.
5. The Appendicitis Dilemma, and the Preoperative Diagnosis. W. Ewart.
6. New Methods for the Culture of Bacteria. G. Mann.
7. The Bactericidal Action of the Cresols and Allied Bodies and the Best Means of Employing Them. E. A. Cooper.

1. Wertheim's Operation for Cancer of the Cervix Uteri.—J. D. Malcolm states that the most efficient factors favoring good results, immediate and remote, in cancer of the uterine cervix are an early diagnosis and a prompt operation. The tendency to irregular hemorrhages accompanying the disease favors an early diagnosis, and it is of the utmost urgency that the possible significance of irregular hemorrhages and the need for investigating their causes should be known as widely as possible among women. The results of early operations are very good, both as regards recovery from the operation and a permanent relief. In the later stages of the disease the immediate and the remote results are very bad, and the operation should not be recommended unless the death-rate can be kept at least moderately low. Wertheim's method of operating is a very great advance on any other.

5. The Appendicitis Dilemma and the Preoperative Diagnosis.—W. Ewart contrasts the situations presenting themselves with reference to appendicitis "of physical signs" and appendicitis "of symptoms." Physical signs are at a discount with the surgeon. Present when they are "superfluous" for his decision, they are generally "absent" in a majority of his cases where he would be the first to welcome them. That is the chief gravamen from the side of the patients; they might fairly object if they knew that their operation was being undertaken without any objective evidence. In the second and larger group we have no physical signs so far; the symptoms or our dread of them decide the operation. The weakness of this broad classification, convenient so far as it goes for the present discussion, is that it contains no reference to the gravity of the case. The most awkward of our facts is that some of the worst lesions must inevitably remain truly latent by reason of the occasional slightness of any inflammatory reaction. But, with that exception, taking the bulk of cases, the only "absolute latency" has been in reality that of any adequately efficient method of diagnosis. The author believes that it would be desirable to reduce Group 2, now almost all-absorbing, to its legitimate limits, which are much narrower than is generally suspected; and to assign to Group 1 its due proportion, which will probably be found to be increasingly considerable.

7. The Cresols and Allied Bodies.—E. A. Cooper recommends for disinfection of hands, instruments, pus, etc., the following preparations: Crude carbolic acid (cresols) emulsified with soft soap, and a crude mixture of tar acids from creosote oil, emulsified with castor-oil soap. The directions for preparing the former are as follows: Take equal weights of crude carbolic acid and soft soap; heat them together at 80° C. until all the soap is dissolved and filter the product. The preparation is a dark colored homogeneous fluid readily miscible with tap water, forming a slightly turbid liquid. The dilution recommended for hands and instruments is 2 per cent. The dilution recommended for disinfection of stools, pus, and other particulate organic matter, on the assumption that for one volume of stools, etc., at least two volumes of the diluted disinfectant be added is 3 per cent. This preparation is identical with the liquor creosoli saponatus, official in the German, Japanese, and Swedish Pharmacopœias, and with the Cresolum saponatum of the Belgic and Swiss Pharmacopœias. The "crude mixture of tar acids" contains cresols and their higher homologues, together with some carbolic acid, and is obtained by the extraction of cresote oil with soda and acidification of the extract. Take 50 parts by weight of this mixture of tar acids and 20 parts of castor oil (bleached and filtered oil of commerce), mix well and heat to 90° C., add a solution of 5 parts of potash in 5 parts of water, and heat and stir until a drop of the mixture gives a pink emulsion with tap water with no fatty scum. The product is a dark-colored fluid, miscible with water, giving a stable pink emulsion. The dilution recommended for hands and instruments is 1 per cent. The dilution recommended for disinfection of stools, pus, and other particulate organic matter, on the assumption that for one volume of stools, etc., at least two volumes of the diluted disinfectant be added is 1.5 per cent.

Berliner klinische Wochenschrift

June 10, 1912.

The Supposed Specific Biological Effects of Mineral Salts.—Schloss refers to the demonstrated facts of the necessity of mineral salts for the integrity of tissues and performance of functions. To show the rationale of their action is naturally a very difficult proposition, which can only be solved piecemeal if at all. Thus one may investigate the possible rôle of salts in water metabolism, on fluctuations in weight, on thermogenesis, etc., etc. These lines of research have been cultivated for some years past and many peculiar data have been obtained. If for example animals receive equimolecular amounts of calcium lactate, acetate and chloride respectively, the first is followed by gain in weight, the third by loss in weight, while in the second results are negative. Since the ration is the same for each salt, the inference is that the differences in result are due to the anions, which appear able to affect specifically the water metabolism. A study

of this subject at the bedside, however, tends to upset the ionic theory, for it shows that calcium chloride increases the water excretion of both skin and kidneys, while calcium lactate diminishes both, and calcium acetate diminishes the urine but increases the perspiration. Gain in weight as a result of ingesting a particular salt comes about through the fact that less urine is passed while there is no compensatory activity of the skin. There is thus retention of the salt with water retention and weight gain. The halogen sodium compounds all cause this water retention, as does also calcium lactate. The phenomena of salt fever and dropsical edema are likewise dependent on the same kind of retention.

The Tissue Sites of Reduction and Oxidation.—Golodetz and Unna, junior, refer to the recent demonstration by P. G. Unna that cell nuclei are pre-eminently oxidative. This was effected by color reactions supposed to be caused by the presence of an oxidase in the nuclear and absent in the cell protoplasm. The latter is believed to contain a reducing enzyme. In order to demonstrate the truth or error of these assumptions, the authors chose fowls' blood as best adapted for isolation of cell nuclei. Various means were used to free the nuclei from the cell protoplasm, including digestive fluids. The nuclei were then tested for the presence of both catalase and peroxidase. Numerous other cells were similarly investigated, and it was found that aside from nuclei in general, certain tissues, as cartilage, were also free from catalase, and that wherever one of these enzymes was found, the other was practically absent.

Aschoff's Doctrine of Cholelithiasis.—Hans Kehr discusses the effect of Aschoff's doctrine on the therapeutic indications in this affection. The pathologist in question asserts that gallstones have two quite different modes of origin, to wit, stagnation and infection, in the former case the stones being sterile, and formed by precipitation of cholesterin from the bile. Hence we have a very plain indication to prevent this stagnation by drainage or extirpation. The author has now performed nearly 1900 laparotomies for gallstones, during a period of 22 years. For the first decennium he was indebted to the studies of Courvoisier, Riedel and Naunyn for placing his indications. Since that time he has been similarly influenced by the pathologist Aschoff and the surgeons von Bergmann and Langenbach. He pays a warm tribute to the supreme and final authority of the pathologist above either the physician or the surgeon. While the two eminent surgeons mentioned with Aschoff fixed the operative indications in accordance with the latter's views, this was done on empirical grounds only. Thirty years elapsed before Aschoff gave the true rationale for the complete extirpation of the diseased bladder, which if allowed to remain would still be exposed to the dangers of stagnation.

Münchener medizinische Wochenschrift.

June 13, 1912.

Diagnosis of Pregnancy by the Optical Method and Dialysis Procedure.—Abderhalden announces that pregnancy has been diagnosticated by these tests, and the rationale underlying the operation of the latter should be of the greatest significance for other subjects, notably the nature of the gestation toxicoses. The blood changes which make the diagnosis possible are due to the entrance into the maternal circulation of chorionic cells. The blood of the mother reacts to the heterologous albumin by producing enzymes which tend to homologize the latter. The optical method was developed as follows: Blood plasma was mixed with a solution of cane sugar and placed in a polarizing apparatus, which is left in an incubator at 37° C. and readings taken from time to time. If the animal has previously been immunized to cane sugar the original dextrorotatory action becomes levorotatory from clearage of the cane sugar. The blood has formed a sugar splitting enzyme, and it is able to produce enzymes in the same manner when peptones, fats, etc., are substituted for sugar. By immunizing with placenta peptone, a similar clearage reaction is present in a pregnant woman. The dialysis test consists in dialyzing the blood against distilled water. If the animal was pregnant the dialysate gave the biuret reaction, otherwise not. The exact technique is not published in full and doubtless will not be submitted until the method has been more fully elaborated. The first practical application will be in the abattoirs, as despite precautions pregnant animals are often slaughtered.

Treatment of Sexual Impotence.—According to Lissmann progress in clinical medicine tends to cloud and complicate this subject. The urologist and neurologist each claim the latter as their own, so that it has become a borderline study, developing in two opposite directions to its own detriment. The author is a neurologist, but is favorably impressed with Cathelin's epidural injection treatment in which the erection and ejaculation centers in the cord are directly stimulated or irrigated. Cathelin, who used only indifferent fluids, ascribed the favorable result to a vertebral trauma. The author added yohimbin to the ordinary saline fluid injected and has used the method with marked success in a number of cases of prolonged impotence in otherwise healthy men, after having first satisfied himself that there was actual exhaustion of the erection center. Ordinarily psychic impotence could readily be excluded by the total absence of morning erections. The benefit derived persists for some weeks. The treatment seems to be contraindicated in precocious ejaculation cases. If a middle-aged man is able to copulate successfully once or twice a week, he should be satisfied, as no treatment can be expected to give the potency of youth. Yohimbin has proved to be of great value to the breeder and veterinarian, but its action in man when given by the mouth or even subcutaneously is likely to disappoint. Naturally in the author's method we cannot decide as to how much of the benefit is due to yohimbin, for the Cathelin injection alone has given good results, although inconstant. With the combination the author has thus far had but one actual failure.

Diabetes After Whooping Cough.—Von Starck writes a very brief monographic article on this subject. Diabetes in the child is essentially a more puzzling condition than in the adult, for few causal moments under our old notions of diabetes are then apparent. The more modern view would accuse a pancreatic lesion, and perhaps that only. Such lesion might result exceptionally after the acute infectious diseases and such sequences are reported now and then. For example, parotitis is known to inculpate the pancreas. In a number of cases on record the pertussis followed by diabetes the reporters have not been slow in accusing a pancreatic complication, but there appears to have been none in which a complete autopsy was made. The author's patient has been improving under treatment and the disease is arrested at least. If a pancreatitis is present the patient can hardly be pronounced cured.

Deutsche medizinische Wochenschrift.

June 6 and 13, 1912.

Treatment of Chronic Nephritis.—Von Romberg calls attention to the two trains of symptoms which characterize this affection. One consists of alterations in the urinary functions and the other of the systemic reactions to the renal lesion. The appearance in the urine of albumin, blood, cylinders and renal epithelia, however important it may be, does not furnish us with therapeutic indications nor does it enable us to measure the severity of the affection. Of more significance from this viewpoint is the total amount of water and sodium chloride eliminated. Oliguria implies that the renal blood vessels and especially

the glomeruli are seriously compromised. Polyuria signifies the converse and that the vessels are oversensitive to diuretic stimuli. The excertion of sodium chloride furnishes a measure of the integrity of the canaliculi. The phenomenon of uremia is now known to occur in kidneys which are able to excrete normally the water and chlorides, and the same is true in a less degree of the phenomenon of edema. Increase of blood pressure is not a phenomenon which furnishes therapeutic indications, but if cardiac weakness develops the reverse obtains. In renal insufficiency we should limit the ingesta, notably the fluids, nitrogen, and all condiments and drugs which may directly irritate the kidney. The salt must also be cut down as much as the patient can well tolerate. The patient, if he has been very active, must cut down his daily output of energy and give himself special rest periods. The day of the eliminative treatment appears to have passed in simple renal insufficiency. This applies to Turkish baths and mineral water cures, both of which are now regarded as urgently contraindicated. The same proscription even applies to the customary sojourn in warm climates. Whether in renal insufficiency the organs may be roused to greater activity without prejudice is a disputed question. This would be effected by drugs which dilate the renal arterioles, such as the xanthin synthetics. Digitalis is naturally confined to cases in which weak heart is a complication. Calomel is no longer used because of the possibility of setting up mercurial nephritis. Uremia is an affection to be treated directly of itself as a toxemia, not indirectly by influencing the renal function. For convulsions the patient should be bled freely and the future may accept lumbar puncture as a remedy. Sweats and purgation, the author has abandoned. The individual manifestations of uremia may be met symptomatically—dionin and codein for the asthma, laudanum for the nausea and vomiting, and bromides and veronal for the nervous excitation. Naturally the treatment of the renal insufficiency is maintained in the presence of uremia, just as in its absence.

Prophylaxis of Scarlet Fever.—Von Drigalski has devoted himself at Halle for nearly five years past to this line of effort and no report has as yet been published. Of the first rank of importance here is naturally the question of the relationship of desquamation to contagiousness. Over 1,100 school children have been followed up to determine this relationship, and in not a single case was there evidence of contagion after the return to school of the patients. When in mild cases the latter are free from scales by the twelfth or fourteenth day it is manifestly a hardship to isolate them for the full six weeks. Cases too mild for treatment have sometimes returned to school while desquamating, but no contagion appears to have resulted. Naturally they were sent home as soon as the peeling was observed. In the author's opinion no good can come from taking a greater degree of pains. Naturally, in home life the danger from exposure is much greater. The school physician should assume some responsibility in connection with late nephritis following scarlet fever.

Improvement in Bier's Technique for the Stagnation Treatment of Surgical Tuberculosis.—Bier has now added to his mechanical plan of treatment the internal administration of iodides in doses of about three grams daily, children in proportion. The great diffusibility of this salt must always be borne in mind in connection with its therapeutic efficacy. There can be no doubt that iodine has a specific action against tuberculosis, but this cannot always be made manifest, for example, whenever it is possible for the drug to leave the blood rapidly in the urine. When the drug is given to patients with crippled kidneys, a severe idiosyncrasy so called may develop. When artificial stagnation has been produced mechanically the focus of tuberculosis may be suddenly saturated with the iodides given internally or as the author states with iodized blood. The author reports three cases. He admits that the stagnation treatment alone might be responsible for setting up three distinct complications, to wit, pain and swelling with tendency to formation of cold abscesses, overgrowth of granulation tissue, and severe acute infection. The internal administration of iodides, he believes, will antagonize all of these complications. One of his patients was a young woman with tuberculosis of both feet, in one of which a resection was required. The other foot was injected with iodoform glycerin. The lesions, treated with immobilization became much worse. The details of treatment are not given, but the patient was presented at the clinic greatly improved, as were both the other patients.

The Blood State in Graves' Disease.—Lampé announces that in the light of modern research our knowledge of the constant blood finds of this affection is becoming more and more confirmed. The white blood picture shows a constant lymphocytosis. Other phenomena sometimes alleged, as leucopenia, eosinophilia, and mononucleosis are not characteristic. The lymphocytosis of Graves' disease is not dependent on the thyroid but the thymus. In all well-developed cases the thymus is coinvolved. Graves' disease is a dysthyroidism plus a dysthymism. There is no further characteristic morphological alteration, but there are chemical peculiarities comprising delayed coagulation and a lowering of the freezing point. Adrenalinemia and glycemia are frequently found—the former perhaps constantly.

Cohabitation Cystitis and Pyelitis.—Sippel describes what might be termed a new occupational disease—the ascending cystopyelitis of newly married women. The discovery was made very recently by Wildbolz, who stated that the condition supervenes promptly upon defloration, is always unilateral, and is caused by *Bacillus coli*. He proposed to term the condition defloration pyelitis. Sippel states that the existence of a nongonorrheal cystitis in newly married women has long been known. A coli infection of the female bladder occurs under various conditions. The ascent of the process to the renal pelvis, however, is not commonly seen and forms a characteristic of the alleged new disease. Sippel does not believe it depends in any way on defloration, *i.e.* on hymenal lacerations, but very likely occurs by preference in women with rigid perineum and narrow introitus, in whom the urethral orifice is directly exposed to injury by the penis. Coitus becomes painful and the patients even shrink from the digital exploration. Attempts at coitus doubtless are responsible for the accidental introduction of the bacilli in the urethra. Aside from infection it is very common for newly married women to complain of urinary disorders which are doubtless hastily set down as chiefly reflex in origin. In these cases there is always a suspicion of infection of some sort. In any case in which there is a recent history of dyspareunia there is also a possibility of an infection. The prevention of this affection belongs in the domain of the hygiene of marriage.

Pneumococcus Infections.—V. Hutinel states that pneumonia in the child is far from being a benign affection in all cases, and one should give a reserved prognosis until the child is well on toward recovery, since even after the fever is going down one may have the localization of the pneumococcus in some one or more of the other organs. Some of the serious lesions thus caused are endocarditis, pericarditis, purulent pleurisy, and peritonitis of a very grave and septic form. There may result purulent otitis, causing purulent meningitis or encephalitis. Herpes, purpura, and cutaneous gangrene occur in connection with the skin. Lumbar puncture clears up the diagnosis when the brain is affected.—*Le Bulletin Médical*

Insurance Medicine.

Medical Section of the American Life Convention.—The annual meeting of this society will be held in Chicago on Tuesday, September 3, 1912, under the chairmanship of Dr. Ambrose Talbot of Kansas City, Mo. Papers will be read on "The Wassermann Reaction and Its Value in the Detection of Syphilis," by Dr. Amand Ravold of St. Louis; "The Appendix as an Influencing Factor," by Dr. C. M. Rosser of Dallas, Texas; "The Selecting and Training of the Medical Examiner," by Dr. E. A. Babler of St. Louis; "Methods of Uranalysis Applicable to Insurance Examination," by Dr. S. H. Baxter, Minneapolis; "Prognostic Significance of Albuminuria and Casts," by Dr. C. Naumann McCloud, St. Paul. The secretary of the Section is Dr. F. L. B. Jenney, medical director of the Federal Life, Chicago, Ill.

American Association of Medical Examiners.—At the annual meeting held at Atlantic City on June 3 and 4, 1912, the following officers were elected for the ensuing year: *President*, Dr. Frank W. Foxworthy, Majestic Life Assurance Company, Indianapolis, Ind.; *Vice-Presidents*, Dr. Charles Theodore Cutting, Empire Life Insurance Company, Seattle, Wash.; Dr. Paul Fitzgerald, Prudential Life Insurance Company, Newark, N. J.; Dr. James W. Guest, Commonwealth Life Insurance Company, Louisville, Ky., and Dr. A. T. Gaillard, Traveler's Insurance Company, Philadelphia, Pa.; *Secretary-Treasurer*, Dr. G. Strohbach, Cincinnati, Ohio. The next meeting will be held in Minneapolis in June, 1912, on the two days preceding the meeting of the American Medical Association.

The Relations of State and Private Insurance to Each Other.—Alfred Manes says that the question of limitation of State insurance and of private insurance to their respective fields is being widely discussed. It must be decided in the near future what can be properly expected from these two different forms of insurance, what persons should be considered fit for one form and not for the other, what character of protection should State insurance give, etc., etc. Some nations have already introduced various limitations to State insurance, thus Germany insures officials whose salaries range under 5000 marks. On the other hand, Austria has a pension law which does not consider the amount of salary of officials, all being eligible. The German workingmen's insurance has been gradually extended until it includes many more classes than those contemplated by Bismarck in the original design of State insurance.

The first question to decide is the proper field for State insurance as differentiated from the field of private insurance. It has been fairly well agreed that in three contingencies the State should provide proper protection, namely:

1. During a temporary interference with the working and earning powers of workingmen. Such interference may be due to

(*a*) Disease, provided for by sickness insurance.

(*b*) Accident, provided for by accident insurance.

(*c*) Pregnancy, provided for by motherhood insurance.

(*d*) Lack of work, provided for by insurance against loss of employment.

2. During a constant interference with earning capacity, which may be caused by

(*a*) Consequences of disease, provided for by insurance of invalids.

(*b*) Old age, provided for by old-age insurance.

3. In case of death, which may result in three kinds of claims:

(*a*) Funeral expenses.

(*b*) Support of the widow.

(*c*) Support of the children.

Manes thinks that it is a grave mistake to think that State insurance and private insurance necessarily compete with each other. The opposite is more true, for State insurance simply popularizes all insurance and urges certain classes of the population that enjoy such insurance to seek farther protection by going to the private insurance companies. State insurance can only provide the minimum amount of protection, and experience in Austria and Germany has shown that government officials enjoying such protection are among the most frequent applicants for private life insurance. Moreover, the establishment of State insurance has shown private insurance companies that they, too, may rightly strive for a certain portion of the work delegated to the State: the establishment of conservation departments, of sanatoria for tuberculous policyholders, of preventoria, etc., show how private life insurance interests are beginning to understand the social possibilities of their work.

There is one marked difference between State and private insurance. In the former, the aim is to extend protection to all individuals without caring how good or how bad risks they may be. Private insurance, on the other hand, considers only standard risks, for the most part, rating up any substandard individuals. Standard risks, therefore, get less for their outlay with the State, for they must bear the burden of the substandard death rate. Such risks obtained best returns, on the average, with private insurance interests. State insurance, however, is aimed at prevention of economic dependence and poverty, from whatever cause, and cannot, therefore, exclude any individuals or, indeed, rate any of them higher than others.

Very important questions are presented to lawgivers by the possible effect of State insurance upon employers and employees. It must not be forgotten that too much State interference may cause diminution in the investment of capital in any one country with consequent damage to that country's welfare. On the other hand, the effect of the feeling of security against need and poverty may be very good on a certain portion of the laboring class. It may, however, result in shiftless and unambitious work among a great many individuals who are not driven to do adequate work because of fear of poverty of old age.

There has been a great deal said in Germany about false claims for annuities and indemnities among the laboring classes since the introduction of State insurance, and much that has been said is, indeed, true. It must not be forgotten, however, that such behavior is common to all classes; witness the number of false claims and simulations that annually confront private insurance interests. The fact remains, however, that the insurance of workingmen against accident, has led to increase in the time of convalescence in such common accidents as fractures, for instance. Manes thinks that the present is the best time for careful scientific study of such social phenomena in order that experience may guide any changes or innovations in State or private insurance in the future.—*Zeitschrift für die gesammte Versicherungs-Wissenschaft*, May, 1912.

Book Reviews.

A Text-Book of Practical Gynecology. For Practitioners and Students. By D. Tod Gilliam, M.D., Emeritus Professor of Gynecology, Starling Medical College; Gynecologist to St. Anthony and St. Francis Hospitals; Consulting Gynecologist to Park View Sanitarium, Columbus, Ohio; Fellow of the American Association of Obstetricians and Gynecologists; Member of the American Medical Association, of the Ninth International Medical Congress, etc. Fourth Revised Edition. Illustrated with 352 Engravings, a Colored Frontispiece and 13 Full-Page Half-Tone Plates. Philadelphia: F. A. Davis Company, 1911.

The present edition is an endeavor to bring this well-known book up to date and in doing this a part of its contents has been supplemented by necessary additions, the most notable of which are contained in the chapters on abdominal and pelvic lesions other than gynecological. In this, as in previous editions, it has been the author's policy to present a plain, connected narrative of the subjects under discussion, rather than to follow strictly scientific methods in classification and arrangement. In the new chapter the writer presents a brief account of cesarean section and operations on the stomach, duodenum, liver, gall-bladder, pancreas, and intestines, which is believed to afford a general résumé of these subjects sufficient for the gynecologist. But if, as the author claims, the technique of cesarean section is as nearly allied to the domain of gynecology as to that of obstetrics, it appears illogical to discuss such an important subject in a single page of text. In fact, the very essential operation of vaginal cesarean is described in four and a half lines. The author's name is most closely associated with the ventral suspension operation of the uterus which he has devised and one looks for rather a more complete presentation of the subject than is contained in the chapter allotted to the discussion of the same. The operation has been found to be a very serviceable one in a large class of cases, but the description and particularly the accompanying illustrations, are characterized by a lamentable lack of detail for one who may be led to consult Dr. Gilliam's book on this procedure for information at first hand. It is to be hoped that in future editions of the book the author will present the detailed facts in a more complete form. On the other hand the description of injuries to the pelvic floor and their practical repair is deserving of commendation, as the author calls particular attention to the necessity of recognizing the true causes of the lesions in this region and bases his descriptions of the operative treatment on a thorough and proper knowledge of the same. An up-to-date work which submits technical descriptions of operative procedures should be furnished, moreover, with a more satisfactory set of illustrations than are here presented. Most of them are too small and too intricate to aid the understanding of the descriptive text, as for example, the various steps in the performance of an abdominal hysterectomy, an important operation which could be much more clearly expressed by a series of satisfactory illustrative diagrams than by many pages of descriptive matter. The book, moreover, is written in a style that is frequently characterized by effusions of language that seem somewhat out of place in a text-book intended, as the author states, for students and practitioners, and it is questionable if such a manner of presentation serves the real purpose of a serious work.

Handbuch der Speziellen Chirurgie des Ohres und der oberen Luftwege. Herausgegeben von Dr. L. Katz, Spezialarzt für Ohren, Nasen und Halskrankheiten in Kaiserslautern; Dr. H. Preysing, Prof. der Ohren-, Nasen-, Kehlkopf-Heilkunde, Ord. Mitglied der Akad. für prakt. Medizin zu Cöln a. Rh., und Dr. F. Blumenfeld, Spezialarzt für Nasen-, Hals- und Lungen-Krankheiten in Wiesbaden. 1. Bd., 2. Hälfte, Lief. 2, 3; preis, Mk. 9. 1. Bd., 2. Hälfte, Lief. 4, 5; preis Mk. 8.50. IV. Bd., Lief. 1, 2; preis Mk. 12. Würzburg: Verlag von Curt Kabitzsch, 1911, 1912.

The three parts of this monumental work on the special surgery of the ear and of the upper air passages, which parts have been issued since the last reviews of this work appeared in these columns, maintain the high standard both in the text and in the profusion of illustration which has been set in the former parts. The first of the installments now under review represents one of the most interesting chapers in modern surgery, namely, that of plastic and corrective surgery of the nose and ear, both very important from the cosmetic viewpoint. The subject of nasal and aural prothesis, or that of providing artificial noses and ears, is discussed ably by Professor Port of Heidelberg. The plastic surgery of the nose and ear is treated most comprehensively by Jacques Joseph of Berlin. To note the extent to which this field of surgery has been carried, it suffices only to enumerate the various deformities of the nose that may be corrected, with little or no visible scarring, by the masterly methods perfected in most cases by the author. These deformities are classified as follows. A. Hypertrophy of the nose (rhinomegaly): 1. Hypertrophy of the bony nose, either an abnormally convex profile or an abnormal breadth of the bony portion. 2. Hypertrophy of the cartilaginous nose: a. abnormal arching of the triangular cartilage; b. abnormal length of the nose due either to a hanging septum or to excessive length of the entire nose; c. various deformities of the wings of the nose; d. deformities of the tip of the nose. B. The crooked or oblique nose. C. Nasal defects. The technique of the operative procedures devised for the correction of these deformities is described in detail and with the aid of illustrations showing the condition both before and after operation. These operations are mostly performed by the intranasal route and constitute a veritable wonderland of cosmetic surgery. The surgery of deformities of the ear is similarly described in great detail. Albert E. Stein of Wiesbaden writes on the therapeutic employment of paraffin, and the plastic operations about the face are discussed by Professor Bockenheimer of Berlin. This subject is continued at greater length in the next installment. The various operations for harelip and cleft palate are elaborately detailed. The illustrations in this section are numerous and admirably supplement the text. The same installment contains the beginning of the article on the *x*-ray diagnosis of diseases of the nasal accessory sinuses, the hypophysis, the teeth, and the ears. The first and second parts of the fourth volume contain the following articles: The resection and extirpation of the larynx, pharynx and esophagus, by Professor Gluck and Dr. Soerensen, who also write on the surgery of the mandible and of the tongue, the ligation of the common carotid, and the surgery of the thyroid. In this synoptic review of the contents of the portions of this work just issued it is impossible to convey any adequate idea of the character of the text, and of the artistic illustrations. The book must be seen to be appreciated.

Manual of Operative Surgery. By John Fairbairn Binnie, A.M., C.M. (Aberdeen). Surgeon to the General Hospital, Kansas City, Mo.; Fellow of the American Surgical Association; Membre de la Société Internationale de Chirurgie. Fifth Edition, Revised and Enlarged. With 1365 Illustrations, a Number of Which are Printed in Colors. Price, $7.00. Philadelphia: P. Blakiston's Son & Co., 1911.

The present edition is a more elaborate exposition of the author's popular original work, which has now been incorporated in one volume instead of being issued in two volumes as previously. The book has been brought up to date, and presents the various known and accepted methods for doing all the operations included under general surgery. The book is extensively illstrated by selected pictures from reliable sources. The writer has wisely omitted from his book any consideration of gynecological procedures, for when these are included in general works of this kind the result is usually unsatisfactory.

Immunity, Methods of Diagnosis and Therapy and Their Practical Application. By Dr. Julius Citron, Assistant at the University Clinic of Berlin, II Medical Division. Translated from the German and edited by A. L. Garbat, M.D., Assistant Pathologist German Hospital, New York. Price $3.00 net. Philadelphia: P. Blakiston's Son & Co., 1912.

While it is probably true that the traditional "busy practitioner" will come in the future to rely more and more upon the laboratory worker for the technical part of immunity reactions, nevertheless the application of results both for diagnosis and treatment must always remain in the hands of the clinician. To make the best use of the information furnished by the immunologist the practitioner must keep himself informed of the progress made in that branch of science, and for that purpose this book is designed. The details of the various reactions used in the clinic for diagnostic, therapeutic or prophylactic purposes are taken up and in addition are included certain fundamental considerations of questions which still are largely theoretical but which at any moment may attain practical importance. The various methods are critically reviewed and the technical details are carefully described. While because of its brevity the volume will not be in demand by the immunologist, because of this very characteristic it is especially adapted for the use of the physician and the student. It should be highly recommended.

Society Reports.

ASSOCIATION OF AMERICAN PHYSICIANS.

Twenty-seventh Annual Meeting, Held in Atlantic City, May 14 and 15, 1912.

(Special report to the MEDICAL RECORD.)

(Concluded from Vol. 81, No. 24, p. 1107.)

Wednesday, May 15—Second Day.

A Contribution to the Symptomatology and Early Diagnosis of Thrombophlebitis.—Dr. LEWIS A. CONNER of New York read this paper. He said that evidence had been presented to show that thrombophlebitis played a much more important part in the symptomatology of the latter weeks of typhoid fever than was commonly supposed. Phlebitis might, and usually did, exist in the small veins of the legs and feet long before the usual symptoms of phlebitis of the large veins appeared. Many of the cases of pleurisy and pneumonia occurring in the course of typhoid were embolic in origin, and these emboli were especially apt to be produced at the beginning of such a phlebitis, often many days before frank signs of the trouble were noticed. Evidence was presented to indicate further that the obscure "posttyphoid septic chills" and most of the irregular febrile movements of the later weeks of typhoid fever were manifestations of a latent phlebitis. The relation of the "tender toes" of typhoid to phlebitis was discussed and an explanation of that condition offered. Thrombophlebitis was a condition that was more common in cases of typhoid fever than was supposed, and it began earlier, usually on the tenth or the fifteenth day. The disease tended to run a latent course before the larger veins were involved. At the New York Hospital, between the years of 1898 and 1912 there were 1,540 cases. Among these there were 78 (5 plus per cent.) of frank thrombophlebitis; probable embolism without signs of thrombophlebitis, 26; and "tender toes" without signs of thrombophlebitis, 10. Among the cases reported, multiple chills occurred in 22 cases; occurring in those patients with evident phlebitis, 17 cases; chills occurring before any signs of phlebitis, 6 cases; chills occurring before and during phlebitis, 7 cases; cases without any signs of phlebitis, 5 cases; "tender toes," 22 cases; occurring in patients with evident phlebitis, 12 cases; "tender toes" before any evident phlebitis, 7 cases; "tender toes" after signs of phlebitis, 5 cases; "tender toes" without any signs of phlebitis, 10 cases; cases associated with unexplained fever, 7 cases; associated with symptoms of embolism, 1 case.

Dr. E. LIBMAN said that they had made a limited number of studies as to the value of transfusion in these cases, and thus far all he could say was that the transfusion strengthened the patient and gave him a longer time to fight, but he had hitherto seen no direct curative result. Dr. Libman said that the paper of Dr. Conner seemed to him an unusually valuable one. For some years back he had suspected that the sharp temperature rises and chills seen in cases of typhoid fever, particularly toward the latter part of their course, might be due to thrombosis; in such cases blood cultures were often negative. He asked Dr. Conner whether he had been able to determine by blood examination in cases of thrombosis in general whether they were purulent or not. He found that in some cases of nonsuppurative thrombosis that while the total leucocyte count and the polymorphonuclear count were as high at the onset as in the purulent cases, the polymorphonuclear count did not remain as high later in the course of the disease.

Dr. WILLIAM S. THAYER of Baltimore called attention to the many cases of thrombophlebitis that occurred in typhoid fever, and especially in the pulmonary vessel. In the cases he reported pulmonary embolism occurred before signs of phlebitis in 10 cases; during the active signs, in 10 cases. This was a total of 29 cases and 33 per cent. of all he had under observation. Phlebitis with pulmonary symptoms of doubtful nature, 8 cases; probable embolism without evident phlebitis, 26 cases; pulmonary disease not embolic, 25 cases. There were, in his opinion, three types of embolism which should be considered, the transient dry pleurisy, the pneumonia with small areas, and the extensive plastic pleurisy. Among the cases he reported were 12 with bloody sputum.

A Note on Fatal Cases of Postoperative Embolism.—Dr. LOUIS B. WILSON of Rochester, Minn., said that between the years 1880 and 1899 there had occurred no fatal cases resulting from embolism, and during this time there had been performed about 3,000 major operations. On September 13 the first death occurred, and without any change in operators, no change in the nurses, no change in the anesthetic, and no change in the treatment. Among the possible reasons for this might be that during the ten years the operative cases were drawn from private practice, cases selected by members of the staff, and they were operated upon earlier than the usual run of cases. Another reason might be that there had been an enormous increase in the number of patients operated upon for stomach, gall-bladder, and other disorders. In many of these cases it was interesting to note the high percentage in which cachexia was marked. While there had been performed over 1,300 breast operations there had not occurred a single case of embolism. Eleven of these patients died on the fourth day; 21 died before the eighth day. Out of 43 cases autopsy was allowed in 31, and in most it was found that the emboli originated in the heart chambers. One case reported was a male, forty-three years of age, with a clinical diagnosis of asthma, paralysis of the vocal cords, and a tentative diagnosis of aneurysm of the arch of the aorta. The specific gravity of the urine was 1,028. He complained of difficult breathing, night sweats, and a fear of impending death. There were a dilatation of the arch of the aorta, asphyxia, and symptoms that pointed to death, probably from pressure. This patient died at his office. The autopsy findings showed that the asphyxia was probably due to pressure of the aortic dilatation upon the trachea. Dr. Wilson reported another case of a woman, fifty-one years old, who came in with a diagnosis of carcinoma of the sigmoid. She had diarrhea, blood in her stools, and had lost weight. She suddenly died. Summary.—From September 30, 1889, to September 15, 1899, there had been 6,000 operations, and with no deaths from emboli. From September 13, 1899, to December 31, 1911, they had had 57,000 operations, and 47 deaths from emboli. There had been no change in the operation, in the anesthetists, in the nurses, in the surgical procedure, in the anesthetic, in the treatment of the convalescence. The probable reasons given were: (1) During the first ten years the patients were drawn from the surgeons' private practice. Forty-two of these patients had suffered for from 2 to 35 years from severe chronic debilitating diseases, 4 had strangulated hernia, and one appendicitis. All were extremely sick when operated upon. Fifteen had a very low hemoglobin percentage; 12 out of 15 had a delayed coagulation time. (2) Certain changes in the regions that were attacked surgically. There was no fatality following operations upon the breasts in 1,346 cases; no fatalities followed operations on the uterus (449 vaginal hysterectomies). There had occurred no case of fat embolism. Eleven patients died on or before the fourth day before sitting up; 32 patients died on or before the eighth day and after getting out of bed. The general policy was now to get these patients up and about as soon as possible. At autopsy there were found 36 cases of pulmonary embolism, 10 cases of cerebral embolism, and 1 case of coronary embolism, a total of 47 cases. There was a large percentage of cases in which the emboli apparently originated in the heart.

On Secretory Processes in the Kidney.—Dr. T. G. BRODIE of Toronto presented this communication. After an active diuresis the convoluted tubules were found to possess a wide lumen. Comparative measurements of the active and resting tubules proved that this effect was due to a forcible distention of the tubule by the watery secretion from the glomerular surface, for this secretion was driven down the tubule under a considerable pressure. In the process of secretion by the tubule a number of granules were discharged by the cells into the lumen, and these were contained within thin membranes which, as microchemical tests showed, contained fat. The contents of these little spherules were apparently concentrated solutions of waste products, for on reaching the lumen they rapidly swelled to spheres of considerable size. This was probably due to the passage of water osmotically from the dilute glomerular secretion through the wall of the membrane into the spheres, an osmotic exchange which continued until either the sphere burst, or its contents reached the same osmotic pressure as that of the glomerular fluid. A further examination of the behavior of these spherules under conditions in which the glomerular secretion was prevented, confirmed the explanation given above. The spherules then remained of small size. This condition was attained by experimenting upon animals in which the spinal cord was divided in the lower cervical region. Such experiments had also given a means by which it could be determined whether any given diuretic acted upon the secretory cells lining the convoluted tubules. Typical secretory granules were found in the lumen of the convoluted tubules after such diuretics as caffeine, urea, or

sodium sulphate. There was also evidence to indicate that the fatty envelopes of these granules were absorbed in the lower portion of the tubules.

Glomerular Lesions of Subacute Bacterial Endocarditis.—Dr. GEORGE BAEHR of New York presented this paper, which was read by Dr. E. Libman. He said that the characteristic kidney lesions of subacute bacterial endocarditis were originally described by Loehlein in 1910. The description of the lesions as studied by him and later by the author was as follows: Usually a small part, sometimes a large part, or the whole of the glomerulus was involved, and in the capillaries usually in the affected part, one could under proper conditions find plugs of cocci. The epithelium of the part of the glomerulus involved first swelled up and then underwent necrosis. The epithelium of the visceral layer of Bowman's capsule over the involved part proliferated and there was some desquamation. The involved part then became adherent to the parietal layer of the capsule, and meanwhile organization of the affected area occurred, the resultant being a fibrous mass which became clothed by epithelium which grew over it, from the epithelium of the parietal layer of Bowman's capsule. When the whole glomerulus was involved there was found the outer part fibrous tissue; the central part might remain as a homogeneous mass. Occasionally a hyaline ball was produced. Twenty-five cases of infection of the endocardium by the endocarditis coccus were studied, and of these 23 showed the lesions in the kidneys. In the few subacute cases they have had due to other organisms and in cases of acute endocarditis due to the ordinary streptococcus, staphylococcus, and gonococcus, such lesions were never found. In 10 out of 11 cases which Dr. Libman believed to be instances of bacteria-free, healing or healed stages of subacute bacterial endocarditis, the lesions were found. In these cases all the lesions of the kidney were in the healed stage. The percentage of glomeruli involved in the cases varied from 2 to 75 per cent.; most of them had over 10 per cent. of the glomeruli involved. The number of early lesions, as compared with the number of healed lesions, varied in the different cases, this variation being due to different factors, chief among which was probably the period of duration of disease before death occurred. The lesions seemed to be less frequent in the cases which had become bacteria free.

On the Principles of Treatment in Nephritis.—Dr. MARTIN H. FISCHER of Cincinnati read this paper. He said that all the changes that characterized nephritis were colloid-chemical in nature, and were due to a common cause, namely, to an abnormal production or accumulation of acid (and substances that acted like acid) in the kidney. To this were due the albuminuria, the morphological changes in the kidney, the associated formation of casts, and the changes in the quantitative output of water and dissolved substances by the kidney. All nephritides were parenchymatous nephritides and differed only in that the changes in some were general (parenchymatous nephritis), while in others they were local (chronic interstitial nephritis). The fact that healthy kidney tissue existed between the patches of parenchymatous nephritis in the latter cases accounted for the scarcity of urinary signs in the latter disease. The relief of nephritis depended upon a removal of as many as possible of the conditions that were responsible for the abnormal production or accumulation of acid in the kidney, and a direct combating of the acid condition and its effects upon the kidney. To this end there were indicated alkali to neutralize the acid, salts, including NaCl, to reduce the effects of the acid on the kidney, and water that this might be present in a "free" state for the urine.

Stenosis of the Duodeum: a Statistical Study with the Report of a New Case.—Dr. JOHN M. ANDERS of Philadelphia read this paper. He said that congenital stenosis was not considered in this discussion. The acquired form was most probably more common than had been supposed by internists, and it invariably developed secondarily upon morbid processes either in the duodenum itself or adjacent organs. An interesting relationship existed between duodenal stenosis and such leading causative affections as duodenal ulcer and carcinoma, as well as disease of the head of the pancreas. A new case was here placed on record, since it embraced certain details of interest and diagnostic importance. The stenosis in this instance was due partly to the constricting cicatrix of an old ulcer and partly to the kinking occasioned by the adhesions. The subject was further considered in three aspects: (*a*) The incidence of the condition, including a collective investigation into the cases recorded in medical literature; (*b*) the etiological and pathological causes, and (*c*) the diagnosis. A totality of upward of 200 collected cases were presented in tabular form. No cases of duodenal disease, which were found recorded in the literature, in which any doubt of actual stenosis existed, and of which there were many, was embraced in the series. The accompanying table, which was largely self-explanatory, set forth the names of the reporters and the references, pathological causes, whether intra- or extra-duodenal, and also whether benign or malignant. Again the presence or absence of kinking was noted, and any points of unusual interest. The causal conditions were divisible into two groups—benign and malignant. About 20 per cent. of the aggregate number of cases were dependent on malignant diseases of the duodenum, pancreas, and other adjacent structures. Of the benign forms, the greater number were occasioned by duodenal ulcer. In 29 instances constriction of the duodenum was the result of compression by the root of the mesentery. Ochsner reported 15 cases in which spasm of the hypertrophied muscular layer of the duodenum operated as a cause of the condition. Among other factors in the production of duodenal stenosis of benign character were peritoneal adhesions and bands, gallstones (eight cases), cysts of the pancreas, kinking, hematoma of the pancreas, and ovarian cyst. A point of interest was that about 65 per cent. of the cases were of intraduodenal origin. The diagnosis of stenosis of the duodenum might be impossible, or practically free from difficulty, according to the seat of obstruction. For example, if the stenosis was located above the ampulla of Vater, it excited a symptom complex, which could not be distinguished from that of pyloric constriction. On the other hand, in the more usual chronic type of infrapapillary stenosis, a fairly characteristic grouping of features were presented, of which the chief were paroxysms of pain in most cases referable to the right epigastric region, occurring from three to five hours after the ingestion of food, vomiting, the vomitus containing both biliary and pancreatic secretions, but no fecal matter, acholic stools, constipation, and epigastric distention relieved by emesis. Dilatation of the stomach was present in the majority of instances, but not so constantly as in suprapapillary stenosis. Cases in which the obstruction was opposite to Vater's ampulla presented characteristic symptoms, which differed in certain particulars from those of infrapapillary stenosis. Stenosis of the jejunum could not be distinguished from infrapapillary constriction with any degree of certainty. Other diagnostic features were discussed.

A Clinical Study of a Thousand Cases of Ulcer of the Stomach and Duodenum.—Dr. JULIUS FRIEDENWALD of Baltimore read this paper. He said that the thousand cases occurred in 12,598 patients affected with various gastric disturbances (7 per cent.). The largest proportion occurred between the twentieth and fiftieth years, and the greatest number between the twentieth and thirtieth years. There were 676 females and 324 males. As to occupation, 31 were cooks, 18 were workers in metal, 12 in porcelain, 8 were miners, 28 were tailors, 15 shoemakers, 19 blacksmiths; a definite history of trauma was elicited in 23 cases. Anemia was present in at least 65 per cent. of all cases. Of the entire number 774 were treated medically, 91 were operated on; 20 of the 91 operated upon had been first treated medically. Of the 774 cases treated medically 511 were given the rest cure treatment, while 263 were treated as ambulatory patients. Of the 511 treated by the rest cure 394 underwent the Leube treatment and 107 the Lenhartz, or a slight modification of the same. Of the 394 treated by the Leube cure 287 (or 72 per cent.) were cured, and 92 (or 23 per cent.) were not cured, and 15 died (4 per cent.). Of the 107 treated by the Lenhartz treatment 73 (or 68 per cent.) were cured, 29 (or 27 per cent.) were not cured, and 5 (or 5 per cent.) died. Of the 263 cases treated as ambulatory patients, 147 were treated with nitrate of silver, 106 with subnitrate of bismuth, and 10 by the olive oil method. Of the 147 treated with nitrate of silver 66 (or 45 per cent.) were cured, while 81 (or 55 per cent.) were not cured. Of the 106 treated with subnitrate of bismuth 56 (or 53 per cent.) were cured, and 50 (or 47 per cent.) were not cured. Of the 10 treated by the olive oil method 4 (or 40 per cent.) were cured and 6 (or 60 per cent.) were not cured. End results: Of the 287 cases treated by the Leube method and cured 77 could be followed for a period of five years or longer after treatment. Of these 58 (or 75 per cent.) remained permanently well, while 19 (or 25 per cent.) had relapses. Of the 73 treated by the Lenhartz method and cured 35 could be followed for a period of five years or longer after treatment. Of these 27 (or 78 per cent.) remained permanently well, while 8 (or 22 per cent.) had relapses. Of the 91 cases operated on 64 (or 71 per cent.) were

cured and 20 (or 22 per cent.) were not cured, and 7 (or 7 per cent.) died. Of these 10 had perforations, of which 6 (or 60 per cent.) recovered, and 4 (or 40 per cent.) died. End results: Of the 64 cases operated on and cured 45 could be followed for a period of 5 years or longer; of these 41 (or 91 per cent.) remained well, and 4 (or 9 per cent.) had relapses.

Defective Development from Arthritis in Early Life.—Dr. GEORGE DOCK of St. Louis referred to the occasional references to impaired development following arthritis which were found in medical literature. Considering the relation of joint inflammations to the growing centers of adjacent bones it was remarkable not to find more actual examples. The case he reported seemed to illustrate the relations. Röntgenographs were shown.

Weight Curves in Typhoid Fever.—Dr. WARREN COLEMAN of New York said that loss of weight had usually been considered as an essential symptom of typhoid fever. Previous investigations of the subject failed for the most part to state the amount of food taken by the patients, thus making comparisons of the results difficult. There was a general agreement, however, upon the following conclusions: (1) The majority of the patients lost weight. (2) The extent of the loss depended upon the severity of the infection and the duration of the disease. (3) The maximum loss was reached in the third week, more rarely in the second. (4) Complications increased the loss of weight. (5) The loss usually ceased with the return of the temperature to the normal, but might extend to the third week of convalescence. (6) The majority of the patients gained in weight during convalescence, sometimes rapidly. (7) The loss of weight was usually ascribed to (a) the fever, (b) the so-called toxic destruction of protein, and (c) to partial starvation. (8) The loss due to each of these causes might be reduced to a minimum, or prevented by a liberal diet containing an abundant supply of carbohydrates. (9) Dr. Coleman exhibited a number of charts showing the weight curves of patients on low and high caloric diets.

Antityphoid Inoculation: Three Years' Experience with Its Use in Training Schools for Nurses.—Dr. LESLEY H. SPOONER of Boston reported that this work, stimulated by the results of antityphoid inoculation in the British Army, aimed to establish an immunity among nurses and physicians in hospitals, who under the best conditions suffered a high morbidity from typhoid. Its success depended upon its safety and the ease with which it could be accomplished. These ends were secured by the use of a low virulence vaccine administered at frequent intervals in small doses. The results, from point of view of (1) blood changes and (2) incidence of the disease, seemed to justify the procedure. The use of the same prophylaxis during epidemics was safe, sane, and most desirable.

A Case of Meningococcus Endocarditis and Septicemia with Late Appearance of Meningitis.—Dr. F. G. FINLEY and Dr. J. L. RHEA of Montreal reported the case of a male, forty-seven years old, who was admitted to the hospital after being ill for three weeks with chilly sensations, sweats, and articular pains, palpitation, dyspnea, and precordial pain. The physical examination showed a moderate cardiac enlargement, an apical systolic murmur, and a hemorrhagic nephritis, a somewhat enlarged and tender liver and slight ascites. The temperature was slightly elevated and continued for two weeks with a maximum of 101.3° F., and usually under 101° F. He then became dull, had a rigor on two successive days, a copious hemorrhagic eruption on the skin with rigidity of the neck and arm, and pathological reflexes; there was a leucocytosis of 29,000 to 31,000. Coma set in with death in four days after the appearance of the symptoms of meningitis. The blood culture and lumbar puncture gave a pure culture of the meningococci. The autopsy showed malignant endocarditis of aortic and mitral valves, acute hemorrhagic nephritis, and purulent meningitis. Smears from the cardiac valves and meninges revealed great numbers of meningococci, and pure cultures of this organism were obtained from these structures. The chief interest in this case lay in the localization of the lesion on the endocardium and the late development, so far as clinical evidence went, of the meningitis.

Metabolism of Scurvy in an Adult.—Dr. LOUIS BAUMAN and Dr. C. P. HOWARD of Iowa City believed that conclusions could not be drawn from this, the first accurate study of metabolism in scurvy of the adult. Nevertheless, in their experience, loss of various food constituents through the feces was less when fruit juice was added to the diet. The total sulphur metabolism was abnormal throughout. Chlorine and sodium were retained during the fruit juice period, but excreted in excess of intake during the preliminary period. More potassium, calcium, and magnesium were retained during the fruit juice period.

Demonstrations of Lesions of Nitrogen Tetroxide Poisoning.—Dr. FRANCIS CARTER WOOD of New York reported a case of poisoning due to nitrogen tetroxide, and also presented photographs showing the results of experimental work in connection with the study of the pathological lesions incident to the action of the gas. He stated that the chief lesion in the human case was a lobular pneumonia accompanied by extensive emphysema. The chief characteristic of the exudate was its large content of cells from the walls of the alveoli. Evidences of a reparative process were very abundant, many of the alveoli being covered with large epithelial cells. In some cases ingrowth of connective tissue in the bronchi and alveoli had occurred. There was an acute bronchitis with desquamation of the epithelium and also thrombosis of the smaller capillaries. Exactly similar changes could be induced in animals by inhalation of very small quantities of nitrogen tetroxide diluted with large volumes of air. The first lesion was an acute edema with hemorrhage in the alveoli of the lung. If the animal survived this condition it went into a stage of desquamative pneumonia with filling of the alveoli with exudate and cells derived from the lining walls. After four or five days reparative processes began and the lung could regain practically its normal condition if the etching of the tissue by the acid fumes had not been too extensive. He also cited a number of illustrative examples from the literature of the subject, some 250 cases having been reported with about sixty deaths.

Election of Officers.—*President*, Dr. Lewellys F. Barker of Baltimore; *Vice-President*, Dr. Simon Flexner of New York; *Secretary*, Dr. George M. Kober of Washington; *Recorder*, Dr. S. Solis-Cohen of Philadelphia; *Treasurer*, Dr. J. P. Crozer Griffith of Philadelphia; *Councillor*, A. McPhedran; *Representative on the Executive Committee of the Congress of American Physicians and Surgeons*, Dr. William S. Thayer of Baltimore; *Alternate Representative*, Dr. Theodore C. Janeway of New York.

CONNECTICUT STATE MEDICAL SOCIETY.

One Hundred and Twentieth Annual Meeting Held at New Haven, May 22 and 23, 1912.

The Nervous Manifestations of Pneumonia.—Dr. JOHN C. LYNCH of Bridgeport said that the nervous manifestations were encountered in almost every case of acute infectious pneumonia. These manifestations might be divided into two types: Those which occurred in association with the disease, and terminated with the crisis; and certain manifestations that occurred during or after the attack, and did not terminate with the crisis. Of the former, some might be due to the sudden perverted physiological condition that the organism underwent as the result of the abrupt onset of the disease; others might be due to the high temperature; while others, and possibly all of them, might be dependent upon the toxins. The toxins were many and various. Some might be developed in the invading organism, while others might be developed from the tissues of the body by the destructive action of the pneumococci upon them. Of the toxins thus produced, some might have an affinity for the heart; others, for the liver, kidneys, or the central nervous system. A certain relationship was observed between; and under certain conditions, one or the other might predominate and give rise to special pathological effects. The nervous manifestations included chill, depression, pain, and delirium. The author further remarked that cerebral pneumonia occurred most frequently in children and young adults; but that it might occur in the aged, and that in them it was always a serious condition. He also said that another nervous symptom was the development of herpes on or about the lips, which might be regarded as a favorable sign; and that where transient palsies had occurred, they were probably toxic. Dr. Lynch asserted that pneumonia might be followed by exhaustion psychosis.

Dr. HAROLD S. ARNOLD of New Haven asked if some of the symptoms, which were commonly ascribed to the action of the toxins upon the central nervous system in pneumonia, particularly in fatal cases, were not the actual invasion of the meninges by the pneumococcus, which invasion produced inflammatory reaction. He also wanted to know whether pneumococcus meningitis was not more common than many observers thought. He said that the fact which Dr. Lynch had mentioned, and to which Liebermeister had recently called attention, namely, the frequency with which he had found suppurative inflammation

of the meninges at autopsies upon pneumonia patients, in whom, during life, no meningitic symptoms had been observed, was suggestive.

The Responsibility of the Insane.—Dr. HENRY S. NOBLE of Middletown observed that it was of more than passing interest to note the frequency with which insanity was pleaded as a defense for crime, and that this frequency rendered it a medicolegal study. He remarked that underlying the whole matter of irresponsibility for crime, by reason of insanity, was a misunderstanding between the legal and medical professions. The attitude of those who wished to vindicate the majesty of the law was that no insane person was responsible for his acts. He stated that there was an attitude somewhat in advance of that which for years had been maintained by the courts, which was shown in a recent charge of an eminent jurist, to the effect that the most reliable and efficient test of responsibility where insanity was pleaded as a defense would be the question of whether the crime charged was the product and direct result of the insanity alleged. That insanity implied certain immunity from punishment, he said all would agree; but that every alienist of wide experience recognized that there were degrees of responsibility associated with insanity, and that the majority of the insane should be held responsible for many of their misdeeds. Dr. Noble thought that every medical officer, in charge of an institution for the care of the insane recognized that many of his patients often committed misdemeanors deliberately and with malice aforethought; and although knowing right from wrong, and with full understanding of the nature, character, and even consequences of their misdeeds, they continued to transgress. He said that the insane were sometimes subjected to mild forms of punishment, according to the nature of their offenses; and he referred to the fact that Dr. Mercier had said that to those patients whom he allowed "pocket-money," the prospect of having it stopped had restrained them from practices of mischievousness, and other destructive habits. Although the principle had been loudly maintained that no insane person was responsible, and should therefore, never be punished, yet in actual practice it had been found that a large percentage were responsible; and that they acted from the same motives and were influenced by the same considerations as those who were supposed to be in full possession of their faculties. Dr. Noble further said that all would agree that some of the insane were wholly irresponsible, and were justly entitled to complete immunity for their misdeeds; but that it could not be denied that a very large number, to some extent at least, were responsible for their misconduct. He felt that an endeavor should be made to determine just what mental conditions should exonerate the insane offender from some or all punishment. It was his idea that the insane should be divided into two classes—those dominated by desire and those dominated by diseased judgment. He felt that the former constituted the vicious insane, and the latter the conscientious; one was responsible, the other, irresponsible. He thought that each case should be considered by itself and an endeavor made to decide whether the act complained of was the direct effect and consequences of disease or not. It would be a step in advance when graduated responsibility of the insane was recognized in law as it was in medicine, and penalties regulated in accordance with such principles.

Dr. WHITEFIELD N. THOMPSON of Hartford said that obedience to tradition, conservatism and a more or less general belief that a large percentage of offenders against the law were in some way abnormal, stood as stumbling blocks in the way of due consideration of the varying degrees of responsibility of those suffering from some mental disorder. That there seemed to be no valid argument against partial responsibility in certain classes of the insane, and in others mentally defective; but that the rub came in obtaining recognition of the fact when victims of such states came into conflict with the law. He remarked that gradual mental deterioration was marked by partial, though not full, loss of responsibility. He felt, as Dr. Noble had, that it was important to take into consideration the individual's normal tendency; and whether he had yielded to the dictates of desire, or had acted in good faith, in obedience to the directions of a diseased judgment.

Dr. JAMES M. KENISTON of Middletown observed that if doctors and lawyers could get together they might solve the whole problem in a common-sense, practical way. The lawyer should be taught that an insane man is a sick man—just as much as if he had diphtheria or cancer; and should be treated as such. Further, in criminal or civil suits, the doctor—the expert—should be allowed to examine the person undergoing trial, and then tell the jury exactly what he had found. Dr. Keniston was in favor of abolishing the word "insanity," just as had been done with the word "consumption." He felt that different forms of mental disease were now recognized; and that with every one of those there was some bodily affection, mind and body suffering together, though in different degrees. He said that the experienced doctor should, by virtue of his skill and experience, be the best man to decide that question; laws, customs, and precedents, notwithstanding.

Dr. NOBLE remarked that he wished to emphasize the point that insane persons were not necessarily irresponsible for the acts which they committed.

Experimental Nephritis and Its Clinical Significance.—Dr. MAX R. SMIRNOW of New Haven said that nephritis might be produced by a variety of substances that reached the kidneys for excretion. Substances like mercury, lead, bacteria, other heavy metals or their toxins, drugs, etc., had been used experimentally with success with parenchymatous nephritis, glomerulo-nephritis or interstitial nephritis. Many writers had suggested intestinal absorption as a possible etiological factor for nephritis, he said; and it had also been suggested that disturbed metabolism, particularly that derived from disturbances of liver function, might induce nephritis. Experiments showed that rabbit feces extract and rabbit bile produced in the rabbit both a parenchymatous and an intestinal nephritis, depending on the length of time the experiments were carried on. In those experiments, a secondary anemia was found to frequently accompany clinical manifestations. It was his belief that absolute proof of similar action of bile and other substances absorbed from the intestine in man was still wanting; but that its inference was justifiable from the experiments made.

Dr. GEORGE BLUMER of New Haven said that so far as clinical manifestations of autointoxication were concerned, he wished to enter a protest; that he had not been able to satisfy himself that there were any clinical manifestations of so-called autointoxication; and that the great weakness of experiments of that kind had been pointed out by Dr. Smirnow, when he attempted to produce kidney lesions by the interperitoneal injection into rabbits of an extract of rabbit feces. His idea was that even if you produced a lesion, you did not know by what it was caused; that is by what particular thing in the mixture it was produced; and in order to reach a conclusion it would be necessary to test each different constituent in the bile. Even though it were proved that there were certain substances in the intestinal canal that, under normal or pathological conditions, were capable of setting up nephritis experimentally, yet it would not have been proved that those conditions were applicable to the human being. Apparently the intestinal epithelium had a certain amount of selective action on the substances which it took up; and if there was a substance which passed through them without being absorbed, it was unlikely to cause nephritis.

Dr. CHAS. J. BARTLETT of New Haven said that aside from the rather rare cases in which the chronic condition had followed acute nephritis, the arteriosclerotic type of the disease, and the occasional cases in which a definite chronic poisoning, like lead, was the cause, it must be admitted that the etiology of chronic nephritis was doubtful. In adopting the method which had been outlined by Dr. Smirnow, his aim was to get a bacteria-free extract of the feces. He thought the injection of this extract into the peritoneal cavity of the animals experimented on might not give a condition entirely similar to that obtained in constipation; but that it had the advantage of definitely introducing into the animal, in solution, a quantity of material that had been obtained from another animal of the same species. The results were encouraging. A considerable percentage of the animals showed definite interstitial lesions of the kidneys. The most surprising result was the obtaining of equally marked lesions when bile alone was injected; although in that case the number of animals tested was small. He also said that so far they had worked chiefly with one kind of animal, rabbits; and their kidneys had seemed to be very susceptible to the injurious action of the various substances. It was Dr. Bartlett's idea that the results of such experiments as he had made, could not be directly transferred to a discussion of the disease as it occurred in man.

Dr. SMIRNOW later remarked that they had worked on some bile, but not on the bile of the rabbit, and they had found that it produced an acute change in the kidneys. He said that human bile and bile taken from cattle would not give rise to interstitial nephritis; but to an acute process. As to the absorbability of those substances, there were some experiments that would prove, as Dr. Bartlett had said, that they might be absorbed.

The Present Status of the Vaccine Treatment of Diseases of the Ear, Nose, and Throat.—Dr. FREDERICK N. SPERRY of New Haven said that vaccines were available for the treatment of infections where antibodies were produced in insufficient quantities, and most available where comparatively small amounts of toxin were being absorbed, and consequently the formation of antibodies was likewise small. He said that the introduction of vaccine stimulated the general production of antibodies, and the production was usually in excess of the amount necessary to neutralize the vaccine. With excess of antibodies there would be an increase of the bactericidal power of the blood. In diseases of the ear, nose, and throat, he observed that the conditions were good for vaccine treatment, and that such troubles were usually a localized infection, often in an area of lowered resistance. It was stated that there was a minimum of toxin absorption, and a consequent insufficiency of antibodies. In such cases the whole body should be called upon to help manufacture a resistance. The author considered the reports of the use of vaccines unreasonably variable, more than could be accounted for by scepticism and enthusiasm. It seemed fair to assume that some fault in the technique was to blame for the lack of good results. The chief difference between the method of those who had failed to obtain good results and that of those who had succeeded was the longer intervals between treatments (such as a week or more, as compared with three days), and the using of stock vaccines as compared with autogenous. Dr. Sperry's cases numbered 17, and included a variety of conditions. While most of his cases showed marked improvement, yet he had a few instances of failures. He also said that tuberculin was a potent agent for the treatment of tuberculosis, inasmuch as it stirred the system to combat when judiciously administered. His idea was that while in vaccine there might be had an efficient helper, which at times might do the work of the chief, yet the best results were to be had by following out the regular lines of medical and surgical treatment, and using vaccine as an adjunct.

Dr. E. TERRY SMITH of Hartford said that during the past few years he had used vaccines in the treatment of a number of conditions and considered them of value, in those cases which had inflammatory conditions, in furunculosis, in some cases of actual otitis media, and in exanthematous diseases. He also felt that tuberculin might be given with brilliant results by a man who was thoroughly competent and appreciated all the attendant dangers.

Dr. GEORGE BLUMER of New Haven said that when one considered the number of strains of gonococci in the different infections, it would not be hard to appreciate the necessity for using autogenous vaccines. He felt that the giving of vaccines was of little use, unless something was done locally to change the circulatory conditions.

Dr. SPERRY thought that stock vaccines might be used with some value in cases of staphylococcous infection.

The Open Air Schools.—Dr. HENRY M. STEELE of New Haven was heartily in favor of open air schools, and mentioned the fact that they were attracting attention, not only in our country but in England and Germany as well. He said that there had been open air schools established at Hartford, and at South Manchester, and that he had been appointed by the Civic Federation of New Haven to establish such a school. He said he had done this by securing individual subscriptions with what assistance the Board of Education had given in the way of furnishing the teacher and the regular school equipment. The Management of the New Haven Orphan Asylum had furnished the morning and afternoon lunch. For clothing the children wore the same as those of the Orphan Asylum, except when in the tents, at which time they had been additionally protected by very warm, heavy outer-garments, and had sat in felt-lined canvas bags. He observed that the children had shown marked improvement in health from the first, and said that it was their hope that this small school might emphasize the fact that fresh air would not cause children to take cold; as those who had had colds when they came, soon lost them. He felt that the regular public school rooms should be more freely and constantly ventilated.

Dr. HENRY F. STOLL of Hartford said that the open air school in that city was at the end of its third winter. In that school they had children from parents who had died of tuberculosis, and in addition those who were nervous or had had headaches. He mentioned one case of chorea which they had had, and which was particularly severe. The child could hardly walk when she came to them, but when she left she had been perfectly cured. The cases of headache had been cured promptly. Dr. Stoll said that the Hartford school had taken no open cases of tuberculosis, because they felt it would have been unfair to the other children, who were so delicate, and who might become infected. He said that the roof to the tents should be made of wood; that the sides should be walled up about six feet and ought to have two feet of sand under the floor; and that the building should face the south. He remarked that the expense had been about fifteen cents a day per child; this had included the salary paid the cook, the food, and paper-napkins. He remarked that the discipline had been splendid, and that many boys who had been known as "bad boys" before entering the school had materially changed after being there a short time.

Dr. THOMAS G. SLOAN of South Manchester said that the school there had been running sixteen months; and that upon comparing his figures with those of Dr. Steele, he found that they had not done so badly as he had previously thought. He said that they had found an average gain of four pounds a child, and one thing that had been insisted on at the South Manchester school was that each child brush his teeth every day.

Treatment of Tumors of the Mammary Gland.—Dr. PHILIP W. BILL of Bridgeport declared that every growth of the breast in a woman over forty should be operated on; for even if harmless, no one could say how long it would remain so. He felt, however, that it was not always necessary to do the radical operation, but that it was better to operate on ten breasts that might never become any worse, than to allow one patient to die from the tumor's having become malignant. He said that in benign tumor the operation might be done in such a way as to cause but slight disfigurement; and he hoped that in this era of early operations there might be a diminution in the amount of tissue it had been necessary to remove.

Dr. GEORGE N. BELL of Hartford said that he felt there was no class of cases that carried so great a responsibility in their final decisions as neoplasms of the breast; he could not understand why men that would have been the first to advocate operation in abdominal conditions, would advise their patients to wait. He said they must know the large percentage of women over thirty-five years of age, that have died with cancer, and that of that number, 50 per cent. could have been successfully operated upon, if they had been taken in time.

Dr. D. CHESTER BROWN of Danbury declared that eight out of every ten cases of cancer of the breast were positively malignant; and that all a man in general practice had to do was to call every case that came to him a malignant one, and he would be right nine cases out of ten. It seemed to him that it was a criminal act to cut into what might seem to be a benign growth, in order to make sure; and if good results were to be obtained, the entire gland and growth should be removed.

Dr. DANIEL F. SULLIVAN of Hartford remarked that so far he had not known of the State of Connecticut's having made any appropriation for the investigation and cure of tumors; whereas it had appropriated almost a million of dollars for the investigation of tuberculosis. It was his opinion that the very extensive operation that had been employed by most surgeons in the past was being gradually receded from. For the last fifteen years he had had but few returns of the disease in cases where he had done radical operations: but he wondered whether the radical operation was not too much of a disfigurement for the patient, and felt that something should be done along that line for improvement.

Dr. BILL said that if it ever became possible to remove the breast before malignancy had become established, the chance of doing away with the mutilating operation would present itself.

Some Reminders on Fractures.—Dr. AUGUSTIN A. CRANE of Waterbury recommended the use of the *x*-ray in fractures, for the benefit of the patient and the protection of the physician; and said that if only one exposure was made, it should be after reduction; and that it required more skill to interpret an *x*-ray plate than it did to make it. Without the use of the *x*-ray, it had been impossible to understand and diagnose accurately fractures of the carpus, metacarpus, tarsus, metatarsus, and the articular surfaces of the long bones. For general purposes, he considered plaster-of-Paris the best material for fixations, and thought it a pity that it was not more generally used. The author remarked that Lane's plates should be employed particularly in open fractures and non-unions, and that a powerful bone-clamp should be used to replace the fragments, retain them, and hold the plate; also that Lane's technique should be followed closely. It was his opinion that the poor results reported by American surgeons were due largely to their having failed to observe all the requirements.

Dr. Ansel G. Cook of Hartford said that he felt there was a tendency to rely too much on the *x*-ray, to the exclusion of other means of diagnosis, and that it should not be accepted as the sole means.

Dr. William H. Carmalt of New Haven remarked that it was very important to observe frequently the splints in case of fractures, as they got misplaced without either the physician or patient knowing it. As the *x*-ray was only a shadow, and not a picture, he advised careful judgment in interpreting it. He emphasized the idea that it was a very difficult matter to put a fracture in place and keep it there, unless one watched it all the time. He advised the use of plaster-of-Paris, and thought that it should include the whole limb. It was his idea that bone-sprains were fractures, nine times out of ten; and that what was supposed to be Colles' fracture of the radius was almost always a complicated fracture of something else besides. A sprain which was put up and treated as a fracture would get well much quicker than one put up and treated as a sprain. If the distal portion could not be got down, he said to bring the proximal portion up, and place the parts in apposition.

Dr. Patrick J. Cassidy of Norwich said that he considered Dr. Crane's paper an educational one. It was instructive, because it advocated the use of the *x*-ray diagnosis and the necessity of fixation, while acknowledging the difficulty of the latter. He remarked that in his part of the State they had suffered from a "natural bone-setter," who had in several cases produced impaired vitality, and even death to the patients, who had disregarded the advice of the regular practitioner and gone to him. He said he wished that Dr. Crane's paper might get into the hands of the laity in his county.

Dr. Ernest H. Arnold of New Haven advanced the opinion that the *x*-ray should not be used at first, but a diagnosis be made without its use and then verified by the *x*-ray. He said that he always used the *x*-ray in treating fractures and that its use had done away with the conception of green-stick fractures. Most of his cases had been those of complete fracture and he also used plaster-of-Paris for fixation and advocated splints being put over at least two joints.

Dr. D. Chester Brown of Danbury said if Rosse's statement was true, that every dislocation was a fracture-sprain, then it would be good treatment to bring back the fragment and fix it, as had been done in the case of Lane's plates. He stated that he had seen Rosse's original plates; they were small fractures, but that it was easy to handle a big bone, as the fragment was brought into apposition and fixed there with some metallic pin, after which you got a relaxed ligament and loose joint.

Dr. D. F. Sullivan of Hartford maintained that the wound could not be made too clean, and gave for his reason the many cases of tetanus which followed compound fractures. In that belief he differed with Dr. Murphy who has advised against any interference with nature doing her work, by too constant cleansing.

Dr. Crane said that he sympathized with Dr. Cassidy's difficulties in having fractures referred to a specialist, so called, and averred that if he had been practising in Norwich he would have put fractures up in reinforced concrete, instead of plaster-of-Paris, the first visit. He remarked that none of the fractures he had seen had enough body to get hold of with a pin or clasp; they could be retained by pressure and immobilization. He quoted a caution from Dr. Beck, of Chicago, which was as follows: "The surgical busy-body, with soap and drug, has killed more fracture patients than all the dirt carried into them at the time of the injury."

(To be continued.)

Suprarenal Insufficiency in Acute Infectious Diseases.—Castaigne describes a syndrome occurring in acute infectious diseases of various kinds which he considers to be due to insufficiency of the suprarenal capsules. It consists of asthenia, arterial hypotension, abdominal and renal pains, vomiting, and in some cases sudden death. In general this train of symptoms has been ascribed to myocarditis or to unexpected effects of the use of serum. It is now recognized as due to the absence of the internal secretion of the suprarenal capsules. This condition has been seen in diphtheria, scarlet fever, typhoid fever, and erysipelas. A typical case in an adult is described, in which during convalescence from diphtheria, the patient was threatened with death as the result of this train of symptoms. The pulse became slow and there was threatened syncope. These symptoms were relieved by the use of suprarenal extract.—*Le Bulletin Médical.*

Medicolegal Notes.

Testifying as to Cause of Condition.—A physician may testify that from facts stated in his opinion, in answer to a question whether or not an accident, such as a fall, could have caused the condition in which he found the person injured, whether such condition could or would result from such facts.—Galveston, etc., Ry. Co. v. Greenig, Texas Court of Civil Appeals, 142 S. W., 135.

Expert Qualification as to Effect of Blow.—In a prosecution for assault with intent to murder a regular practising physician was held to be qualified to testify as an expert upon a hypothetical question as to what would be the effect of a blow on the head with a given instrument, with which it was shown the assault was made.—Lacoume v. State, Texas Court of Criminal Appeals, 143 S. W., 626.

Chiropractitioner Does Not Require License in Arkansas.—The Kansas statute, sections 5241 and 5243 of Kirby's Digest, provides that every person practising medicine in any of its branches or performing any surgical operation within the State without complying with the provisions of the act shall be guilty of a misdemeanor, and that any person shall be regarded as practising medicine in any of its departments, within the meaning of the act who shall append "M.D" or "M.B." to his name; or repeatedly prescribe or direct for the use of any person or persons, any drug or medicine or other agency for the treatment, cure, or relief of any bodily injury, deformity, or disease. The Arkansas Supreme Court holds that the term "agency" in the act must be construed with reference to the terms of the statute preceding it, and therefore limited to the prescription of drugs and medicine. An indictment, therefore, for the unlawful practice of medicine by prescribing an agency commonly known as "chiropractics" without a license to practise medicine was held not to charge an offence within the definition of the "practice of medicine." The court relied upon the definition of "chiropractics" as a system of healing that treats disease by manipulation of the spinal column. Hart, J., dissented, on the ground that "other agency" is a very broad term, including the use of the hands. He pointed out that the practice of medicine in all its branches includes surgery, and surgery is practised by manual operation as well as by instrumental appliances.—State vs. Gallagher, Arkansas Supreme Court, 143 S. W. 98.

Insurance Company Bound by Acts of Its Medical Examiner.—An applicant for life insurance stated, in reply to a question in his medical examination, as to whether he had ever before applied and been rejected by any other company, that he had made such an application, but had not, as yet, heard the result. The medical examiner wrote in the space reserved for his answer the word "no." The applicant did not read the report when he signed it. It was held that the applicant was not bound by the answer, the medical examiner being the agent of the company and not of the applicant; the company was estopped by the action of its agent, which was the act of the company, to assert the falsity of the answer, as written, as a defence.—Supreme Lodge vs. Jones, Texas Court of Civil Appeals, 143 S. W. 247.

Physician May Testify, Though His Fees Depend Upon Result of Case.—In an accident case it was contended that the evidence of a physician as to the nature and probable effect of the plaintiff's injuries must be disregarded by the jury because it was shown that the physician looked to a recovery in the case for his fee. The contention was not sustained. The court said that, in the first place, it would be a serious and unwarrantable reflection upon the integrity of a physician to say as a matter of law that his testimony was warped or influenced by the fact that, unless a recovery was had, he would not be paid for his services in examining or treating the patient. In the second place, if such a rule obtained, it would have a tendency to deprive those in need of the services of skilled physicians of such services, or at least put them to the necessity of paying for such services as had been rendered before the physician could testify. It is competent, when a physician has testified as to the character, nature, and extent of an injury, to ask him the amount of his bill and whether or not it has been paid for the purpose of showing bias and affecting his credibility upon this point. But when a jury, with these facts before them, has returned a verdict for the plaintiff, evidently based, or at least in part, upon the opinion of such physician, the court would not be warranted in disregarding that evidence and setting aside the verdict.—Lack Malleable Iron Co. vs. Graham, Kentucky Court of Appeals, 143 S. W. 1016.

Books Received.

The MEDICAL RECORD *is pleased to receive all new publications which may be sent to it, and an acknowledgment will promptly be made of their receipt under this heading, but it must be with the distinct understanding that it is under no obligation to notice or review any publication received by it which in the judgment of its editor will not be of interest to its readers.*

SCHMIDT'S JAHRBÜCHER DER IN UND AUSLÄNDISCHEN GESAMMTEN MEDIZIN. By H. DIPPE. Vol. 313. 1912—No. 3. 146 pages; paper. A. Marcus & E. Weber, Publishers. Bonn.

PROCEEDINGS OF THE FORTY-SECOND ANNUAL MEETING OF THE AMERICAN MEDICAL EDITORS' ASSOCIATION HELD IN LOS ANGELES, CALIFORNIA, JUNE TWENTY-SIXTH AND TWENTY-SEVENTH, NINETEEN HUNDRED AND ELEVEN. 99 pages; paper. Published by The Secretary, New York.

A MANUAL OF SURGICAL TREATMENT. By Sir W. WATSON CHEYNE, Bart., C.B., and F. F. BURGHARD, M.S., F.R.C.S. Vol. II—New Edition. 570 pages; illustrated; cloth. Lea & Febiger, Publishers, Philadelphia and New York.

COMPENDIUM OF DISEASES OF THE SKIN. By L. DUNCAN BULKLEY, A.M., M.D. 5th Edition. 286 pages; cloth; price $2.00 net. Paul B. Hoeber, Publisher, New York.

THE OCULAR MUSCLES. By HOWARD F. HANSELL, A.M., M.D., and WENDELL REBER, M.D. 223 pages; illustrated; cloth; price $2.50 net. Second Edition. P. Blakiston's Son & Company, Publishers, Philadelphia.

INFANTILE PARALYSIS IN MASSACHUSETTS DURING 1910. 154 pages; paper. Published by Massachusetts State Board of Health.

ZWEI JAHRE SALVARSANTHERAPIE. By P. EHRLICH, F. KRAUS, A. V. WASSERMANN. 105 pages; paper; price 6.50 M. Georg Thieme, Publisher, Leipzig.

KLINIK FÜR PSYCHISCHE UND NERVÖSE KRANKHEITEN. By ROBERT SOMMER. Vol. VII, No. 1. 96 pages; illustrated; paper; price 3 M. Vol. 12. M. Carl Marhold, Publisher, Halle.

HYDROLOGIE ELÉMENTAIRE À L'USAGE DES MÉDECINES. By ALLYRE CHASSEVANT. 208 pages; illustrated; paper; price 4 Fr. Vigot Frères, Publishers, Paris.

THÉRAPEUTIQUE USUELLE DU PRATICIEN: TRAITEMENT DE LA TUBERCULOSE. By Albert Robin. Vol. 1, No. 3. 650 pages; paper; price 6 fr. Vigot Frères, Publishers, Paris. Paris.

STUDIES FROM THE ROCKEFELLER INSTITUTE FOR MEDICAL RESEARCH. Vol. XIV. 356 pages; illustrated; paper. The Rockefeller Institute for Medical Research, Publishers, New York.

THE TECHNIQUE AND RESULTS OF RADIUM-THERAPY IN MALIGNANT DISEASE. By M. DOMINICI, M.D., and A. A. WARDEN, M.D. 27 pages; illustrated; paper; price 75c. net. J. & A. Churchill, Publishers, London.

A MANUAL OF CLINICAL CHEMISTRY, MICROSCOPY AND BACTERIOLOGY. By Dr. M. KLOPSTOCK and Dr. A. KOWARSKY. 371 pages; illustrated with 43 Textual Figures and 16 Colored Plates; cloth; price $3.00. Rebman Company, Publishers, New York.

DISEASES OF THE EYE. By J. HERBERT PARSONS, D.Sc., M.B., B.S., F.R.C.S. Second Edition. 684 pages; illustrated; cloth; price $4.00 net. P. Blakiston's Son & Company, Publishers, Philadelphia.

EIGHTEENTH ANNUAL REPORT OF THE MANAGERS AND OFFICERS OF THE CRAIG COLONY FOR EPILEPTICS AT SONYEA, LIVINGSTON COUNTY, N. Y. 250 pages; illustrated; paper.

ZEITSCHRIFT FÜR CHEMOTHERAPIE UND VERWANDTE GEBIETE. By FR. KEYSSER. First Year, No. 2. 204 pages; paper; price 40 M. for 12 copies. Georg Thieme, Publisher, Leipzig.

THE THIRTEENTH ANNUAL REPORT OF THE INDIANA STATE BOARD OF MEDICAL REGISTRATION AND EXAMINATION. For the Period Beginning January 1, 1910; Ending September 30, 1911. 372 pages; cloth.

DAS SUBAQUALE INNENBAD. By Dr. ANTON BROSCH. 114 pages; illustrated; paper. Franz Deuticke, Publisher, Leipzig and Wien.

MILK AND THE PUBLIC HEALTH. By WILLIAM G. SAVAGE, B.Sc., M.D. 450 pages; illustrated; cloth; price $3.25 net. The Macmillan Company, Publishers, New York.

FIFTH ANNUAL REPORT, NOVEMBER, 1911, HOSPITAL FOR DEFORMITIES AND JOINT DISEASES. 91 pages; illustrated; paper.

DER INFANTILISMUS, DIE ASTHENIE UND DEREN BEZIEHUNGEN ZUM NERVENSYSTEM. By Prof. Dr. PAUL MATHES. 188 pages; illustrated; paper; price 6 M. S. Karger, Publisher. Berlin.

Medical Items.

Postoperative Ileus.—Luigi Vaccari believes that the cause of postoperative ileus is not the presence of the drainage tube, but the presence of a septic focus and circulatory disturbances; the drainage tube, the fragments of silk ligatures, and the immobility of the intestine are only contributing factors. This complication is the expression of infection only. The true factors in causation are sepsis, foreign bodies, and disorders of circulation and nutrition of the tissues. As to the desirability of drainage, whenever there is any cause for hesitation as to its necessity, one should use drainage. Hemostasis should be complete and the bleeding vessels should be covered by peritoneum, and the duration of operation should be made as short as possible.—*Il Policlinico.*

Health Reports.—The following cases of and deaths from smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine Hospital Service, during the week ended June 28, 1912.

CHOLERA

Places	Date	Cases	Deaths
India: Bassein	Apr. 29–May 4	12	12
Bombay	May 12–18.	73	61
June 19, still present.			
Calcutta	Apr 29–May 4		84
Moulmine	Apr. 29–May 4	6	6
Indo-China: Saigon	Apr 30–May 13	83	63
Turkey in Asia and Europe			..
Total Feb. 29–May 18. Cases 249, deaths 96.			
Adana	Apr. 17–29.	53	23
Employees in railway construction.			
Adana	Apr. 30–May 13	72	25
Biredjik	Jan. 6–Feb. 5	17	18
Bilan	May 6.	2	2
Dijan	Feb. 5–May 13	11	5
Janina	Feb. 5–Mar. 13	3	..
Jeanne d'Arc	Jan. 1–6	7	6
Loros	Feb. 5–Mar. 13	16	7
Tarsus	Feb. 5–Apr. 15	7	5

YELLOW FEVER

Brazil: Manaos	May 26–June 1	..	5
Chile: Tocopilla	May 25.	Still present	
Mexico: San Juan Bautista	June 22	4	..

PLAGUE

Chile		..	..
[1]Year 1911. Cases, 262, deaths, 85.			
[2]From the Veroffentlichungen des Kaiserlichen Gesundheitsamtes, June 5, 1912.			
Iquique	May 5–11	1	..
China		..	..
May 18, present in the majesties of Fungshun, Kayung and Puning.			
Amoy	May 20.	..	Present
Ampo	May 18	..	Present
Hongkong	May 5–11.	138	118
Dutch East Indies.		..	..
Total, Mar. 3–30, cases 35, deaths 34.			
Provinces—Kediri	Mar. 3–30.	2	1
Madiven	Mar. 3–30.	14	15
Surabaya	Mar. 13.	1	1
Egypt: Alexandria	May 11–14.	4	3
Port Said	May 23–28.	3	..
Provinces—Assiout	May 15–24.	7	2
Beni Souef	May 15–29.	12	4
Fayoum	May 17–27.	26	17
Garlueh	Apr. 25.	1	..
Girgeh	May 14–25.	4	2
Menouf	Apr. 24–May 26.	13	1
Minieh	May 16–26.	46	11
India: Bombay	May 12–18.	88	80
Calcutta	Apr. 28–May 4.	..	94
Karachi	May 12–18.	70	65
Indo-China: Saigon	Apr. 30–May 13.	21	10
Java: Pasoerocan Residency	May 5–11	10	9
Persia: Bushir	Apr. 14–May 11.	513	394
Russian Empire: Ural territory	Apr. 21–May 5	7	6
South Africa: Durban	May 25.	1	1

SMALLPOX

Brazil: Para	May 19–25.	..	1
British East Africa: Mombasa	Apr. 1–30.	..	1
Canada: Fernie	June 11–17.	1	..
Hamilton	June 9–15.	1	
Quebec	June 9–15.	5	
Toronto	May 26–June 8	2	.
Windsor	June 9–15.	2	
Chile: Coquimbo	May 19–25.	7	6
China: Hongkong	May 5–11.	6	4
Seoul	May 1–25.	12	.
France: Paris	May 19–June 1	9	1
Germany—Total May 26–June 1. Cases, 24.			
Chemnitz	May 19–25.	..	1
Great Britain: Bristol	May 26–June 1	1	..
India: Bombay	May 12–18	55	36
May 5–11. Cases 18, deaths 8.			
Calcutta	Apr. 28–May 4		3
Karachi	May 12–18	1	1
Indo-China: Saigon	Apr. 30–May 13	4	2
Italy: Leghorn	June 2–8.	4	.
Naples	May 19–June 1.	7	1
Palermo	May 19–June 1.	7	
Java: Batavia	May 5–11.	3	1
Mexico: Aguascalientes	June 3–9.		1
Juarez	June 2–15.	4	..
Mazatlan	June 5–11		2
Mexico	Apr. 28–May 18.	84	40
Portugal: Lisbon	May 26–June 1.	3	..
Russia: Moscow	May 5–18.	12	..
St. Petersburg	May 12–25.	27	12
Warsaw	Apr. 14–20.	8	2
Spain: Malaga	Mar. 1–31.	.	5
Straits Settlements: Singapore	Apr. 28–May 4	1	1
Turkey in Asia: Beirut	May 19–25.	12	..

Medical Record

A Weekly Journal of Medicine and Surgery

Vol. 82, No. 2.
Whole No. 2175.

NEW YORK, JULY 13, 1912.

$5.00 Per Annum.
Single Copies, 15c.

Original Articles.

INDICATIONS FOR OPERATIONS IN DISEASES OF THE DIGESTIVE TRACT.*

By MAX EINHORN, M.D.,

NEW YORK.

PROFESSOR OF MEDICINE AT THE N. Y. POSTGRADUATE MEDICAL SCHOOL.

In selecting a topic for to-night's meeting I thought it would be timely to broach the subject of indications for surgery along the digestive tract, and the reason for this is not that I can tell you anything especially new, but because of late years a great many surgeons have operated in instances in which, at least according to the opinion of other surgeons and physicians, such operative intervention does not appear exactly right.

Another reason is that almost weekly, if not daily, I meet with patients who come to me after having undergone one or two operations with unsatisfactory result, practically complaining of the same conditions they previously had, and these are just the cases in which the operations had not been done, as it were, of necessity, but of choice. And the choice was not exactly right. Now, gentlemen, before I speak on the indications for surgical intervention, you will perhaps permit me to say a few words with regard to the reasons why these unnecessary operations have been done and what should not be done, and then I will go over to the real subject.

So far as I can see there are two points which play a great part in these so-called not absolutely necessary operations. One is that a great many surgeons maintain that, while it is good to make a diagnosis, it is not always necessary to do so. They say you should not lose time in trying to arrive at a good diagnosis. They open up the abdomen and say, make the diagnosis right there, and do what is necessary. Then there is a theory which has perhaps been taken up before it is ripe, that cancers develop upon the basis of ulcers, especially in the stomach. This has led also to the expression of a precancerous stage and to the opinion that the precancerous stage must be taken away before that cancer arrives. Accordingly ulcers of the stomach must be excised out of choice in order to prevent the occurrence of cancer.

I shall now take up the first point with regard to the diagnosis. I need not tell you that it is of importance in each case to arrive at a diagnosis, no matter whether the case is under the care of a surgeon or of a clinician. Everybody knows that before we start on treatment we want to have the diagnosis, that sometimes it is not so easy to establish a correct diagnosis, and that for quite a while, no matter how much science will advance there will be cases in which the diagnosis cannot be clearly made at once. Now, if it is necessary and important for the clinician (I speak of the clinician in contradistinction to the surgeon, although both of them are physicians, and there is really no difference between the two, except regarding treatment) in a medical case to make the diagnosis, it is, according to my opinion, much more so for the surgeon before he undertakes the operation. Take a physician who has not been able to make a diagnosis. He will be able to do something for his patient, arrange his diet, look after him, give him some wise rules of precaution. No harm will be done to that patient. He will watch him, study the patient from day to day. After a while he may arrive at the right diagnosis. The main thing is to have the wish and the desire to study the case and to follow up the patient and to watch him. Later on some symptoms may come which make it probable that such and such will be the case, and after a while the physician really arrives at the right diagnosis. Now we will take the surgeon—not much harm is done in waiting until something unusual occurs. But if we take a case in which an operative procedure should take place and the surgeon has not made a clear diagnosis and says, notwithstanding, "I will operate," I think that in a great many instances harm can be done to the patient. In some instances perhaps not, but in others decided harm will be done to the patient; he will undergo much suffering, lose a great deal of blood, and receive some scars and wounds that should not have been made. I have read lately two papers by renowned surgeons, saying that no time should be lost by methods of examination. They cut open and see. This is their principle. But even if the abdomen is open and the disease is there—I will not say that the disease lies perhaps in another apart which is not accessible—it is often overlooked, and even if it is not overlooked, a correct diagnosis by inspection cannot at all times be made with regard to affections which are exactly in the abdomen. But sometimes the disease lies somewhere else, not at all in the abdomen. I refer, for instance, to conditions as hemorrhage of the bowels. In such an instance there may be venectases and ulceration within the esophagus. I have had cases in which the hemorrhage was manifested only through melena, nothing else. Here a gastroenterostomy will be of little use. The diagnosis by opening the abdomen will not be made in some instances. So I think that the surgeons should be the first to try hard with the physicians to make the clinical diagnosis. I will not say that there are no exceptional cases in which an operation is justifiable without a correct diagnosis, but I have in mind a clear conception of what the operation can accomplish, and if we know something definite that can be found out, then it is a different thing.

The second point is that which regards the theory

*Read before the Newark Medical League on April 15, 1912, at Newark, N. J.

of the development of cancers from ulcers of the stomach. This theory was promulgated by Professor Hauser, I think, about thirty or thirty-five years ago. He is a pathologist living in Germany, and found, upon studying in a fraction of cases of cancer of the stomach that some of them developed upon the basis of an ulcer. But the figure was exceedingly small. When the clinicians took it up at that time and studied this question correctly in autopsies, especially Rosenheim, a clinician living in Berlin, they came to the conclusion that about one in fifteen cases of ulcer of the stomach really gives rise to the development of a cancer. Some, especially the pathologists, who have looked after the autopsies very thoroughly, found even a smaller figure, one in twenty, but no one who has some experience has found that this is a frequent occurrence; that is, that cancer frequently affects patients with ulcers. My own experience would also be one in twenty, and this coincidence is so small, cancer being such a frequent malady, that it is doubtful whether ulcer plays a part at all in the development of cancer.

The question is, how is it that here in this country, physicians have arrived at an entirely different conclusion? A great many nowadays say that half of the cancers of the stomach develop from ulcers. This does not tally at all with my own experience and that of a great many others, but how is it that such a theory could have been established? I think it will probably be found that there was a mixing up of these two affections, cancer and ulcer, by the circumstance that all cancers have a tendency to necrose and to form ulcers on their surface. This is a known fact, but some of the gentlemen who advance this theory, that cancers arise from ulcers, may have taken the ulcers which are found on top of these cancers as a result of the cancerous development and necrotizing, turned the fact around and said that cancer comes from ulcer. This question will have to be thoroughly studied by the pathologists, and I doubt not that in a few years they will arrive at the conclusion that ulcers as such do not give rise to the formation of cancers, that ulcers are an entirely different process, and that they do not constitute a precancerous stage. That theory of a precancerous stage has caused a great many operations which, according to my experience, have not been necessary. There is another reason why this theory cannot be sustained. It has been found that in some cases where the ulcers have been entirely excised, examined under the microscope, and found distinctly benign, still, as in two such cases of my own, cancer has developed later on in the course of half a year or a year; while in a great many cases where ulcers had not been excised, a simple gastroenterostomy having been performed at the operation, no cancer has developed. Professor Kuemmel[1] of the Hamburg Hospital has recently written a paper on his experience as a surgeon during the last ten years in that large hospital. He speaks of this condition and mentions two of these cases; one of excised ulcer in which cancer has developed later on, while in a great number of other cases of ulcers of the stomach that have not been excised, nothing has developed. This also speaks against the theory of ulcer constituting a precancerous stage. Every one of you has seen patients afflicted with ulcer of the stomach for years. They go on living and no cancers develop. In cancer, on the contrary, we find a short history of digestive symptoms lasting for half a year or so. Among fourteen or fifteen cases of ulcer of the stomach we find a case ultimately giving the signs of a cancerous growth.

There is one more point on which I will speak right now. It regards the early diagnosis in cancer of the stomach, and how to get at it. I fully agree with the surgeons that nowadays it is often impossible to arrive at a strict diagnosis, to say whether there is a cancer or not. Now the question is whether these patients should be operated upon in order that the surgeon may see, and to attack the cancer. This is one of the most difficult questions to answer. I must say that, while in a small fraction of cases such a procedure is justifiable, on the other hand, in the great majority of cases this is not indicated. Of course, the question is how to make the diagnosis, and we cannot make the diagnosis if there are not sufficient real signs that there is a development of the cancer. You can see that five or six patients will have to be cut open before you find one where that is really so. And that would not do. We have no right to open five or six individuals in order to find in one a beginning cancer, even if it should result in benefit to that fifth patient. The other four have received no benefit from it and we have done some harm, and we are not entitled to do so. I have said before that the diagnosis cannot be so easily made. If you open up an abdomen and feel the stomach with your hands and think there is no cancer you may be surprised three months later that there is a cancer. We cannot make these operations every three or four months. You see that principle would not work. If we are in doubt we should not cut open. We would have to do it over and over again. The patient is all right for a year, then he comes again; you think there is no cancer, and then the cancer develops.

But it is a different thing if we have sufficient reasons; if there are symptoms which indicate that there is a cancer. And that is just the difficulty of the problem, to select just these cases and to say: "Here we are justified in operating." I think that after a while surgeons will have to work in harmony with the clinicians in such instances. The clinician will have to study these cases, and the clinicians will be the first ones to recognize the conditions in which an operation is justifiable, and then we shall work in harmony and be able to do some good in a number of instances. The methods of diagnosis will be developed more and more, and in a great number of cases, if not in all cases, it will be possible to diagnose early cancer of the stomach.

Now we will go over to the indications for operative intervention. About thirteen years ago I read a paper[2] on a similar subject before the Medical Association of the State of New York, and there I made two statements which I think still hold good today: First, operations on the stomach for malignant diseases should be performed as early as possible as soon as the diagnosis is made, if it is feasible; second, in all benign affections of the digestive tract just the contrary principle should prevail: first all medical means and measures should be exhausted, and if they fail to produce relief and we know that surgery can accomplish something, then it is time for surgical intervention. I think that these two principles also hold good now.

[1]Prof. Kuemmel: *Deutsche medizinische Wochenschrift*, No. 10, 1912.

[2]Einhorn, Max: "A Brief Summary of the Indications for Operations on the Stomach," *Medical News*, November 25, 1899.

And now, if you will permit me, I will go over the indications for surgical intervention so far as I can see them. As to the indication for operation in malignant affections, everyone agrees that, so long as there is no specific remedy for cancer and as a cancerous growth can be checked wherever it is accessible to the knife, it should be removed as soon and as radically as possible. But as you have seen before, the diagnosis is not always made at a stage when a radical operation can be performed. It is not the surgeon's; it is not the physician's fault. Nowadays the diagnosis is further advanced, and in many instances a malignant disease of the digestive tract can be earlier recognized. But before a radical operation is performed we should ascertain whether there is no general infection, because it is no use to cut out a growth anywhere if there is a secondary metastasis in the liver, glands, and other organs. The operation would not contribute to lengthening the life of the patient, but if radical operations are not possible, then sometimes palliative operations are feasible and advisable. You all know that in case of cancer of the esophagus or of the cardia, if developed to such a degree that the patient loses in flesh, one can make a palliative operation for a gastric fistula in order to give the patient nourishment. In cancer of the pylorus or cancer of the stomach interfering with the motility, with a great deal of vomiting, a gastroenterostomy can be done, and this is also a palliative operation to prolong life. Such operations should be done when they are necessary, when the patients are in a condition to stand them. If a patient is very old, above seventy, and in a weak condition, I think these operations are not of much use. The patients often die quickly. We must judge by what a patient can stand, and see that he derives some benefit from the operation.

In speaking of these malignant affections I would like to say a few words which do not strictly belong to the subject of to-night, but you will pardon me for mentioning them. A number of physicians consider it necessary to tell a patient that he has a malignant disease, and I think that the reason for this is that they think the patient will agree more quickly to an operative intervention. According to my experience and my feelings, I must say that I do not consider it right in any case to tell a patient that he has a malignant disease or a fatal malady, no matter who the patient is. We physicians try to study nature in a great many ways and learn from it, and we usually find that what nature has arranged is for the best of the organism. Those laws that have been arranged by nature cannot be improved upon. Now nature has arranged that people, when they are sick, should rather have hope that they will still recover; and if they die they pass away not knowing what happens; they are not conscious of it. We must imitate this and try and help nature in overcoming the difficulty of the disease. Our main object in life is to remove suffering, if possible, remove sickness; but if we cannot do so, to give as much comfort to the patients as we can. This principle stands first. There is nothing to upset it. Now I certainly am not in favor of deceiving. The physician should be truthful, but on the other hand he should care for the welfare of the patients. We must tell the persons near them, but not the patients themselves. If we tell the patient he has a cancer we upset him, make him sicker than he is, bring suffering upon himself and the whole family, and when they see him grow weaker and complain, and they cannot give him any encouragement, a great deal of suffering is brought not only to the patient but to the entire environment by this mismanagement. Everything the physician has to do can be arranged without telling the patient that there is a fatal disease. If we know that an operation will be beneficial, we arrange it so that the family knows the exact truth, and the patient is told that a minor operation is necessary, not for a fatal disease but for something that can be overcome. We simply tell him that it is better for him that he should be operated upon. I so often see the great misfortune that such words have brought about, that I thought it well to speak about it.

Coming back again to the indications, I will now take the benign cases and the indications for operations in benign affections. Here we can subdivide the entire group into two large classes. One, in which we have to deal with acute conditions. I will first speak of one condition, also emergency cases, in which an operation is nowadays not done; that is, acute hemorrhage along the digestive tract. Up to about ten years ago surgeons and physicians were divided in opinion on this point. Physicians treated these cases medically; surgeons operated. Nowadays the consensus of opinion is that it is better to treat medically these acute hemorrhages which come on suddenly, and for the reason that the mortality in operative cases is very great. If I am not mistaken, some surgeons mention 50 per cent. mortality, some 40 per cent., others 60 per cent. It is, on the other hand, proven that the mortality in these cases of severe hemorrhages, if they are not much interfered with, is exceptionally small; if treated by rest, medical treatment, and abstention from food, the hemorrage, as a rule, stops after a while.

In my own large experience I think I have had only two deaths from hemorrhage. That is very little because I have seen many during my practice. The same Dr. Kuemmel whom I mentioned before and who has had a large experience—he mentions about one thousand operations—is of exactly the same opinion. He also collected the material of other people and arrived at the conclusion that these cases of hemorrhage should not be operated upon immediately. I am speaking now of these emergency cases. So it has been agreed that all these cases of acute severe hemorrhages should be treated medically.

Now, just the opposite is the case if we have to deal with perforations. Here everybody agrees that the surgeon should operate as early as possible, as soon as the diagnosis of perforation along the digestive tract, stomach, duodenum, or lower intestines is made. We know that these cases usually succumb and that the operation is the more beneficial the quicker it is done, because if you wait long, only twenty-four hours after the perforation, the outlook is already very bad. More than half of the patients die, while the earlier the operation the less is the mortality. The main thing is to think of that and make the diagnosis, and I think in most of these cases of perforation the diagnosis can be made, provided the physician thinks of the possibility of such an occurrence. So all cases of perforation should be operated upon at once. Now the case is very similar in affections of the gall-bladder, pancreas, and appendix. If there is a very severe process, an acute infection, perforation, or a process which leads to perforation, then

surgery should step in. The same holds good with acute intestinal obstruction, provided the diagnosis is made. Here the diagnosis is not so easily made as in real perforation. But if we have sufficient reason to assume that there is such a process present, then the operation is the best thing. Here there is harmony. All physicians and surgeons agree in these acute stages.

Going over to the affections of a chronic nature, these are the cases in which it is sometimes not so easy to mark out the lines where medical treatment and where surgical treatment is indicated. We shall begin again with ulcer of the stomach, chronic ulcer of the stomach. Most physicians think, and this is also my opinion, that ulcer as such should be treated medically, and I think that in a great many cases even cures can be established. Now, in which instances should we make an exception and say that an operation should be performed? In this regard I would make the following suggestions: Hemorrhages which have appeared not only once, but twice, or three times, endangering the life of the patient, due to ulcerations which can be shown not to be at the cardia, and not due to conditions in the esophagus or along the cardia—for these I usually recommend an operation. This operation is gastroenterostomy, provided the ulcer is situated near the pylorus or in the duodenum. Of course, with that operation, gastroenterostomy, you establish a new canal and take away much of the irritation to which the ulcerated surface is subjected by the food, but if the ulcerated area is situated in the cardia, a gastroenterostomy does not bring any change, and you cannot get in there, as a rule, by operations and remove the ulcer. So we have to wait and see what else we can do. But these prophylactic operations in order to prevent a recurrence of the hemorrhages are very beneficial. I have seen a number of such cases where life has been saved and made comfortable just by such a prophylactic operation. The patient feels entirely well. But if not operated upon, we know that in a year or two he may have another hemorrhage and die.

Now we come to another group of chronic conditions in the line of ulcer; that is, where the ulcer leads either to a stricture of the pylorus or to a severe spasm, so that the food cannot pass from the stomach. In former years we could not very well recognize these cases, we could not make a distinct differential diagnosis between a spasm and a benign stricture. Four years ago I would have ascribed a condition in which we found a great deal of food in the morning to a stricture of the pylorus, but I have learned since that a spasm due to an ulcer in the neighborhood leads to exactly the same state without there being anything like a stricture of the pylorus. Nowadays we can differentiate and can make such a diagnosis, and that is a very important point which has come out in recent years. The test which helps most in these cases is the one with the duodenal bucket. If size 23 French passes through the pylorus into the duodenum and the bucket is pulled out in the morning, you will find that that part of the thread which has been in the stomach is white, but the other part, which was in the duodenum, is stained yellow if the pylorus is permeable. Then you know we have been through the pylorus, and if food is still present in the morning you know it is a spasm, not a real stricture. That is one of the most important points of diagnosis. With regard to the cases in which there is stagnation of food in the morning, I formerly thought that in such patients—especially if no improvement could be accomplished by strict diet—an operation should be performed, a gastroenterostomy. But within recent years I have found that by stretching the pylorus, especially if there is no ulcer in the pylorus itself, you can accomplish results which are as good as those brought about by surgery, and I have also found that beginning strictures can be treated in a similar way by stretching. But if we have tried that method without success, it has been done without danger to the patient. Otherwise I would not do it at all. In no case have I seen bad results. But if we see that we cannot get through the pylorus, and the patients lose, then these cases should be operated upon. We should not wait until they are too weak, until they have become skeletons. This is a good plan: We should try to keep the patients in good condition, and if we see that the treatment fails and the diagnosis is correct, and we cannot accomplish anything by stretching, then surgery comes in and helps. We try to make a new opening between the stomach and intestines. That is the group in which there are benign obstructions.

If there is no obstruction and the stomach is empty in the fasting condition, and there is still an ulcer and such severe pains that the life of the patient becomes unbearable, due to that continuous suffering, we try milk diet and rest for the stomach. Then if everything fails, and we wait one or two months and still the same pains continue, then an operation should be performed. Here we cannot promise a definite cure, but we can tell the patient that we will try and operate; the suffering is so great that it justifies the operation. Possibly there is an adhesion. The plan of the operation cannot be decided upon beforehand, only when opening the abdomen can we see what is best to do. But we know what we are about; we operate here to relieve the suffering.

Now we get a little further down, to ulcer of the duodenum. Many physicians think that ulcer of the duodenum should be operated upon at once. I myself am not of that opinion. I think that ulcer of the duodenum offers as good a prognosis as ulcer of the stomach, provided it is treated in a rational way and is treated in time; that means, before complications have developed. I have seen a great number of these ulcers of the duodenum in which I have been able to make a distinct diagnosis, and I think most of them get along all right. The reason for the difference of opinion here is that ulcer of the duodenum gives rise to perforations more frequently than ulcers of the stomach. But, on the other hand, I do not think that an uncomplicated case of ulcer of the duodenum is apt to do that. Only in those cases where the ulcers have advanced very far, and have already led to some complicated symptoms, dilatation of the stomach with continuous hypersecretion, even if there is no ischochymia, always gastric juice in large quantities being present, and pains—these also are cases in which operation should be recommended.

We come now to the gall-bladder and to the chronic affections due to gallstones. Formerly gallstones were treated medically. There are a few selected cases in which operations have been recommended and are still recommended, but recently some surgeons have stated that any gallstones, as soon as the diagnosis is made, should be removed. It is true, a gallstone is a foreign body and does not belong there, and if you could take it out like

a coin from the pocket, it would be all right, but if you have to open up and know that there are patients who cannot stand the operation, you must consider whether it is worth while. I would give the following indications for removing gallstones. I think gallstones which do not molest the patient very much should not be taken out. I know Dr. Ill is of the same opinion. But if there are attacks of severe pains accompanied by fever, indicating some inflamed condition of the gall-bladder, and perhaps some beginning infection, these are cases which should be operated upon. If one or two attacks of a severe nature have taken place with fever, then, I say, an operation is indicated. I recently saw a patient with Dr. Ill, where we both agreed just on that account. There were several attacks with fever, no jaundice, and the patient felt pretty well, but we were of the opinion that an operation should be done in order to prevent a recurrence of these attacks. Now we certainly must leave it to the patients, we cannot force them, but where the attacks are mild, with not much fever or no fever at all, occurring at intervals of a year or two, I do not think that such cases are urgent, or that in every case an operation should be performed.

As to appendicitis—we are going a little further down—this is a condition in which operations in recent years are done much more frequently than formerly. I think correctly so, because if a patient has had one or two attacks, he is liable to have more. We know that some of these attacks may become quite serious, some may lead to perforation, so, on the whole, the operation, even in chronic cases, should be recommended. But we must be sure that there is something there. But this side of the question has also been overdone. A patient who has some disagreeable sensation on the right side, but has never had an attack, comes to the physician. The physician examines him, pressing hard there—the patient goes to another one. He has pains and is now suffering all the time, not so much from his own appendix as on account of fear and anxiety, and ultimately there is nothing left except to operate and take the appendix out. The appendix may be entirely sound, as is very often the case. Again, reflex conditions have been ascribed to the appendix, and there is no doubt that a diseased appendix can cause some reflex disturbance all over the stomach, the intestines, sometimes producing vomiting. But if this is overdone, if the patient complains of such nervous symptoms as nausea, belching, and you operate, and take the appendix out, I think that is a mistake. I know a number of such cases in which there was only a functional gastric disturbance present. The appendix was taken out, but the operation did not help. Every surgeon will know similar cases. That is the reason why we should be careful in making the right diagnosis. When we know that the appendix is really diseased, it should be taken out.

There have been a great many operations done for ptosis of one or the other of the abdominal organs, I think that in recent years these operations have become less frequent. We all know of movable kidneys. Years ago every movable kidney was attached and stitched up. Nowadays it is very rare that a kidney that is prolapsed is treated that way. The same holds good with ptosis of the other organs. I have never been in favor of stitching up these prolapsed organs. The reason for this is that ptosis as such does not give any trouble and the second reason is that if we find an organ prolapsed, kidney, liver, or stomach, it is not one organ alone, but a number of them; there is a weakness of the body. Some enteroptotic conditions are described as congenital. I myself think they can be acquired. Probably more than half the cases are acquired. We can prove that by treating the system, in a number of cases there is a return of the organs to the normal. The patient picks up, gains ten to fifteen pounds, the ptosis disappears. I have watched such cases and described them. If it were a congenital condition, there would not be any possibility of such a change by just putting on flesh. According to my opinion, all of these ptoses should not be operated upon. It is the same with the colon. The *x*-rays have been very helpful in making the diagnosis of these conditions, but, if every little deviation from the normal should be changed, I do not think much good would result. I do not deny it in some cases of enteroptosis complicated with other conditions requiring surgical aid.

The ptosis as such does not require surgical intervention, only some other complicating conditions. A patient with enteroptosis may have something else, a condition which requires operation, but the ptosis of such a prolapsed stomach never requires operative intervention.

I am very grateful to you for letting me speak so long, and I am very glad that surgeons and clinicians have in the last twenty years advanced the field of digestive diseases to such an extent that a great deal of benefit has been brought to the patient, either by medical treatment or by surgical intervention. I think that a great boon to humanity will result if the physicians and surgeons act together in harmony, and try to accomplish the best for the patient, first by medical means; but if this is not sufficient, and an operation seems to be right and good, then it should be performed.

20 East Sixty-third Street.

THE IMMIGRATION OF THE TUBERCULOUS INTO THE UNITED STATES.

A PROBLEM FOR EVERY NATION.*

By S. ADOLPHUS KNOPF, M.D.,

NEW YORK.

PROFESSOR OF MEDICINE, DEPARTMENT OF PHTHISIOTHERAPY OF THE NEW YORK POST-GRADUATE MEDICAL SCHOOL AND HOSPITAL.

In the early part of 1902, when the Treasury Department of the United States, upon the recommendation of the Surgeon-General of the Marine-Hospital Service, decided to classify pulmonary tuberculosis with dangerous contagious diseases, I submitted the following resolutions to the New York Academy of Medicine:

Whereas, The Treasury Department of the United States, upon recommendation of the Surgeon-General of the Marine-Hospital Service, has recently decided to classify pulmonary tuberculosis with dangerous contagious diseases, be it

Resolved, That the New York Academy of Medicine deeply deplores this decison, which is not based either on clinical experience or on scientific experiments.

*Read before the American Academy of Medicine as a part of the symposium, "The Medical Problem of Immigration," at the annual meeting in Atlantic City, June 1, 1912. The paper was intended to be delivered before the Tuberculosis Congress in Rome, April, 1912. Owing to the inability of the author to be present, it was read only by title, but will appear in the transactions of the congress.

Resolved, That the Academy considers the exclusion of non-pauper tuberculous immigrants and consumptive aliens visiting our shores, unwise, inhumane, and contrary to the dictates of justice. Be it further

Resolved, That while the Academy is convinced of the communicabilty of tuberculosis and urges all possible precautions against the spread of the disease occasioned by sputum and tuberculous food, the Academy is opposed to all measures by which needless hardship is imposed upon the consumptive individual, his family, and his physician.

These resolutions were seconded by my beloved and much regretted teacher, the late Prof. Edward G. Janeway, and unanimously adopted at the Academy's regular meeting on February 6, 1902. Copies were sent to the Treasury Department, to the Surgeon-General of the Marine-Hospital Service, and to the medical press. A number of other medical societies passed similar resolutions.

The attitude which I expressed in these resolutions ten years ago toward the immigration of the tuberculous into the United States, I still maintain. I am to-day as strongly opposed as ever to allowing foreign governments to unload their poor and dependent consumptives on these shores. But I am also to-day as then convinced of the injustice, the inhumanity, yes, even the cruelty, of not admitting a well-to-do patient no matter in what stage of the disease, whether he comes as a mere visitor, with the desire to enter a sanatorium, or with the view of settling in some of our salubrious climates.

What would the United States government say if a well-to-do American citizen, whom his physicians had sent to Davos Platz, the Riviera, or the Black Forest, for the purpose of regaining his health, should be returned by the Swiss, French, or German government as an undesirable alien? That none of these governments have retaliated is a wonder. Recently a wealthy Englishman was detained on Ellis Island because of tuberculosis and it required considerable diplomatic cabling between London and Washington to have this refined, cultured, and well-to-do gentleman released and permitted to visit his friends in this country.

I mention this case merely to show you the unfairness of the Treasury Department's decison regarding tuberculosis. This decision is not only unfair but thoroughly unscientific; there is no basis for classing tuberculosis among the dangerous contagious diseases, such as smallpox, for example.

What modern sanitarian, philanthropist, or general practitioner would dare to make such a classification! Phthisiophobia, that is to say the exaggerated fear of the presence of a consumptive, has never received such an impetus as it secured from the Surgeon-General's recommendation. The word "contagion" comes from the Latin *contingere*, to touch, and surely, to the best knowledge of clinicians and experimenters, the mere touch of the consumptive has never yet given rise to tuberculosis in another.

It is possible that among my hearers there may be some one who has read the statement recently made by Poncet of Paris to the effect that the perspiration of the consumptive, that is to say the liquid matter secreted by the sweat glands, contains the tubercle bacilli. Thus far it has been impossible even to find the tubercle bacilli in the circulatory system, and Rosenberger's experiments, tending to show that bacilli can be found in the circulating blood of the tuberculous could not be corroborated by our most careful bacteriologists. The same must be said of Poncet's experiments. There is thus far no absolute bacteriological or clinical evidence of the presence of bacilli in the perspiration of phthisical patients. But even granting that Poncet's statement should be true, an infection from the cutaneous surface of the tuberculous patient by the mere touch is somewhat difficult to conceive of. A considerable quantity of the perspired fluid would have to find entrance into the digestive tract or enter the system by the inoculation process. The inoculation method could only be conceivable in the case that the supposedly infectious perspiration came in contact with an open wound. However, as everybody knows, the ordinary hygiene of the skin and the proper disposal of the soiled personal and bed linen of the patient would suffice to do away with even this possible source of infection. Such statements as that of Poncet, which after its announcement in Paris was cabled to our daily papers and printed broadcast, have invariably the unfortunate tendency to increase the, alas, already so widespread phthisiophobia. The lot of the average consumptive is hard enough as it is without increasing the unjustified prejudice against him.

We are preaching every day that to associate with a careful, clean, and conscientious consumptive is perfectly safe; that it requires prolonged exposure, absolute inhalation, ingestion, or inoculation of tubercle bacilli in order to produce the disease. Surely, no one can deny that the New York Health Department, under the leadership of Dr. Hermann M. Biggs, has done most efficacious work in the municipal control of tuberculosis. Yet, from the very beginning of our antituberculosis crusade, tuberculosis has been classed with communicable and not with contagious diseases.

In defending a more scientific and less oppressive attitude toward the tuberculous, poor or rich, as stated in the resolutions above referred to, I nevertheless maintain that it is absolutely just for any government to refuse to be burdened with the tuberculous poor of another country. Instead of returning the tuberculous immigrant we should prevent him from coming and so save him hardships and disappointments. Although a large number of tuberculous immigrants are returned, very many of them pass unnoticed. It is no reflection on the ability of the medical men at Ellis Island when I say they do not by any means detect all the tuberculous invalids, and that they diagnose only those who show very strong outward signs of tuberculosis. How should the men stationed at Ellis Island be able to detect at a glance a tuberculous invalid in a first or second stage, when it often takes an expert a half or three-quarters of an hour before he can arrive at a definite conclusion, and that after a careful examination in the quiet of his office?

The examining physicians on Ellis Island, because there are only a small number of them, can devote but very few minutes to each of the thousands of immigrants which pass before them weekly for inspection. The excellent appearance of some tuberculous immigrants, because of a ten days' voyage, invigorating sea air, good food and rest, has been to my mind in many instances the reason of the non-discovery of invalids in quite advanced stages. When they have been admitted to this country, a few weeks of hard work in the ditches or in the sweatshops, with nights spent in overcrowded tenements or unclean or crowded lodging houses,

usually suffice to bring about an exacerbation of the disease. The strain, the struggle for life, the new environments, the unaccustomed food, and perhaps also some nostalgia and disappointment, likewise help to turn, in a very short time, an incipient case into an invalid with open tuberculosis, and thus a new center of infection is formed. All this accounts for the great prevalence of tuberculosis among the laboring classes who have come to us from foreign shores only relatively recently. A goodly number of them return to their native land, particularly the Italians, when they realize that their disease does not permit them to struggle as they must if they wish to remain here. I have been told that there are villages in Italy where tuberculosis has become most prevalent because of the return of those emgirants and because their methods of life result in infection of others.

Some return voluntarily to their native homes, but you perhaps are not aware that we have a deportation law* which, as a good American, I am sorry to admit, seems unnecessarily harsh and unjustified, founded as it is on an unscientific basis. It is to the effect that any immigrant who has become a public charge in a hospital or other institution and is found to be tuberculous, can be deported even after a residence of three years if in the opinion of the examining physician he had contracted the disease prior to his landing on these shores. During the year of 1911, about 1,500 of such tuberculous aliens were referred to the State Board of Charities for deportation. On the strength of this law the deportation is done at State expense.

With all due respect to the framers of this law, I believe it absolutely imposible for the most skilled diagnostician, upon examination of a tuberculous chest, to state the duration of the disease with even approximate certainty. A declaration that an individual had tuberculosis for a definite period of time, based on a physical examination or even on the history given by the patient, must necessarily be guesswork. I know of a case of deportation which was declared legal upon the statement of a young physican to whom a tuberculous patient had admitted that he remembered having had a cough a little less than three years ago, prior to his coming to this country.

How many thousands of us have a latent tuberculosis which has never been discovered and which may never cause us any trouble if we continue to live carefully and hygienically! Should we, however, be submitted suddenly to a life of hard physical struggle, be transported into unhygienic environments, be underfed and badly housed, the development of the tuberculous trouble would be almost certain to take place, and in a much shorter time than three years. One must have witnessed such a deportation in order to comprehend its meaning, particularly when one is not at all certain that the case might not be one which developed right here because of hard work and privation.

And now, to the most important question of all: What can be done to prevent tuberculous invalids, likely to become a burden to the community, from entering the United States, only, perhaps, to be deported after a sojourn of one, two, or three years? Tuberculosis must be considered a world problem, a problem for every civilized nation. Let European governments understand that they must take care of their own tuberculous people as we take care of ours, and that in the end, by united efforts, it may be possible to conquer the white plague in all countries.

Every prospective emigrant should be examined to ascertain his freedom from tuberculosis by two competent medical men, one appointed by his home government and one by the steamship company which is to transport him to this country. A certificate showing freedom from tuberculosis, signed by these two medical men, should be in the possession of every emigrant wishing to come to these shores. An individual discovered to be afflicted with this disease should be returned to the care of the authorities of the city or village from which he came with the diagnosis and recommendation for treatment. Exceptions can and should be made in the case of an individual with ample means who is simply visiting, or seeking to recuperate his health by a change of climate, or desirous to enter an American sanatorium for treatment. To avoid misuse or fraudulent use of the physician's certificate, a photograph should be taken at the time of the examination in the home port, and attached to the certificate. Or, since a photograph could be removed and another one substituted on the certificate, I even go so far as to suggest that it would be well to have the finger print taken for identification. This is the most accurate and scientific method known for such purposes.

The laws relating to deportation should be changed to the effect that if the holder of any such certificate, or any immigrant develops tuberculosis within six months to one year from the date of his arrival here and becomes a charge to the community, he shall be deported to the port whence he came. The expenses for this deportation should be borne by the steamship company who brought the immigrant to our shores, and not by the State Board of Charities. Whether, to avoid possible mistakes in diagnosis, European governments, in cooperation with the steamship companies, should desire to keep doubtful cases under observation a few weeks or increase the examining boards by one or two more experienced diagnosticians, is a matter for the foreign governments to decide. There is no question but that the more careful these examinations are at foreign ports, the fewer the cases of deportation that will ensue.

The suggestion has been made that physicians of the Public Health and Marine-Hospital Service be stationed at the important points of departure in Europe so that each emigrant can be thoroughly examined, and those entitled to a clean bill of health be allowed to take passage. I question whether the international law would sanction such procedure. Secondly, there are too many minor points from which emigrants could take passage and escape the United States Government physician's examination. Of greater value would it be for foreign governments and steamship companies to make it known that if a man expects to stay in the United States he must not become a public charge; that he must be physically, morally, and mentally sound. With such publicity and the additional examination in the manner above outlined, the United States Government will be less burdened with the care of tuberculous aliens who, uncared for, are a constant menace to the community.

An interesting suggestion in relation to this subject was made at the recent International Tuberculosis Congress in Rome by Dr. Antonio Stella of New York. It was to the effect that every emigrant should be insured against tuberculosis, the

*Immigration Act of February 20, 1907.

cost of insurance to be added to the price of the steamship ticket, the policy entitling the bearer to return transportation and free treatment in a sanatorium, in the event of his contracting tuberculosis within a specified time. This suggestion was presented in the form of a resolution, which was unanimously adopted, but whether or not it results in any immediate or definite action, no country should continue to have uncared for tuberculous patients.

For the uncared for, the untrained, and untreated tuberculous are sure to propagate the disease among their kin and neighbors, and procreate a tuberculously predisposed race. The efforts of the medical profession and authorities in some of our States are in the right direction when they enact and enforce laws which forbid the consumptive from contracting marriage and when they declare that no tuberculous patient who is careless either knowingly or unknowingly, or is unable to take care of himself, should be allowed at liberty. It would be well for some of the foreign governments to establish similar laws and regulations. I go so far even as to recommend sterilization (vasectomy for the male and ligation of the Fallopian tubes for the female) if these individuals insist upon marrying while ill with a directly or indirectly transmissible disease such as tuberculosis. I believe in using the most humane means possible in all our efforts to suppress tuberculosis, but we should enforce them not merely in self-defense but in the interest of foreign governments themselves. I plead that they should take care of their tuberculous poor, educate, train, and treat them and heal those who can be healed. The hopelessly ill should be segregated to prevent them from infecting others and from procreating. This should be not merely an American or a national, but the international policy of every civilized nation. If any government will cure its curable patients and make of them strong, vigorous, self-supporting citizens, as we have been fortunate enough to do with many of our tuberculous invalids, then will we welcome these sane and sound people to our shores and try to make good Americans of them.

16 West Ninety-fifth Street.

ANESTHESIA IN SUBMUCOUS RESECTION OF THE SEPTUM NASI.

By JOHN ALLAN, M.D., B.Ch., D.P.H.,

LIVERPOOL, ENGLAND.

Within recent years the operation of submucous resection of the nasal septum has been widely practised for a variety of conditions. In discussing the question of operation not the least important point is the consideration of what form of anesthesia should be employed. The operation may be done under local anesthesia, or combined local and general anesthesia may be used. The exhibition of a general anesthesia only is seldom practised. At the outset I may say that I consider that the great majority of cases can be operated on under local anesthesia. Of various methods of inducing local anesthesia three may be mentioned: (1) Packing the nasal fossæ with gauze which has been soaked in a solution of the anesthetic; (2) injection under the mucous membrane or mucoperiosteum covering the septum nasi of a weak solution of the anesthetic; and (3) Freer's method.

The first is the method I invariably employ, and up to the present it has given me entire satisfaction. About half an hour before the operation the nasal fossæ are packed with gauze which has been soaked in a 20 per cent. solution of cocaine hydrochloride and a 1 in 4,000 solution of adrenalin chloride. When the nose is being thus packed it is convenient to have the patient seated in a chair, but as soon as this has been done, he or she ought to lie down on a couch and rest quietly until the time of operation. This simple precaution will serve to prevent symptoms of faintness or collapse. On the one or two occasions in which I have seen symptoms of faintness supervene the patients had foolishly tried to maintain the erect posture. Another small point, attention to which may also help to prevent untoward symptoms, may be mentioned, and that is the gauze should not be too wet—if one might say so, the gauze should not be oversaturated. The gauze is allowed to soak up as much of the cocaine-adrenalin solution as it conveniently can, then any superfluous quantity is got rid of either by gentle pressure or by shaking. The packing is now proceeded with. If the gauze is so wet that the solution drips from it, when the patient assumes the recumbent attitude some of the solution is sure to trickle down the back of the throat and be swallowed. It is not improbable that in some cases untoward symptoms may arise from this cause which is quite an avoidable one. About half an hour after the nose has been packed in this manner one ought to be able to proceed with the operation, the two essential points accruing to the cocaine-adrenalin combination having been obtained, namely, anesthesia of the part and a bloodless field for operation. The method just described adequately fulfills these conditions.

With regard to the first, adequate anesthesia can in my opinion be obtained. I have carefully cross-examined several patients subsequent to the operation and I have found that any who do make complaints complain more of the uncomfortable feeling of having something done than of actual pain. They are generally quite quiet until one reaches the stage when bits of the septum (cartilaginous or bony) are being removed with cutting forceps. I am certain that at this stage the sense of hearing has much to do with the upsetting of the patient's equilibrium. It is probably just a little alarming to hear the chipping off of pieces of cartilage or bone from the septum of the nose, and the excellent conducting power of bone tends to give an exaggerated idea of any sounds thus made. A little persuasion will generally suffice to calm the patient.

As to the second point, namely, a bloodless field for operation, the cocaine-adrenalin combination applied in the manner indicated is quite effective. Seldom do we find that operation is interfered with by much bleeding. There are, however, one or two practical hints that should be noted if one desires to get the fullest benefit from this solution. In the first place too long a time should not elapse after the packing of the nose before the operation is done. In my opinon about half an hour's application of the cocaine-adrenalin gauze is the best. If there is a longer interval, say an hour or so, there will almost certainly be some trouble with the bleeding. If the delay is still longer the tendency to bleed will be much greater and the operation is considerably interfered with. Another important point is that the nose must really be packed. It is not enough to take a strip of gauze soaked in the solution and push it into the nose with a probe. It is absolutely necessary (if one desires to obtain the maximum anesthetic and hemostatic effect of the

solution) to see that the gauze is actually applied to and in contact with the mucoperiosteum of the septum and that the nasal fossæ are firmly packed. When one remembers that the septum may present all kinds of deviations it can readily be inferred that the accurate application of the gauze plug may not be an easy matter. The ideal method is to pack with the aid of vision, the nasal fossæ being well illuminated by light reflected from a forehead mirror. As a rule the person who packs the nose trusts to the sense of touch, and with a little care the septal bends and crooks can be fairly accurately followed. In the cases which have come under my notice it has only been necessary to put off the operation because of hemorrhage in one case, and here both the above points of technique had played a part. Through unforeseen circumstances the operation could not be started until quite two hours after the gauze pack had been inserted, and the so-called packing had been done by a novice, with the result that it had not been efficiently performed. As soon as the incision was made into the septal mucous membrane hemorrhage began, and there was a continuous ooze which rendered impossible any clear view of the site of operation. The application of adrenalin chloride solution (1 in 1,000) had no effect on this oozing. The operation was therefore postponed, but a few days later it was carried out without the slightest hitch or difficulty, care, of course, being taken to avoid faulty technique.

In the case just recorded it was also evident on the first occasion that the anesthetic effect was passing off, for the patient complained of pain directly the incision through the mucous membrane was made. This leads me to point out that the anesthetic effect of the cocaine does not last indefinitely, and it therefore behooves one to operate after a reasonable interval, and not to delay too long, otherwise the operation will not be painless. Remarks of a similar nature hold good as regards starting the operation too soon. The success of local anesthesia depends on sufficient time being allowed for the action of the drug to take place. Here patience is a virtue which leads to success. If the submucous resection operation be proceeded with too soon it will be found that anesthesia is imperfect and also that hemorrhage is fairly brisk. With the packing method of local anesthesia the operation should not be begun for at least twenty minutes after packing, and, as has been stated above, a half hour interval between packing and operation is the best in the great majority of cases. It is almost superfluous to mention that the best results are obtained with freshly made solutions. Old solutions, especially if they have been exposed to light, undergo decomposition, and they are inefficient for local anesthetic purposes.

In addition to the method just described in some detail there are two other methods for local anesthetization of the nasal cavity which find favor in certain quarters. One is the infiltration method, by which cocaine-adrenalin solution is injected into and under the mucoperiosteum of the nasal septum. This method has recently been enthusiastically praised by Seymour Jones (*British Medical Journal*, 1912, vol. 1, page 421). The technique adopted by him is rather elaborate. Both nasal passages are sprayed with a 20 per cent. solution of cocaine hydrochloride to which an equal quantity of 1 in 1,000 adrenalin chloride has been added. Next both sides of the septum are thoroughly rubbed with cotton wool mounted on wool carriers soaked in cocaine-hydrochloride 20 per cent. and adrenalin-chloride 1 in 1,000, equal parts. After, the injection is made. A solution of 0.40 cocaine-hydrochloride, 0.60 common salt, 200 distilled water (equal to 1/5 per cent. of cocaine hypochloride in normal saline), to which are added two drops adrenalin-chloride (1 in 1,000) to the cubic centimeter, is the solution used for injection. The author then details the exact technique of injection. Certain symptoms of circulatory disturbance usually supervene. "The patient becomes blanched, beads of perspiration exude, the heart thumps excessively, and occasionally, in fatty subjects and persons addicted to much smoking, it beats quite irregularly, intermitting one now and again. Others complain of intense pain in the lower part of the back and abdomen. I am inclined to believe this is due to great and tense pulsation of the abdominal aorta. A good many have headaches which last during the operation or supervene some hours after." These symptoms are, in the author's opinion, due to the action of the adrenalin, which causes a rise of peripheral pressure and stimulates the heart. Later there may be a fall of blood pressure and the patient partially collapses, due possibly to the late absorption of cocaine. In view of these symptoms it seems to me that the position taken up by this writer is not a very sound one. In the method which was first described untoward symptoms are conspicuous by their absence, and any symptoms which I have noticed have been extremely mild in comparison with the above. Attention to the points noted above does much to eliminate any ill effects during anesthetization by packing. In addition, the only bad effect which has occurred in cases observed by me has been slight headache, which is of short duration, and this was only complained of in a few cases.

Besides these symptoms, which appear to occur in almost every case anesthetized by the infiltration method, Jones reports three cases in which, during combined general and local anesthesia, alarming syncopal symptoms arose. The cases are as follows: "Case I.—A pale and anemic woman with a feeble circulation was fairly deeply anesthetized before the submucous injection was thrown in. About a minute after this the patient suddenly became intensely pallid, respiration ceased, and the pupils suddenly dilated. She was promptly inverted, and after about twenty or thirty seconds of anxious waiting she gave a sighing respiration, then a second, and finally recommenced breathing. Artificial respiration was not resorted to. Case II—This case occurred in a woman about a month later almost in the same way, except that the untoward symptoms appeared earlier. Inversion restored her breathing and the operation was completed. Case III—This was a case of endonasal operation for antral suppuration. The patient was rather deeply anesthetized, and I injected ½ c.c. of normal saline with a few drops of adrenalin (1 in 1,000) added into the anterior end of the inferior turbinate with the object of resecting this bloodlessly. Within ten seconds respiration ceased, the pulse was suppressed, and the pupils widely dilated. She was inverted immediately, and respiration gradually restored, the pulse becoming stronger by slow degrees." For my part, I have never made use of the injection method in the submucous operation, but a short time ago I had a rather alarming experience with a case in which some adrenalin solution was injected into the anterior ends of the inferior

turbinates. I have elsewhere (*The Prescriber*, April, 1912), placed the case on record, but as the subject is one of importance a short account may be here given. The case was that of a pale, anemic youth who came under observation for nasal obstruction for which turbinectomy and adenectomy were done. Combined local and general anesthesia was employed. Just before starting the operation a few minims of adrenalin solution (1 in 1,000) were injected into each inferior turbinate. The boy suddenly collapsed and exhibited all the signs of a severe syncopal attack which, at first glance, appeared fatal. Respiration was suspended, but the pulse (very rapid and small) could be felt at the wrist and, on auscultation, the heart sounds were easily heard. With artificial respiration and judicious stimulation gradual recovery took place, but it was almost five minutes before the danger stage was considered past. There were no further developments, and next day the boy was up and about as if nothing had happened. After this experience I have not cared to repeat the experiment. What causes the syncope one can only surmise. Jones suggests three possible explanations, anemia of the bulb, toxic action on the respiratory center, and spasm of the coronary arteries. It seems to me that the first affords quite a feasible explanation. At the German Congress of Internal Medicine last year Hirsch of Berlin pointed out that by injecting adrenalin into various organs in animals a rapid fall of temperature was produced (*Lancet*, June 10, 1911). Now this marked fall of body temperature can hardly be adequately explained by simple constriction of the peripheral vessels. Is it not likely that there is produced anemia of the bulb? If that is so, it is probable that the heat regulating center, which lies in the medulla oblongata, is interfered with. If that hypothesis be correct, one might further argue that other centers situated in that region, to wit, the respiratory and circulatory centers, would also be affected, resulting in the alarming train of symptoms already noted. Be the explanation what it may, there seems little doubt that such symptoms are directly attributable to the injection of adrenalin, and it is but right that a word of warning should be given in this connection.

Some workers who favor local anesthesia by injection substitute novocaine for cocaine. Bourgeois advocates this method (*Medical Press and Circular*, February 8, 1911), which is described as follows: "He first introduces gauze steeped in a solution of cocaine (1 in 30) and leaves it in contact five minutes. Then he injects a solution of novocaine (1 in 100) to which a few drops of a solution of adrenalin are added. This injection is limited to the zone of operation and begins at the furthest end of the nasal fossa. Immediately after the injection the fossa is plugged once more with the cocaine solution (1 in 30) and at the end of ten minutes insensibility is complete. The slight toxicity of novocaine renders secondary accidents almost impossible, while vasodilatation being much reduced, secondary hemorrhage is exceedingly rare."

Another method of local anesthetization in nasal cases is that associated with the name of Freer. Here crystals of cocaine-hydrochloride are directly rubbed up the mucous membrane of the nasal septum. This method is strongly recommended by J. Walker Wood (*British Medical Journal*, 1911, II. p. 1059), who proceeds as follows: "A few crystals of cocaine-hydrochlorate are picked up with a small cotton-wool mop saturated with adrenalin-chloride (1 in 1000), and gently rubbed into the mucous membrane of the septum on both sides. Three or four applications, extending over a period of about ten minutes, are usually sufficient to produce a perfect anesthesia." Adam of Hamilton, Scotland, has recently in a short note testified to the value of Freer's method (*British Medical Journal*, 1912, I, page 607). I fail to see that this has any special advantages over the method of packing, with the possible exception that one can control the dosage of the drug given. But does it not really amount to the application of a concentrated solution? The effect of the friction will be to stimulate secretion and the cocaine will undoubtedly be dissolved. Apparently in this method the mucous membrane of the septum is only anesthesized. The mucous lining of the alæ nasi is left untouched, and though there is no cutting in these parts it is surely hardly of advantage to allow them to remain sensitive.

It has already been pointed out that local anesthesia is the method of choice for the operation of submucous resection of the nasal septum, but in certain cases a combination of general and local anesthesia is necessary. The administration of the general anesthetic is carried out in the usual way. The preparation of the patient, the actual exhibition of the anesthetic, and the after-effects in no way markedly differ from what hold good in any general anesthetic case, and it is unnecessary to give details of such. The anesthetic used by me is either chloroform or a mixture of chloroform and ether. The anesthesia produced need not be deep surgical anesthesia. All that is required is sufficient anesthesia to dull the senses and abolish as far as posible reflex action. When the patient has been adequately anesthesized, an attempt may be made to keep up anesthesia by pumping the anesthetic through a Junker's tube placed in the mouth, but my experience has been that in many cases this does not act well.

There are several disadvantages in employing general anesthesia in this operation, and perhaps the greatest disadvantage is the bleeding. I have invariably found that when a general anesthetic is given hemorrhage is always more marked, and consequently operative measures are interfered with and the operation takes longer. Then there may of course be nausea and vomiting during the operation, whilst post-anesthetic vomiting frequently occurs. Other after symptoms such as headaches are more severe and more often met with when a general anesthetic has been employed. When the patient is under the influence of chloroform he is naturally unable to afford the surgeon any active assistance or cooperation, a valuable asset which can be realized when local anesthesia has been utilized. It has also to be remembered that this operation is sometimes not one of actual necessity, but is frequently undertaken to relieve some minor symptom. To subject any patient to the dangers of general anesthesia under such circumstances does not seem to me to be justifiable if local anesthesia could possibly suffice, and that there is a certain risk with a general anesthetic in every case must be admitted. However, in some a general anesthetic has to be given, for example, in the case of children and extremely nervous individuals. It is to a large extent a matter of temperament, and a child will often submit to the operation when an adult would make a great fuss. In looking over

some of my notes I find that of the last 84 cases which have claimed my attention 68 were done under local anesthesia, while in 16 combined local and general anesthesia was employed. Of these 16 cases 5 were children, and in several of the others further operative measures were being performed, such as adenectomy, turbinectomy, etc., so that there was greater need of general anesthesia. In only one case have I found it necessary to resort to general anesthesia after the operation has been partly done under local anesthesia, and in this case I believe the operation could have been concluded without the exhibition of chloroform by the exercise of a little persuasive exhortation. The case was rather a difficult one and necessitated much chiseling and punching of bone in the region of the maxillary crest and vomer. It was of traumatic origin resulting from a broken nose some years previously. As the case in question was that of a boy of 15 it was thought that the manipulations necessary for the removal of the bone would put too great a strain on the patient. The earlier procedures in this case had been carried out without the slightest difficulty. The youngest patient in this series in whom the operation was done under local anesthesia was a boy of 13—while in several boys and girls 14 and 15 years of age this form of anesthesia sufficed.

From the above considerations I am convinced that in the majority of cases no general anesthetic is required and that cocaine-adrenatin solution applied locally affords the necessary anesthesia. As to the mode of application I think the method first described is the best, and if properly carried out with every precaution to points of technique it should not fail. The advantages pertaining to it may be summed up as follows: (1) Efficient anesthesia and effective control of hemorrhage; (2) ease of application; and (3) freedom from ill-effects during or after operation.

VISUAL ACUITY AND THE MONTESSORI METHOD OF INSTRUCTING CHILDREN.

By SAMUEL HORTON BROWN, M. D.,

PHILADELPHIA.

Among the several recently devised methods of kindergarten instruction that have been brought to the notice of educators, none seems to have attracted the attention of the general public to the extent as has that employed by Dottoressa Maria Montessori in the several special schools in Rome, which bear her name. The system has been written about extensively in the technical journals and in the lay press, and discussed at great length. The reason of this attention is that Dottoressa Montessori claims to have devised a process whereby the pupils spontaneously break forth into reading and writing, "an explosion into writing," as she herself expresses it. Whether this is accomplished or not is a subject for the educators to determine, but since the method bids fair to be adopted in many of the lower schools and kindergartens, it is our duty as physicians to determine in how far it is influenced by physical and pathological factors.

It is therefore necessary to review briefly some of the prominent features of this system. In the first place it is stated that no coercion or even persuasion is employed; the child expresses himself only when he feels able to do so, and the means of expression is mastered through a series of toys and games, especially devised to develop the physical faculties in such a way that they respond quickly and accurately to the demands of the mind. This is similar in principle to other forms of kindergarten work, but different in technique, if the word may be so employed.

Madame Montessori began her life work as a physician, being said to be the first woman to receive a medical degree from the University of Rome. She occupied several positions in connection with the Italian Department of Education, having to do with the instruction of feeble-minded and defective children. It was while working along these lines that she evolved this system for educating normal as well as deficient children.

In Rome, Houses of Childhood, as they are called, have been built to accommodate this system and the children are oftentimes in the "Case dei Bambini" for quite a long period before any real lessons are assigned them. They are allowed to take part in any games they may elect, and to familiarize themselves gradually with their surroundings. The regulations insist that the child be neat and clean in person and in dress. When the children present themselves at school they are quietly inspected and their attention is gently called to any untidiness, the idea being to encourage the children to observe the tidiness of one another, but without deprecatory remarks, and by this means they acquire a habit of observing themselves. The Italian temperament doubtless permits this feature of the system to be absorbed and successfully carried out, but it is questionable whether American children having acquired the faculty of criticism could use it without the deprecatory remarks so much deplored by Madame Montessori.

The children are permitted to dabble in the water, but in such a way that washing of the hands and face are accomplished before the child is aware of the serious nature of the pastime. They are made to aid each other in buttoning their aprons. Light graduated exercises are employed to develop coordination. The free rhythm work as used in the American system is elaborated upon in this method. In addition to the songs, marches, and games the children learn to greet one another politely, and to sit properly and composedly in their chairs. They are taught to rise and reseat themselves gracefully and to move about the room with security and ease. The tables and chairs are not fastened to the floor in order to teach the children that it is necessary to move carefully among the furniture. Wherever possible, Madame favors the serving of school luncheons and takes advantage of such service to instruct the youngsters in the setting of the table, the serving of the meal, the washing of the dishes, and other similar duties, which the children soon learn to perform with considerable enjoyment.

Each morning the names of the qualified waitresses, dishwashers, etc., are placed upon a tablet and those who have learned to read announce these names to the others. When a child is able to carry safely a glass or a plate, this child is eligible for the position of waitress. As waiter or waitress the child develops gross coordination, which is further developed by the proper use of knives, forks, spoons and brooms.

Anthropological measurements are taken of the children in all these Case dei Bambini at regular intervals, and records are kept for comparison under the supervision of a physician. The birthday of the child is selected for this purpose. The stature is taken once a month on the date correspond-

ing to the birthday. The weight is taken once a week on the corresponding day, and once a year other details are recorded on the birthday. In this way the child is certain to become familiar with its birthday.

When the child has begun to feel perfectly at home amidst the surroundings and routine described the so-called Exercises of Practical Life are added to the course. Perhaps the introduction to these will consist of a number of light wooden embroidery frames which have pieces of fabric and other material fastened along their sides. These pieces are sometimes of leather, again of linen or dress material, and they may be hooked, laced, buttoned, or tied together, according to the arrangement of the particular squares. This aids in developing coordination and affords great interest to the youngster. This also enables the child to tie his own shoestrings and to button his own frock.

Following the use of the squares, the cylinders, the graduated rectangular blocks called the "Big Stair," the series of rods called the "Long Stair," and the graduated cubes called the "Tower," are employed. Madame Montessori refers to these as "a first floor in the education of the senses."

The cylinders are ten in number, and are fitted into a case such as is used for holding weights. These usually come in sets of three, although occasionally in sets of four. In the first set the pieces are all of equal length, but graduated in diameter; in the second, they are all of the same diameter, but graduated in length; in the third, both length and diameter vary, the cylindrical form alone remaining constant. Although the cylinders are of solid wood, each armed with a little brass button at the top for taking them out and putting them back into the holes of the case, the entire apparatus may be carried by the youngest child in the school.

The object of this series of cylinders is to cultivate the instinct that children have for arranging small objects in rows. In the practical application of the cylinders they are taken out of their case by the child and mixed up, after which he endeavors to replace them in their respective places.

The succeeding lesson is that having to do with the construction of the "Big Stair" out of the graduated rectangular blocks, which are made comparatively large, as the child depends upon its visual perception in this exercise to guide it. Here the form sense is brought into use, and if the child is the subject of any refraction errors it will be shown by the slow manner in which the child perfects itself in the exercise.

The next lesson in which the series of rods is used is called the "Long Stair." The children at first regard it as a game of blocks, but soon it forms the basis for lessons in counting, and through them elementary arithmetic is taught. The object of these exercises is that the child may learn to distinguish differences of form and dimension through the touch as well as by sight.

In her original work among defective children, Madame Montessori was greatly impressed by the acuity and delicacy of the sense of touch in children under seven years of age. After this age it undergoes a natural decline and is not so amenable to education as formerly. It is upon this fact that the larger part of the Montessori method depends; consequently the first exercises have to do with gross tactile impressions.

After the children pass through the hand-washing and bowl-washing stage, they are given a series of exercises in order to lead them to discriminate quickly and accurately between rough and smooth surfaces. The apparatus consists of a set of tablets and cards on which are mounted strips of rough and smooth paper. The teacher passes the fingers of the child over the rough and the smooth strips, indicating each by name as the fingers are drawn across it. The teacher then requests that either the rough or the smooth be given her by the pupil, in order to determine if the child has been able to appreciate and remember the difference. This exercise is also performed with the child blindfolded.

This simple exercise is elaborated upon until the child is able to distinguish, blindfolded, velvet, several qualities of silk, several grades of woolen goods, linen, cotton, and other fabrics. These exercises begin with two squares of strongly contrasting fabrics; the child is directed to feel each and then to match the test squares with the squares of similar fabric taken from a pile of assorted squares of fabric. The quality is first learned by the child and the names are learned later. According to all reports the children seem to enjoy this exercise immensely.

Exercises devised to teach the children to distinguish differences in weight are also a part of the system. The pupil first takes in each hand tablets of different weights and balances them upon his palms until he appreciates the difference. He is then blindfolded and allowed to select from a pile of weights those that appear to him to be of the same weight.

Following close upon the exercise to determine the values of rough and smooth surfaces, the system prescribes that the letters of the alphabet be cut out of metal or out of sandpaper. In the first instance the geometrical form of the letter may be cut out of the metal and the child directed to fill it in with crayon until familiar with the shape and with the name of the letter. In the case of the sandpaper letters, the letter is cut out of the rough paper and mounted on a glazed cardboard. The letter is shown to the child and named; then the child is made to trace the rough letter with the fingers, as in writing, the sound of the letter being given to the child at the same time. The movable alphabet, having the vowels in pink and the consonants in blue, is next used to educate the sense of sight as to the geometrical form of the letters.

Owing to the phonetic character of the spelling in the Italian language, these children eventually assemble these letters of their own accord and spontaneously break into writing words. Reading is brought about in the same way; a word is placed upon the board and the child analyzes it, calling the pronunciation of each letter as it appears to him, and the pupil is made to assemble these sounds so that a spoken word is formed.

The instruction in elementary colors is similar to that of Sequin, used for defective children; first the teacher shows the child the object and speaks the name of its color distinctly. Secondly, the name of the color is announced and the child is requested to give the object having that color to the teacher. Thirdly, the teacher points to the object and then requires the child to pronounce the name of its color.

Having briefly reviewed some of the more prominent features of Madame Montessori's method of instructing children, it is pertinent to inquire as to what extent a system of this character would in-

terest ophthalmologists, physicians, and those having to do with child culture institutions. Those of us who have had to do with school children of the larger cities are impressed with the great number of cases of defective vision in the children, due to errors of refraction and faulty development, and cannot but feel that the present system of elementary education (and also the advanced) demands too much from the ocular structures. In other words, it requires that the entire visual and psychovisual apparatus be absolutely normal before it is possible that any progress can be made in the child's education.

In accordance with this, kindergartners are instructed at great length in psychology, most of which has to do with physiological optics and ocular physiology. The exercises for the children necessarily have to do to a large extent with visual perceptions, and in so far as the vision is defective, in just so far is the child's education affected. The educators' responsibility is shifted to the ophthalmologist, who does his best to restore or rather develop normal vision in these children. Despite our very best efforts, and even in favorable cases, it may be a year or more before the visual units of the retina and visual tract are properly developed, during which time, of course, the presence of the tactile sense is ignored and the child's education is necessarily at a standstill. If, however, the child be so unfortunate as to be deaf, dumb, and blind, he or she will then become the inmate of an institution where this tactile sense will be developed, and his or her education will surpass that of many of these children who have only comparatively slight visual defects.

It would seem that if the wonderful results of Madame Montessori were accomplished in the children of the slums in Rome, where certainly it was impossible to prescribe glasses by the wholesale for the children, there would be some field for the application of the system here. While there can be no objection raised as to the caring for the sight of the school children as we are now doing in this country, it would appear to be along the line of rational progress to supplement our system of education by any innovations that would remove the strain from the eyes and that would enlist the activity of other special senses which are now allowed to remain latent. We are all familiar with the current hypercritical advice concerning the height of the desk, the type, the paper, the books, etc., and we have failed to note any material improvement in conditions, or even in the books which are giving the advice.

In making the comments and criticisms it is understood that the Montessori method does not stand alone in the character of its exercises or the results obtained. There are numerous American methods employed in different sections of the United States which are producing as wonderful benefits, but the bulk of the lay public, as well as the educators, have not appreciated the fact that it is possible to educate normal, as well as abnormal children, by means of the tactile sense as well as the visual sense. Systems such as Madame Montessori has devised, however, do not exact any very great strain upon the eyes, and thereby such systems enable us properly to develop the visual acuity in children who may be suffering from errors of refraction and undeveloped retinas.

1901 Mt. Vernon Street.

A CONTRIBUTION TO THE STUDY OF FOLIE À DEUX,

WITH REPORT OF A CASE.

By WILLIAM A. BOYD, B.S., M.D.,

WESTPORT, CONN.

ASSISTANT SUPERINTENDENT, THE WESTPORT SANITARIUM.

Definition.—There is no good corresponding English term for *folie à deux*. It might be termed a mental disorder occurring in two or more predisposed individuals, who have been intimately associated with each other. It is characterized by delusional ideas, particularly of a persecutory type, which may be transferred from one individual to another.

Synonyms.—"Communicated insanity" and "double insanity" are terms which have been used. The former does not cover all cases, as the French and English classifications are somewhat different; the latter term is inconvenient when, as not infrequently occurs, more than two persons are affected.

Types.—Three principal types have been mentioned and described in literature, namely: (1) imposed insanity, (2) simultaneous insanity, (3) communicated insanity.

Historical Sketch.[2]—This disorder was first mentioned by Baillarger but it was first accurately described by Lasègue and Falret[29] in 1877.

1. In describing the type known as imposed insanity or *folie imposée*, Lasègue and Falret stated that delusional ideas of one person might be transferred to another sane individual, but it was necessary that the two should have been intimately associated and free from counterbalancing influences, and that the delusional ideas should present some degree of probability in order that they might be accepted. They also noticed that the psychosis in the second individual did not run a typical course, but tended to disappear as soon as the two were separated.

2. Simultaneous insanity, or *folie simultané*, was first described by Regis[54] in 1881, who stated that this form of folie à deux consisted, not in the communication of a delusion from one person to another, but in its simultaneous appearance, and by reciprocal influence, in the predisposed individuals who are together. Regis stated that imitation may have a certain effect on weak mental organizations always ready for any occasional cause. This action might affect at the same time a large number, and as an illustration he mentions the famous epidemics of insanity in the Middle Ages. The most familiar illustration of this class in modern times, is the effect produced by the Revivalist. This form has not been accepted by some alienists as a true type of folie à deux, on account of the absence of evidence of mental contagion in the transmission of the psychosis from one person to the other. Diefendorf[9] states that there is no form of phychosis characteristic of simultaneous insanity. Several published cases have presented the clinical picture of manic-depressive insanity, some of exhaustion psychosis, and many of dementia precox. In his own experience, forms of dementia precox have predominated. *Folie gémellaire* (the insanity of twins) is one form of simultaneous insanity and was described by Ball[4] in 1884. Instances were cited in which two or more brothers or sisters, together or separated, have been affected simultaneously, and in an identical manner.

3. Communicated insanity, or *folie communiquée*,

was first described by Marandon de Montyel[36] in 1881. In this form the second individual accepts the delusional ideas of the first only after prolonged resistance, and the psychosis persists in the second even after the two have been separated. He states that it is not absolutely essential that both cases should present the same psychosis.

In addition to the three types already mentioned, another has been described by Lehmann[33] which he calls *folie induite* or induced insanity. It consists of the addition of new delusions of the original insanity of the patient, under the influence of his association with other patients.

Tuke[64] classified the disorder as follows: (1) cases in which an insane patient distinctly infects another person with the same mental disorder. (2) Cases in which a person becomes insane from companionship, not in consequence of direct transference of morbid ideas, but in consequence of the shock arising out of the painful impressions caused by witnessing the attack, or by the strain of nursing a patient. (3) Cases in which two or more persons become insane simultaneously from the same cause. (4) Cases in which one lunatic infects another lunatic with its special delusion. At the conclusion of an article on folie à deux, among other conclusions, Tuke arrived at the following: (1) In the majority of cases, those who become insane in consequence of association with the insane are neurotic or somewhat feeble-minded. (2) Females are more commonly affected than males. (3) The most common form which cases of communicated mental disorder assume is that of delusion, or of being entitled to property of which they are defrauded by their enemies. (4) A young person is more likely to adopt the delusions of an older person than vice versa, especially if the latter be a relative. (5) It is often difficult to determine to what extent the person who is the second to become insane affects in his turn the mental condition of the primary agent.

In reporting cases of communicated insanity most writers divide or classify those affected with this disorder into the active or parasite and the passive. In the case which I report, I regard the daughter as the active agent or parasite, and the mother as the passive agent or person infected, which is rather an exception to the rule. At the conclusion of this article is appended a somewhat complete bibliography of books and periodical literature upon this subject. I am indebted to the Librarian of the Surgeon General's office and to the Librarian of the New York Academy of Medicine for access to valuable material, and to Dr. A. R. Diefendorf for helpful suggestions in the preparation of this paper.

Report of Case: A mother and daughter came under my observation on the same day, August 3, 1911. The family and personal histories of each will be considered separately: the psychosis of both, of course, together.

Miss R. Age 24. Maternal aunt and mother insane. Had the usual diseases of childhood. Was educated at high school and at business college. As a girl she took little interest in reading, study, or music. By far the greater part of her time was taken up in assisting her mother with the household work. Her disposition was quiet. During her girlhood she would have mixed with young people in a normal way, but her mother objected to their coming to her home, saying that they were too much trouble and that entertaining required too much extra work. Soon after graduation she secured a position as stenographer, but her business career was very unstable. Within a period of five years she had worked for ten different firms. Some of these were temporary positions, but in the majority of cases she quit of her own accord for reasons which will be mentioned in the section of this paper pertaining to her psychosis. Her work had always been satisfactory and she had in her possession excellent letters of reference. The excuses which she gave her parents for leaving these positions were that her salary was too small, that she was substituting for another, and that the positions were temporary ones.

Mrs. R. Age 49. Maternal aunt insane. Mother very nervous. Daughter insane. Nothing unusual occurred during childhood or young womanhood. She received a common school education, marrying at 19; one child was the result of this union. An attack of pneumonia at 23 was followed by "kidney trouble." Her disposition before marriage was a cheerful and happy one, but she was very "nervous." Her domestic life was fairly happy, but she was "cranky" and irritable. Six years ago she stopped visiting her friends and neighbors and worried much because her hair began to fall out. Her menopause occurred about one year ago; since then her health has been poor and she has frequently complained of headaches.

The attack of the daughter was characterized by a gradual, insidious onset of about four years' duration. It was first noticed that she talked and acted strangely at times, was suspicious of others, and had ideas of reference. On several occasions she quit her position as stenographer, saying that the people with whom she worked had made slighting remarks about her work, laughed at her dress, and at Sunday school, on the street cars, and at the homes of relatives others made remarks about her. About the middle of June, 1911, there was a marked change in her condition, and I fix the acute onset as beginning about that date. She seemed more "nervous," her appetite was poor, and she could not sleep. She complained of "bad feelings" in her head, and declared that she was "much mixed up." She frequently became lacrymose because her father did not believe in her hallucinations and ideas of reference. These auditory hallucinations were prominent. She would close the door, talk in whispers, saying that some one was listening. She claimed to hear the voices of men outside the window, who, when she appeared at the door, said "there she is now." She feared that she would be arrested, taken away, locked up, and killed. She was suspicious of her food, and had hallucinations of touch. She had never been seen talking to herself, her conversation was always coherent and relevant, she displayed no suicidal or homicidal tendencies, and was never violent. No visual hallucinations were noted.

A word about the home life of these people may not seem out of place just here. The family consisted of father, mother, and daughter. They lived upon a farm, the father, a huckster, was away during the day, and often until late at night. As the mother discouraged the visits of her friends and neighbors, mother and daughter were thrown continually into each other's society, and consequently depended much upon each other for advice and sympathy. When the acute onset of the daughter took place, her mother was attacked with similar symptoms. Although she had been nervous for many years, and during her married life had been "cranky"

and irritable, she had shown no marked mental symptoms until that date. She would not eat, feared that something was going to happen—that she was going to be punished. She believed that her daughter had a "spell" over her which she could not break, and wanted the daughter sent away for fear that this influence might make her mad. She was self-willed, and would threaten to kill herself if her husband did not allow her to do as she pleased. She would often mutter to herself in a low tone of voice, and there was some retardation in speech and movement, and her emotional field was very unstable. Marked ideas of reference were present; she thought people were trying to injure herself and her daughter. She was suspicious of the conversation and actions of every one except her daughter. Auditory hallucinations were frequent. She heard voices under the window talking to her and about her. She also heard voices of people in the shrubbery about the house, who were eavesdropping, and whom she thought were planning to rob the house. Mother and daughter spent much of the time reading the Bible together; this was unusual. They would sit beside each other all day and often until after midnight, talking to each other of their imaginary troubles in whispers, fearing that they might be overheard. They believed that everyone was talking about them. The mother said that the neighbors called her daughter a bad character and that she would have to share the disgrace. They were superstitious, wanting the dog and cat killed and their blood sprinkled upon the doorsteps. They both firmly believed that their own presence about the house brought bad luck. They expressed the delusion that the farm was going to be taken away from them, and one very rainy day, without protection of umbrella or raincoat, they started to the house of their pastor to ask his intercession in this matter. Each patient seemed to wield a great influence over the other; the mother obeyed her daughter implicitly; the daughter in turn would not obey her father unless she first asked her mother's consent. By the fifth week after the acute onset, neither of the patients would do any housework, and the husband found it necessary to prepare his own meals.

On admission six weeks after the acute onset, a physical examination of the daughter was made. She was noted as a slender, poorly nourished young woman weighing only eighty-eight and one-half pounds. Her gait was steady, but she swayed slightly in the Romberg position; this, however, was probably due to weakness. There were slight tremors of extended fingers, tongue, and closed eyelids. A history of constipation. Mentally, on admission, she was noted as taking little interest in her surroundings; sat with eyes fixed upon the floor, replying to questions in monosyllables, in a slow, hesitating manner. Her answers were at times suspicious and evasive, and she would frequently ask, "What do you want to know that for?" She said that it was difficult for her to think at times and that her head "seemed to be in a whirl." Her memory was somewhat impaired both for recent and remote past. No hallucinations or delusions could be elicited. Orientation poor. Speech coherent.

Six weeks after the beginning of her attack the mother was examined, with the following findings: physically, a medium-sized, middle-aged, poorly nourished woman showing no physical abnormalities. Urine normal. Mentally: she could not answer questions, but sat seemingly absorbed in her own thoughts, gazing absently in front of her. She seemed confused, and it was impossible to elicit hallucinations or delusions. Her orientation was poor, and memory impaired.

At first the mother and daughter were allowed to remain together in the ward parlor. During this time they would sit side by side, quite abstracted, rarely, if ever, speaking to each other, but seemingly looking to each other for protection. At the end of a few days it was thought best to separate them. The daughter was allowed to remain with the other patients in the ward parlors, while the mother was put to bed in her room, where she could receive special nursing which her weakened and poorly nourished physical condition seemed to require. Seven weeks after the acute onset the daughter showed slight signs of improvement. Although she still ate sparingly she took more interest in her surroundings, and was more accessible in conversation, seemed to take some interest in the music, and took walks in the grounds with other patients. When examined mentally it was found that she was only partially oriented. She admitted that she had auditory hallucinations at home, but had not been troubled with voices talking about her since her arrival here. She said to the physician, "I do not feel just right, there is a peculiar feeling in my head; the whole of me feels peculiar; I am not strong and get tired easily; my head does not feel just right, heavy; my memory is not so awful clear; I am not perfectly well." There seemed to be some impairment of memory, her judgment was poor, and she had no insight into her condition. At this time the mother seemed to improve slightly also. When examined by the physician, she resisted gently, saying, "What does it all mean?" Her attention was hard to focus, her memory was defective, she was only partially oriented, and her apprehensions were intense. No auditory hallucinations could be elicited, but she expressed some vague delusion about the window curtains being changed, and other things being different in the room. It was necessary to urge her to eat, and although she had been taking a tonic she did not increase in weight and at this time weighed only eighty-seven and one-half pounds.

Ten weeks after the acute onset the daughter was allowed, at the request of her father, to leave to visit relatives for a few weeks. At this time she was very quiet, conversed in a relevant manner, but with a slight hesitation as if there was some retardation of thought or a slight memory defect. She slept well, her appetite was good, and she had gained slightly in weight. At this time the mother spent part of her time in bed, but was allowed to sit up part of the afternoon. She was evasive in her answers, was suspicious at times, there was some retardation in speech and action, and some memory defect was still present. The daughter was readmitted two and one-half months after the acute onset. After a pleasant visit with relatives she had returned home, where instead of improving she seemed to take less interest in herself and her surroundings and as her father could not remain at home with her he thought it best to return her to the hospital. When questioned by the physician she admitted having heard voices talking to her, and thought there was some beneficent influence growing out of her auditory hallucinations. She had no true insight into her condition, but said there was something she did not understand. She expressed many somatic complaints and her memory for recent and past events seemed to be impaired.

During this time the mother's mental condition had improved a little. She would occasionally become lacrymose because she was not allowed to go home. She seemed somewhat brighter, but did not care to enter into conversation with any one. Of course, during all this time, the mother and daughter were kept apart. In the fifth month after the beginning of the attack, against the advice of her physicians the mother was removed to her home by her husband. She had gained slightly in weight. Her mental condition was somewhat improved, in that she seemed to take more interest in her personal appearance and in her surroundings, her memory seemed clearer, she was not so lacrymose as formerly, conversed more freely, her appetite was improved, her sleep was more refreshing, and she denied her former hallucinations, but I did not consider her as being quite normal at this time. Two weeks after returning home, a message was received that she had improved very much after returning home and appeared to be practically normal. She was in a rather weak physical condition, however.

During the six weeks of the daughter's readmission, there was practically no improvement in her mental condition. She still presented apathy, faulty memory for recent and remote events, and limited content of thought. Her hallucinations and delusions could not be elicited. She continued secluSive and suspicious, refused to go to the dining room, had to be assisted in dressing and undressing, and was careless and untidy. She would sit or stand about the wards taking no interest in her surroundings. She would not talk unless addressed, and her replies were in monosyllables. Her memory and judgment were poor, and she had no insight into her condition. Nineteen weeks after her acute onset, at the request of her father, she was again removed to visit relatives. Several weeks after leaving here, a report from her relatives stated that the daughter had not improved at home, and that she had been sent to one of the State hospitals.

In this case, as in the majority of cases reported, there is the active agent, who in this case is the daughter, who had suffered from dementia precox of the hebephrenic type of some years' duration. It was not, however, until an acute exacerbation, that the mother, thrown in very close and dependent relationship, accepts the "crazy" symptoms of her daughter; that is, the delusions, hallucinations, and fear. It is worthy of note that the mother's case, during its development and course, was far more acute and profound and accompanied by more physical disturbance than that of the daughter.

BIBLIOGRAPHY.

1. Arnaud: "La folie à deux," *Annales méd'co-psychologiques*, May, 1893, serie 7, tome xvii, pp. 337-375.

2. Babcock: "Communicated Insanity and Negro Witchcraft," *American Journal of Insonity*, April, 1895, pp. 518-523.

3. Baillarger: "Quelques exemples de folie communiquée," *Annales médico-psychologiques*, 1885, vol. ii, p. 212.

4. Ball: "De la folie gémellaire," *L'Encephale*, July and August, 1884, vol. iv, pp. 385-400.

5. Brosius: "Folie à deux," *Annales médico-psychologiques*, July, 1887, vol. vi, p. 146.

6. Cramer: "Eine geisteskranke Familie" (Collective Insanity), *Allgemeine Zeitschrift für psychiatrie*, 1873, xxix band, 2 heft.

7. Dees: "Un cas de melancholie par contagion," *Allgemeine Zeitschrift für Psychiatrie*, 1892, xlviii, No. vi, pp. 580-584.

8. Despine: "De la contagion morale," Paris, 1870

9. Diefendorf: "Folie à deux," "Reference Handbook of Medical Sciences," vol. v, 1901.

10. Dromard et Levassort: "Un cas de folie à deux," *Archives de Neurologie*, August, 1904, vol. xviii, p. 163.

11. Dumas: "Epidemies Mentales et Folies Collectives," *Revue Philosophique de la France et de l'Étranger*, 1911, lxxi, pp. 384-407.

12. Elliott: "The Insanity of Two Sisters," *New York State Hospital Bulletin*, January, 1897, vol. ii, No. 1, pp. 32-34.

13. Etchepare: "Folie familiale, délire d'interpretation antilogique communiqué entre sept personnes," *Annales médico-psychologiques*, January, 1910, Neuvième Serie, tome onzième, pp. 5-17.

14. Euphrat: "De la folie Gémellaire," *Allgemeine Zeitschrift für psychiatrie*, 1887-88, xliv, 3.

15. Finkelnburg: "Du rôle de l'imitation dans la contagiosité de la folie," *Allgemeine Zeitschrift für psychiatrie*, 1861, xviii.

16. Forel: "Folie à quatre," *Annales médico-psychologiques*, September, 1888, viii, p. 289.

17. Funaioli: "Folie à deux," *Archivo Italiano per le Malatie Nervose*, 1887, vol. xxi, fasc. 6, pp. 185-214.

18. Goransson: "Coincident Similar Mental Disease in Twins," *Hygeica*, Stockholm, September, 1911, lxxiii, No. 9, pp. 1025-1104.

19. Guiard et de Clérambault: "Folie communiquée et simultanée," *Archives de Neurologie*, October, 1902, p. 280.

20. Halberstadt: "Contribution a l'étude de la folie par contagion mentale," *Thèse de Paris*, January, 1906.

21. Herzog: Sur la doctrine de la transmissibilité des névroses par la contagion," *Archives für psychiatrie*, 1889-90, xxi, heft 1, p. 271.

22. Ireland: "Folie à deux" (The Blot Upon the Brain), Edinburgh, 1895.

23. Joeger: "Folie par contagion," *Allgemeine Zeitschrift für Psychiatrie*, 1888, xlv, heft 4, p. 307.

24. Kerris: "Quelques cas de folie par contagion," *Allgemeine Zeitschrift für Psychiatrie*, 1897, liii, p. 605.

25. Kiernan: "La folie à deux au point de vue médico-légal," *Annales médico-psychologiques*, 1888, viii, p. 143.

26. Knittel: "Contagion mentale à forme sporadique," Thèse de Strasbourg, 1884.

27. Kuhnen: "Un cas de contagion mentale," *Allgemeine Zeitschrift für Psychiatrie*, 1891, xlviii, heft 1 and 2, p. 60.

28. Lapointe: "Une Famille Entière atteinte simultanément de Démonomanie," *Annales médico-psychologiques*, Série 7, tome iv, pp. 350-369.

29. Lasèque et Falret: "La folie à deux ou folie communiquée," *Annales médico-psychologiques*, November, 1877, série 5, tome 18, pp. 321-355.

30. Legrain: "Contribution a l'étude de la folie communiquée," *Archives de Neurologie*, November, 1888, vol. 16, No. 48, pp. 321-345.

31. Legrand du Saulle: "Le délire des Persécutions," Paris, 1871, p. 217.

32. Lehmann: "Folie induite," *Archives für Psychiatrie*, tome xiv.

33. Lehmann: "Folie induite," *Revue des Sciences Médicales*, April 15, 1885, xxv, No. 50, p. 689.

34. Macey: "De la folie communiquée ou du délire à deux ou plusieurs personnes," Thèse de Paris, No. 127, 1874.

35. Marandon de Montyel: "Des conditions de la contagion mentale morbide," *Annales médico-psychologiques*, 1894, xix, pp. 266-467.

36. Marandon de Montyel: "Contribution to the Study of Folie à deux," *Journal of Mental Science*, January, 1883, vol. xxix, p. 598.

37. Maret: "Du délire des Persécutions," Thèse de Paris, 1868.

38. Maret: "Observations curieuse de folie similaire ou folie à deux individus," *Annales médico-psychologiques*, 1875, xiv, p. 46.

39. Marandon de Montyel: "Contribution à l'étude de la Folie à deux," *Annales médico-psychologiques*, January, 1881, vol. v, 6 S., pp. 28-52.

40. Martineneq: "Délire à quatre," *Annales médico-psychologiques*, 1887, vi, p. 383.

41. Meyer: "Contribution à l'étude de la folie par contagion," *Allgemeine Zeitschrift für Psychiatrie*, 1898, lv, p. 267.

42. Mickle: "Insanity of Twins Suffering from Melancholia," *Journal of Mental Science*, April, 1884, vol. xxx, No. 120, pp. 67-74.

43. Morean: "Le crime à deux," *Annales médico-psychologiques*, 1893, xviii, p. 14.

44. Muller: "Contribution à l'étude de la folie par contagion," Thèse de Kiel, 1904.

45. Nasse: "Contagion mentale chez les membres d'une même famille," *Allgemeine Zeitschrift für Psychiatrie*, 1871-72, xxviii, hefte 4 and 5, S. 591.

46. Needham: "Contagion du délire," *Journal of Mental Science,* April, 1881, vol. xxvii, No. 117.
47. Needham: "Contagion du délire," *Annales médico-psychologiques,* 1884, xii, p. 312.
48. Nolan: "Folie à deux," *The Journal of Mental Science,* April, 1889.
49. Pagès: "Délire à trois," *Annales médico-psychologiques,* 1888, vii, p. 371.
50. Parsons: "Folie réciproque," *Alienist and Neurologist,* October, 1883, vol. iv, No. 4.
51. Parsons: "Folie réciproque," *Annales médico-psychologiques,* 1888, viii, p. 146.
52. Raimann: "Folie par contagion," *Wiener klinische Wochenschrift,* 1905, No. 8, p. 186.
53. Regis: "Note rectificative à propos de l'historique de la folie communiquée," *Annales méd.co-psychologiques,* 1885, ii, p. 42.
54. Regis: "Folie à deux," "Practical Manual of Mental Medicine," p. 40, Utica, N. Y.
55. Regis: "La folie à deux ou folie simultanée," Thèse de Paris, 1880.
56. Riedel: "Contagion psychique et folie," *Allgemeine Zeitschrift für Psychiatrie,* August 16, 1898, lv, heft 3, p. 325.
57. Rodrigues: "Épidémie de folie religieuse au Brésil," *Annales médico-psychologiques,* 1898, vii, p. 371.
58. Schpolianski: "Des Analogies entre la Folie à deux et le Suicide à deux," Thèse de Paris, 1885.
59. Sikorski: "Épidémie psychique," *Allgemeine Zeitschrift für psychiatrie,* lv, p. 325.
60. Soukanoff: "Folie gémellaire," *Annales médico-psychologiques,* 1900, xii, p. 214.
61. Stein: "Sur la Contagion mentale," Thèse Erlangen, 1877.
62. Taguet: "Folie religieuse à cinq," *Annales médico-psychologiques,* 1887, vi, p. 50.
63. Trénel: "Maladies mentales familiales," *Annales médico-psychologiques,* 1900, xi, pp. 91-100.
64. Tuke: "Communicated Insanity," "Dictionary of Psychological Medicine," Philadelphia, 1892.
65. Tuke: "Folie à deux" ("Double Insanity"), *Brain,* January, 1888, vol. x, p. 408.
66. Tuke: "Folie à quatre," *Brain,* January, 1888.
67. Tuke: "Folie à deux," *British Medical Journal,* September, 1887.
68. Verga: "Folie à quatre," *Annales médico-psychologiques,* 1887, v, p. 331.
69. Vigouroux et Juquelier: "La Contagion Mentale (Bibliothèque de psychologie)" Paris, 1905.
70. Weygandt: "Les Épidémies Psychiques," Edition Marhold, Halle, 1905.
71. Wilcox: "Communicated Insanity," *Journal of Mental Science,* July, 1910, lvi, pp. 480-485.
72. Woods: "Un cas de folie à deux," *Annoles médico-psychologiques,* January, 1893, série 7, tome xvii, p. 126.
73. Woods: "Un cas de folie à deux," *Journal of Mental Science,* January, 1889, vol. xxxiv, No. 148.

WHAT PART SHOULD THE GENERAL PRACTITIONER TAKE IN THE CAMPAIGN FOR THE CONSERVATION OF VISION?*

By PERRY B. HOUGH, B.S., M.D.,

NEW YORK.

I THINK we are all agreed that preventive medicine is being developed on all sides at the present time, and that any study of the preservation of the health of the human body should include that of the organs of vision. For unless the vision is normal the rest of the body must work under a handicap, which, however small, is an item of expense to the public at large. I shall endeavor to take up the more common factors that cause loss of vision and show how they can be avoided or decreased.

Ophthalmia neonatorum is one of the most prolific causes of loss of vision. Up to 1882, when Credé made the statement that ophthalmia neonatorum could be prevented by the instillation of a drop of a 2 per cent. solution of nitrate of silver into the eyes at birth, statistics showed that from 10 to 30 per cent. of the inmates of blind asylums had lost their eyes from this cause. Since then, as this method of procedure has been followed more and more, we find a marked decrease until at the present time in New York ophthalmia neonatorum is a rare disease. It has been made a reportable disease by the New York Health Department, and all midwives are required to use the Credé method. The result is that in 32,201 births reported by them in six months and investigated by department nurses only twenty-three cases were found. During 1910, 129,080 births took place in New York and at the several eye hospitals and lying-in hospitals only 178 cases were reported. As to how many cases occurred in private practice we do not know, but we can be certain that if all men recognized the fact that a purulent conjunctivitis could be caused by other organisms than the gonococcus and would use this method at every birth the number of cases would be almost nil. If the infection occurs at birth the disease will occur before the fifth day, but if it occurs after that date the infection took place after birth. The severity of the infection varies with the infecting organism and its virulence. It may manifest itself as simply a mild infection with scanty secretion and very little swelling of the conjunctiva and lids, or it may go on to a marked edema of the conjunctiva, swelling of the lids and a profuse purulent secretion. The treatment is cleanliness—irrigating the eyes every half hour if necessary to keep them free from secretion. As to whether a solution of boric acid, bichloride, or normal saline is used I do not believe it makes much difference. Silver nitrate, 2 per cent. solution, should be used once a day. Cold compresses for half an hour two or three times a day will hasten recovery. In the severe cases the cold compresses should be applied for a half hour every two hours day and night and may occasionally have to be applied almost constantly. If the cornea becomes involved heat should be used instead of the cold. Personally I have great faith in the efficacy of argyrol, using a 30 per cent. solution in the beginning every two hours and decreasing the strength and frequency as the condition improves. If the treatment is begun early, as it should be, I do not think an eye should be lost; but when it is lost this is because of improper care.

Next to ophthalmia of the newborn is ophthalmia in adults. Here the prognosis is more grave and consequently one should strive harder to prevent infection. For this reason every patient with gonorrhea should be warned of the danger of infection not only to himself but to others, and of the absolute necessity of cleanliness at all times. When the infection has occurred the same line of treatment should apply, but here the cornea must be watched much more carefully and if the pressure of the lids is very great, as is shown by a tendency of the cornea to become steamy or hazy, the pressure must be relieved at once by incising the outer canthus. In this way many a cornea will be saved that would otherwise be lost.

Next in importance in many places is trachoma. In New York the problem is being worked out through the medium of school inspection, which tends to reach the cases before they have reached a chronic stage. All suspicious conjunctival cases are advised to consult an oculist and in this way early treatment is started. The success of the plan is shown by the small number of advanced cases in

*Read before the Society of the Alumni of the City (Charity) Hospital.

adults that are applying for treatment at the various eye hospitals. Of course the examination of immigrants has been of great importance in preventing new cases entering, so that it is now a question of curing the cases we have in our midst. This one can help to do if when they present themselves for treatment instead of simply giving them a solution of boric acid with which to bathe the eyes one will give a little more careful examination, and if in doubt send the patients to someone else to decide as to the proper treatment. In the hard follicular type an application of copper sulphate in the form of bluestone or a solution of bichloride (1 in 500) works very well, but operative treatment is more satisfactory. At home the best results seem to be obtained by using a solution of tannin in glycerin (15 grains to the ounce); or a solution of bichloride (1 in 5000) if there is no secretion; but if there is secretion argyrol 15 per cent. or another preparation of silver gives the best results. In the papillary type the ordinary operation of expression I believe does very little good and sometimes leaves the lids in a much thicker condition than before the operation. The medicinal treatment as outlined above gives much better results in the acute stage, while in the chronic stage the excision of the cartilage is often indicated. Cleanliness and the necessity of separate towels and handkerchiefs should be impressed on all suffering from this condition.

Another source of corneal trouble is among those who work at the emery wheel or in quarries or who use steel instruments. The necessity of cleanliness in the removal of foreign bodies from the cornea should be impressed on every one in these trades. Very often the chips are hot when they enter the cornea and are sterile, but if they are removed with a sharp nail or knife which is not clean, the cornea will be abraded and infected, and if not properly treated from the beginning the eye may be lost or the vision greatly impaired by the resulting scar. Happily this happens in only a small minority of cases, but there is a loss of vision in all, for if one examines these cases one will find that the cornea is studded with small opaque facets, the density depending upon the amount of damage done in the removal of the numerous chips of steel. The result is a loss in contour and transparency, leaving a cornea with irregular astigmatism which cannot be corrected with glasses. Hence the necessity of urging these men to wear shields. The worst cases are those caused by chips of stone or marble, because in these cases an unclean object enters the cornea and consequently the percentage of infections is large. I believe great care should be taken in the removal of all foreign bodies, and that the ordinary foreign body spud should not be used in every case. A set of different sizes should be kept and in selecting one we should use one whose point is smaller than the object to be removed. In this way the point can be inserted under it and one can lift it out without causing a large abrasion. After it has been removed the wound should be cauterized by using a solution of bichloride (1 to 500) applied with cotton wound on a toothpick. In addition I prescribe a solution of argyrol 10 per cent. to be used at home three times a day for a few days to render the conjunctival sac as free from pathogenic organisms as possible. This should be used until the wound is healed. Following this line of treatment I have observed no infections following their removal and have been able to cleanse infected wounds very readily.

Another disease that is very prone to attack the cornea is phlyctenular conjunctivitis and keratitis. This very often follows measles and the exanthemata and used to be spoken of as a scrofulous condition. It usually manifests itself by the presence of small yellowish-white blebs at the corneoscleral margin or small grayish spots of infiltration in the cornea. The eye is red, but the redness is around the cornea and not over the whole conjunctival surface as in pink eye. There is seldom any secretion, but there is a profuse lacrymation which is irritating to the nasal mucous membrane and sets up an eczema of the nares and lip. There is usually marked photophobia and pain. The course of the disease is obstinate. It may clear up in a few days only to break out again and run the same course a number of times, or the attacks may last for weeks. The cornea is often left very much scarred and irregular. The treatment is both local and constitutional.

Atropine will often relieve the photophobia and decrease the lacrymation. Calomel dusted into the eye has always been a standby, although for the past few years we have met with excellent results by using argyrol 15 per cent. three times a day. Internally the diet should be restricted to good wholesome food, milk, eggs, etc., and all sweets should be prohibited. Cod liver oil and the syrup of the iodide of iron seem to give the best results. Many believe there is a tuberculous taint in these cases; evidence of the presence of this disease in other parts of the body in these cases has been found many times.

Tuberculosis and hereditary syphilis may set up an inflammatory condition of the iris and cornea in children which runs a slow course, but under appropriate constitutional treatment this condition usually clears up. Locally hot applications and atropine are required until the acute symptoms subside. In adults there may occur an iritis as a result of traumatism, or as a complication of syphilis, rheumatism, or gonorrhea. Its importance lies in the necessity for proper diagnosis and early treatment. It must not be mistaken for glaucoma, as the treatment of the two are exactly opposite. In iritis there is a small pupil with usually some exudate into it, giving it a grayish appearance, while in glaucoma the pupil is dilated. In iritis the anterior chamber is normal in depth or may be deeper than normal, while in glaucoma it is very shallow or may be almost obliterated, the iris being crowded up against the cornea. In iritis the tension is normal or may be slightly increased, while in glaucoma the tension is markedly increased and the eye may be almost stony hard. In iritis the cornea is clear and sensitive, while in glaucoma it is steamy and insensitive.

The injection in iritis is circumcorneal and bright pink in color, while in glaucoma it may in addition be scleral and conjunctival and is more dusky. The pain in iritis radiates to the temple and forehead and is often worse at night, while in glaucoma the pain is more neuralgic and may extend over the whole side of the face or be referred to the teeth. Glaucoma is very often ushered in with an attack of vomiting.

The treatment of iritis is to try to break up the adhesions between the iris and the anterior capsule of the lens. For this purpose we use a strong solution of atropine (4 per cent.) once or twice a day and have the patient use a 1 per cent. solution at home every three hours at first. At the same time

that we are striving to dilate the pupil we apply hot compresses to favor the absorption of the exudate that is binding the iris to the lens. Appropriate constitutional treatment should be pushed at the same time. It is very important that the treatment should be begun early, otherwise the adhesions may become so strong that it is impossible to break them. We may have a pupil blocked with exudate and the vision will be destroyed. An iris tied down to the lens is very apt to have frequent relapses of inflammation and go on to degeneration. Iridectomy often gives relief, but is not always easily accomplished, as it is very easy to wound the lens and produce a traumatic cataract, or the iris tears easily and a clear pupil is not always secured.

In glaucoma the treatment is to contract the pupil, pulling it away from the cornea in order to open up the filtration angle at the corneoscleral junction and allow the passage of fluids out of the eye. Pilocarpine or eserin is used for this purpose. Leeches and hot compresses are applied to the temple. If these do not relieve the condition within a few hours an iridectomy is necessary to relieve the tension or the pressure on the optic nerve will produce a permanent loss of vision. If atropine is used in one of these eyes the only thing left is an immediate operation, as there is nothing that will counteract its action.

Another group of cases that we are seeing now are those of poisoning from wood alcohol. A number of cases of blindness and even death have been reported as the result of the action of this poison. Some of these cases were accidental, others were caused by the substitution of wood alcohol in cheap drinks, and a number resulted from the inhalation of fumes while the patient was at work with mixtures in which methyl alcohol was the principal ingredient, as in shellac. There is no excuse for the manufacture of wood alcohol now that denatured or grain alcohol may be brought into this country free of duty for use in the arts. We should warn our patients against its use and strive for the day when its manufacture will be forbidden. Unrecognized errors of refraction are often a serious menace not only to the health of the individual but also to the welfare of the community. The examination of the vision of school children is doing a great deal to check these errors, but there is still a large number of people who are in need of glasses and do not recognize it. Styes, chalazia, and blepharitis are usually due to uncorrected errors of refraction. A mild conjunctivitis that refuses to yield to treatment will often get well after proper glasses are worn. If one would test for both far and near the degree of vision of patients who are suffering from headache a great many of these patients would be relieved without loss of time of so-called bilious headaches and upset stomach and of the depressed heart, resulting from headache powders. It has been conclusively shown that a great many men and women have been driven to crime and vice because they have been unable to continue to use their eyes in school or follow the work they had been in the habit of doing. These results can and should be avoided if the general practitioner would observe his patients a little more closely and suggest a little sooner to the parents of the backward student that it would be well to have the eyes properly examined.

Another class of patients in which there is often serious loss of vision is in children with strabismus. The family physician has an important part to play here in destroying the prevalent idea that strabismus is caused by fright, habit, or one of the exanthemata, and that if let alone the child will outgrow it. In diphtheria or whooping-cough there may be a paralytic squint (and even these cases are rare), but the occurrence in these diseases of strabismus is usually a coincidence or the squint may have been slight or periodic and probably not noticed by the parents up to this time, after which it becomes constant. There is almost invariably an error of refraction with unequal vision and unequal refraction in the two eyes. The strain of trying to get clear vision in each eye results in a disturbance of the relation between accommodation and convergence, which usually go hand in hand, and as a result there is a squint. It is the rare exception for these cases to outgrow the condition. It is necessary to put the eyes in a condition as nearly normal as possible and then to reestablish normal relations between accommodation and convergence. If these cases are allowed to go untreated there results a continued contraction of the affected muscle in the squinting eye, a contracture takes place, and then operation is the only way the eyes can be made straight. But what happens to the vision in these cases? With one eye turning in, if both eyes were used at the same time, the patients will have double vision; but to avoid this nature ignores the image in the squinting eye and gradually from non-use the vision in this eye deteriorates. This goes on until finally nothing can be done to restore the vision.

In the great majority of these cases if they had been properly treated when the condition first began the eyes could have been straightened without an operation and with the use of glasses and proper exercise the vision often would have been greatly improved and sometimes made nearly normal. Even if the vision is not improved the eyes are straight and they are not the subject of ridicule and derision as we often see; but what is more important the patients are not discriminated against when they apply for a position and are not forced to accept labor much below what they would otherwise be qualified to do. Closely allied to these are the cases of muscle weakness, in which the eyes are still straight to outward appearance, yet often cause intense suffering. These cases are the ones that suffer from various nervous troubles, even bordering on insanity. In these cases there is always almost a history of difficulty in reading. Some of the patients complain of being unable to read for more than a few minutes before the eyes begin to ache and they are forced to stop; others complain of neuralgic pains, and still others of nausea and headache. My latest case complained of severe vertigo. If the patients are at all nervous, as they usually are, they soon begin to worry and imagine they are going to lose their sight and experience all the horrors following this dreadful thing. They consult opticians, and sometimes, I am sorry to say, oculists, without getting relief, until someone finally discovers the trouble and relieves them or if not relieved they become nervous wrecks. Examination shows very often that they are wearing their proper correction so far as their astigmatism and hyperopia or myopia are concerned, but further examination will very often show a difference in the vertical level of the two eyes requiring a prism to correct it and in addition a marked weakness of the muscles of convergence. Stereoscopic exercise

combined with the exercise of the convergence with prisms or pencil and the internal administration of increasing doses of the tincture of nux vomica up to the point of tolerance or the use of bromides have given me excellent results. Only this past summer a college girl was referred to me. She had broken down in her school work, and was extremely nervous, alternating between attacks of hysterical crying and melancholy until her friends feared she might attempt to take her life. Appropriate treatment combined with general tonics and outdoor life has worked so well that this fall she reentered college and is doing as well as any of her classmates. I have had so many of these cases in the past few years that I believe with Dr. Gould that a careful examination of the eyes, including the muscles, should be made in every case of nervous trouble and that appropriate treatment in conjunction with the nerve specialist or family physician will go a long way toward a cure.

In conclusion: I believe the man in general practice has an important rôle to play, as it is he who comes in contact with the great mass of the people. He ought to be able to diagnose the more common complaints and treat them. If too busy to give them the care they need he should take the time to advise the patients of the necessity of proper treatment and to refer them to some one who is qualified. Many times a patient is advised to have his eyes examined, but as to whether an oculist or an optician should be consulted is left to his own discretion, and we are often surprised at the amount of ignorance as to the difference between the two even among the well-to-do. The physician ought also to aid in educating his patients as to the care of the eyes and the necessity of proper treatment of the different conditions that may arise.

123 East Seventy-sixth Street.

AN UNUSUAL CASE OF TABES WITH TOXIC COMPLICATIONS IN THE ETIOLOGY.

By TOM A. WILLIAMS, M.R., C.M., Edin.,

WASHINGTON, D. C.

CORRESPONDENCE MEMBER OF THE SOCIETY OF NEUROLOGY AND PSYCHOLOGY OF PARIS, NEUROLOGIST TO EPIPHANY FREE DISPENSARY.

A man of 56, seen with Drs. Fillebrown and Abbe, felt five years ago numbness in the toes and a dimness of sight. The numbness gradually became worse, ascending the legs. Two years ago, catheter life followed difficult urination and impotency. Since a year he has found it hard to rise from his hands and knees. Since a month, deafness is noticeable.

He has attributed his sickness to inhalation for the past ten years of wood alcohol in his work of testing thermometers. This ceased five years ago and amyl alcohol had to be inhaled for ten minutes daily. Breaking of ribs twice and of nose severely are thought of importance. Previous history is insignificant.

Examination.—Reflexes: Patellar exaggerated, Achilles diminished. Abdominal, left lower absent, others moderate. Cremaster diminished. Bulbocavernosus present and brisk, though hard to elicit.

Motility.—Standing on both feet slight swaying, cannot stand on right alone. Romberg on left. Walk ataxic when eyes are closed. Diadocokinesia normal.

Sensibility.—Temperature, attitudes, localization, and diapason intact. Pin prick lost in the feet, becoming less and less diminished in the legs, and normal in upper part of thigh. Light touch lost in an area an inch square over right internal condyle of femur. Deep pain diminished.

Special Senses.—Slight deafness, which has recently increased. Sight dimness of vision. Slight pallor of optic discs, especially of the left, and temporal side of the right.

Pupils.—The right hardly contracts, and is oblate above. The left contracts faintly, quickly recoiling.

The seroreaction of Wassermann is negative.

The cerebrospinal fluid was not examined for the lymphocytosis to be expected.

The psychic state is slightly exalted.

Diagnosis.—The impairment of the pupil reactions and the reflexes, the difficulty of micturition, the disturbances of the sensibility of the lower limbs with ataxia are not consistent with any toxic symptom complex, which would not spare homologous neuronal systems in other parts of the body. True tabes is the cause of the condition. That is to say, it is the result of an ingravescent radiculitis of leptomeningeal source leading to secondary degeneration of the spinal roots and their derivatives within the spinal cord. (See Naglotte's writings and the author's "Pathogenesis of Tabes Dorsalis," Amer. Jour. Med. Sciences, August, 1908.)

*Treatment.**—The success of intensive antiluetic treatment is demonstrated in many cases. It should always be tried in those which do not undergo a spontaneous arrest. Mouth medication is harmful, as the nutrition of such patients is already impaired. Salvarsan in some cases has been rapidly efficacious.

1758 K Street, N. W.

*See articles by the author in *American Journal of Dermatology*, 1912; *Virginia Semi-Monthly*, 1912; Medical Record, 1910; *International Clinics*, 1909

Syphilis and Pregnancy.—L. Mangiagalli believes that the birth of a macerated fetus is not always evidence of parental syphilis, but is generally presumptive evidence of infection of the mother. Maceration is only a physiological phenomenon due to the presence of the fetus in the amniotic fluid, with a certain temperature and without air. Examination of the tissues of the fetus may show the spirochetes; or changes in the internal organs of the nature of sclerosis may equally show the presence of syphilis. The syphilitic placenta is also very large, edematous, yellowish-gray and sclerotic; and the cord shows similar changes. It is a question whether syphilitic infection of the ovule or spermatozoon may occur. But it has been shown that the fetus may be infected through the placenta, with the production of congenital syphilis, for the spirochetes have been found in the placenta and in the cord. These organisms have been demonstrated in the testicle and spermatic passages, but not as yet in the spermatozoon. Hereditary dystrophy may also result from transmission of the poisons without the spirochetes. When the father is healthy, but the mother infected, infection reaches the fetus by way of the placenta. If both parents are healthy at conception, and infected later than the sixth month, the fetus may still be healthy. It may be safely nursed by its mother since it possesses a sort of immunity conferred by the mother. The transmissibility of the disease lessens with time, especially in the male. The female may continue to abort long after the father seems to be healthy. As to treatment of the fetus, this should be carried out directly by means of mercurial inunction and not through the milk of the mother, since this method is too slow.—*La Riforma Medica.*

MEDICAL RECORD.

A Weekly Journal of Medicine and Surgery.

THOMAS L. STEDMAN, A.M., M.D., EDITOR.

PUBLISHERS

WM. WOOD & CO., 51 FIFTH AVENUE.

See fourth page following reading matter for Rates of Subscription and Information for Contributors and Subscribers.

New York, July 13, 1912.

THE FATE OF SYPHILITIC PATIENTS.

EVERY physician has probably at some time or other wondered what happens to the numerous patients infected with syphilis that he sees in the dispensary classes and in the hospital wards. For most of us are fairly certain that the disease is not eradicated in the greater number of these patients by the treatment they usually obtain; external circumstances often prevent the adoption of most radical methods of cure, such as intramuscular injections of mercury, or the administration of salvarsan, while the patients themselves are very apt to drop treatment as soon as the external manifestations of the disease have disappeared. Of course, hospital men see numerous cases of cardiac and arterial disease, of degenerations of the nervous system, of psychoses, for which syphilis is primarily responsible. But these patients are rarely the same that have been treated in the hospital or dispensary in the earlier stages of their disease. Our shifting population, and the curious tendency of the classes that form the great majority of hospital patients to patronize now one now another institution, prevent any extended observations.

Conditions are quite different in the small university towns of Germany, where the whole pathological material of the town and environs frequently passes through one clinic, and thanks to the more paternal forms of government patients can be traced and observed for many years. These favorable circumstances have prompted Dr. Marie Kaufmann-Wolf to trace the fate of syphilitic patients observed by Fleiner in the Heidelberg Clinic in 1891, her results appearing in a paper in a recent issue of the *Zeitschrift für klinische Medicin* (Volume 75, Nos. 3 and 4).

Fleiner described at the time twenty-one cases of "occult" syphilis in women, that is, the tertiary stage of the disease without any history of the primary or secondary evidences of it. Of these twenty-one, nineteen were traced by Dr. Kaufmann-Wolf twenty years later; as many of these women were married at the time or married later the fate of forty-five persons altogether, most of them surely and a few possibly infected with syphilis, was studied.

Five of the women died, the causes of death being bronchiectasis with syphilitic tracheitis, "dropsy," syphilitic cerebrospinal meningitis, pneumonia, and tabes dorsalis. These causes, of course, show what intimate connection syphilis had with the death of these patients. Ten of the men died, the causes of death being apoplexy in three cases, pneumonia in two, cardiorenal disease in one, tabes dorsalis in one, "dropsy" in one, and accident in the remaining two. The striking thing in this mortality is the frequency of disease of the circulatory system (apoplexy) as compared with the late syphilitic manifestations in women. Many of these deaths occurred under circumstances in which autopsy could be had, so that the diagnoses represent much more exactly the true state of things than is usually the case.

It was also shown that though quite thoroughly treated, according to the general hospital and dispensary standards, these patients were later capable of infecting their husbands or wives, gave birth to children in whom the mortality was much above the average, and also showed much higher than the average number of abortions and still births. Sterility, too, was very common among them.

The results of this study are not very gratifying. They show how little our old methods of treatment were really curative of the disease when carried out among the dispensary and hospital patients, and this fact is quite in keeping with the laboratory evidence given by the frequent presence of a strongly positive Wassermann reaction in patients presumably well treated.

Salvarsan, of course, is the new factor which may change the state of affairs. It may be that repeated injections of this remedy, which certainly can be made within a much shorter period of time than the treatment with mercury requires, will give better results in the future. The chief heed is careful observation and registration of results, which heed, we fear, was quite generally neglected in the first enthusiastic use of the remedy. One hundred cases of syphilis, treated with salvarsan, and carefully observed for a long time are better subjects for publication than the thousands in which one or two injections produced regression of symptoms and which have been talked of *ad nauseam* in the recent medical literature.

POISONING BY TEA.

IT is only in comparatively recent times that tea drinking has been at all prevalent in this country. Coffee is the national drink and is more largely consumed by far than any other beverage. But tea drinking is making great strides, the reason for which is not hard to find. The advantages of tea over coffee as a stimulating and cheering drink do not consist in a superiority of its component parts but in the fact that a good tea can be more easily produced than a good coffee and that it is more easily made than coffee. A very great deal of the virtue of coffee consists in the manner in which it is converted into a beverage, and seldom is the art carried out efficiently. Many of the concoctions which are sold as coffee in restaurants and consumed in private houses are not worthy of the name. On the other hand, tea is easily made, the chief point being that the water used for the infusion boils, and that the infusion is drunk when fresh and not allowed to stand.

However, there are occasions and these not infrequent, when tea drinking is harmful. Tea poisoning is a more or less common condition in those countries in which the habit of drinking tea is prevalent, as in England for instance. Among the working classes the women often become addicted to the tea habit and not only drink to excess, sipping tea throughout the day, but drink it in such a state that the poisonous properties are most evident. The tea is in a stewed condition, the pot being kept on the stove the whole day. Men, too, who work at indoor trades and at trades which from their nature tend to create thirst, often become excessive tea drinkers.

It is probable that in most cases of chronic tea poisoning the symptoms come on very gradually, but in the later stages increase rapidly. Discoloration of the skin is a not uncommon symptom, combined with dilatation of the colon and constipation. According to Weild (*Medical Press and Circular*, May 15, 1912), this discoloration is due to some toxin arising from disturbances of digestion, and not to the direct action of any absorbed constituent of the tea, although doubtless the frequent flushing due to the tea greatly assists the action upon the skin. The pigment is not a deposit in the skin, but a product of the skin. Occasionally a patient will complain of polyuria, but there is only one pathognomonic sign of tea excess and this is not present in all cases: this sign is the odor of the breath. The smell is something like that of old books, musty. The cardiac symptoms are more akin to tobacco poisoning than to those of alcoholism, the symptoms of nervous derangement predominating over the signs of muscular degeneration. Injudicious indulgence of badly prepared tea is also the cause of much nervous atonic dyspepsia. According to Weild, for the majority of people, tea, properly prepared and taken in moderate quantities, is not only harmless but useful. Yet a glance at the pharmacology of two of the active ingredients of tea, caffeine and tannin, will show that excess of either may be expected to produce a serious disturbance in health. The disturbance, although varying greatly in degree, is so consistent in form that tea poisoning should rarely be overlooked. As is the case with all foods and beverages, but to a greater extent than with many, care in preparation and moderation in consumption are essential in averting the evil effects of indulgence in tea.

COLOR-BLINDNESS AND DISASTERS AT SEA AND ON LAND.

Carelessness and incompetence continue their appalling toll of human victims. The uncanny echoes of the *Titanic* wreck have not yet entirely abated. The congressional committee has completed its investigation and has made a report, partly placing the responsibility and suggesting many excellent recommendations for the prevention of similar calamities in the future. The English Board of Trade has also ended a patient though painful inquiry and its verdict and recommendations are awaited with interest on both sides of the Atlantic. In connection with governmental responsibility in the physical examination of those placed in charge of merchant vessels, the remarks made by F. W. Edridge-Green (*Lancet*, June 22, 1912) in reporting a case of color-blindness merit close attention. This observer, who is probably to-day the greatest authority on color-blindness, has invented a lantern with which by the use of various colors and apertures of different sizes, the defect of color-blindness can be easily discovered under conditions such as those that naturally prevail on the railway and at sea. The official test of the Board of Trade is an improved Holmgren wool test. Of eminent significance with reference to the fallibility of this test is the fact that an individual who, when examined with the largest aperture of the Edridge-Green lantern, mistook red for green, and *vice versa*, was able nevertheless to pick out and match correctly all the five test colors of the Holmgren method, in which color names are not used. This was a very dangerous case of color-blindness, in which the test used officially by the Board of Trade failed completely. It is pointed out that while many color-blind people are able to match colors with accuracy, they are unable to name the colors correctly, particularly if they are examined under conditions that naturally prevail, such as the presence of mist or imperfect illumination, and the varying effects of distance, and size of the colored object.

Of greater significance is the fact emphasized by Edridge-Green, that "not a single medical man either on the first examination or on appeal is employed by the Board of Trade." There can be little wonder that accidents occur at sea if this is an example of the supervision over the personnel of the merchant marine which has been exercised by our English cousins and in which respect we are probably no less culpable. One of the first reforms that should grow out of the recent dire sacrifice to neglect and folly should be the institution of rigid methods of examination of those to whom the care of thousands of lives are entrusted at sea and on land. The Edridge-Green lantern has been adopted by the British admiralty, but the Board of Trade still clings to the Holmgren test, which, "in addition to rejecting many normal-sighted persons, allows half or more than half of those who are dangerously color-blind to pass."

THE BEST WAY TO GET RID OF THE FLY.

Something like a billion flies were killed in the campaign of 1911, seven million in Washington, D. C., alone. This certainly is prodigious slaughter, and the figures are impressive—until we consider the number that escaped the executioners. Dr. Howard of the Bureau of Entomology has taken his pencil in hand: In the luxuriant climate of the national capital twelve generations of flies are hatched in a single summer. A single over-wintering mother will start, say about April 15, with an average brood of 120. If all these eggs should hatch and in their turn reproduce in the like ratio the end of the fly season would see the progeny of that one mother fly making up a tidy genealogical tree of some 1,096,181,249,311,720,000,000,000,000

branches, twigs and budlets. And as each female usually lays four batches of eggs, their unchecked development through twelve generations would make a mass of flies measuring 268,778,165,861 cubic miles, or considerable more than the total size of the earth. Fortunately there are many things destructive to eggs, larvæ, and adult flies, so the number of the latter is kept down to a possible figure.

Various communities are paying for dead flies—so much for a quart measure of them, so much for a gill (1,600 to the gill). If one could conceive all of the flies in existence being caught and paid for (and the hunters given a living wage) every treasury on earth would go insolvent. One must conclude, then, that the only way to get rid of flies is to get rid of the filth and the refuse which are their natural environment and pabulum. Your fly is the ideal mixer; filth and food are alike congenial to him. Not himself a disease-breeder, he is, nevertheless, the possible carrier of the specific causes of tuberculosis, typhoid fever, the summer diarrheas of infants, diphtheria, and in fact any or all germ diseases. So flies must, beyond all else, be kept from the sick room.

The fly is a natural scavenger; and scavengers have a reason for existence. Let her be killed by all means, but before relying on this alone we should follow her up to her breeding place (which is seldom beyond 300 to 500 feet away), and then make that place decent and sanitary. One should not rest content with killing the fly but should get rid of the places where she lays her eggs—the unsanitary closets, the manure heap, the uncovered garbage can, the putrescent dead dog and horse on the public highway. All refuse and decaying material and all vegetable and table waste should be removed and be burned or covered with lime or kerosene oil. All garbage cans must be covered or screened, or their contents sprinkled with kerosene or lime. The sewage system must be in good order, up-to-date, not leaking, not exposed; kerosene should be poured into drains. Manure should be put into tight pits or vaults, with an outer door from which it can be shoveled away; a barrel of chloride of lime is to be constantly at hand, from which each deposit of manure should be sprinkled. Shallow dishes should be placed about the house, one in each room, containing each two teaspoonfuls of formaldehyde to a pint (two tumblers) of water; or a teaspoonful of bichromate of potassium in a quarter tumblerful of water and sweetened with plenty of sugar. Pyrethrum powder burned in a room stupifies the flies so that they fall to the floor, whence they can be gathered up and burned, or sold if the market rates make it worth the while. All food and drink must be screened or covered in some way; all windows in dining-room and kitchen doors must be screened. Groceries, fruit stores, meat and fish stores must have their wares screened, and above all things else flies must not get near the milk. The American people are much impressed by slogans: "Swat the fly" is disgusting and suggestive of cruelty in the mind of the boy already so predisposed; a better one is "No filth, no flies"; and no disease.

Chondroituria.

When urine is tested for albumin with a few drops of acetic acid, the opalescence which forms in positive cases is due to an insoluble combination of albumin with chondroitin sulphuric acid, as may be shown by the fact that when these urines are first treated with chloroform, which extracts the albumin, no opalescence results. In orthostatic albuminuria the nocturnal urine is usually free from albumin, so that no precipitate results from adding acetic acid. But if a little serum albumin is added the reaction is very marked, showing that chondroituria is a phenomenon associated with orthostatic albuminuria. At a recent session of the K. K. Gesellschaft der Aerzte of Vienna (*Münchener medizinische Wochenschrift*, June 11) Politzer announced that he had found chondroituria in five cases of orthostatic albuminuria. He had also noted a frequent clinical association of the latter with a tendency to angina, and had also found chondroituria associated with this tendency, thus showing a sort of symptomatic triad. In severe anginæ, in endocarditis, etc., he had found chondroituria, albuminuria, or both conjoined. In actual nephritis we find chondroituria, but the acid substance is not precipitated with acetic acid until a certain quantity of albumin has first been taken out of solution. This behavior is associated somehow with the fact that the degenerated renal epithelia form chondroitin sulphuric acid, some of which enters the blood. This is never the case when mere functional albuminuria exists. The same substance occurs in pleuritic exudate, but pleurisy is not accompanied with either albuminuria or chondroituria.

News of the Week.

Plague in Cuba.—The existence of bubonic plague in Havana was definitely determined on July 6 when a patient who had been under observation a Las Animas Hospital for three days was declared to be suffering from the true disease. Three other patients had previously died in the hospital with practically the same symptoms. The Secretary of Sanitation has ordered extensive fumigation which, if necessary, will be extended over the entire city, and the rat-killing squad of the Health Department has been largely reinforced. In Porto Rico also a few deaths have occurred from the disease, and there the situation has been taken in hand by the Public Health and Marine Hospital Service, Passed Assistant Surgeon R. H. Creel being in command.

Enforcing the Food and Drugs Act.—The Secretary of Agriculture calls attention to the fact that during the months of April, May, and June, 1912, more than five hundred cases were reported by his department to the Attorney General for prosecution under the Pure Food and Drugs Act. This is one-eighth of the total number reported since January 1, 1907, when the act became effective, double the number reported during the same period last year, and 25 per cent. greater than the number reported during the first quarter of 1912.

The Two Platforms.—The subject of the public health and its safeguarding is touched upon in the platforms adopted at Chicago and at Baltimore. The latter contains the following plank: *"Pure Food and Public Health.*—We reaffirm our previous declarations advocating the union and strengthening of the various Governmental agen-

cies relating to pure foods, quarantine, vital statistics, and human health. Thus united and administered without partiality to or discrimination against any school of medicine or system of healing, they would constitute a single health service, not subordinated to any commercial or financial interests, but devoted exclusively to the conservation of human life and efficiency. Moreover, this health service should cooperate with the health agencies of our various States and cities, without interference with their prerogatives or with the freedom of individuals to employ such medical or hygienic aid as they may see fit."

The Republican declaration reads as follows: "*The Public Health.*—The Republican party is now, as always, a party of advanced and constructive statesmanship. It is prepared to go forward with the solution of those new questions which social, economic, and political development have brought into the forefront of the nation's interest. It will strive not only in the nation but in the several States to enact the necessary legislation to safeguard the public health, to limit effectively the labor of women and children and to protect wage earners engaged in dangerous occupations; to enact comprehensive and generous workmen's compensation laws in place of the present wasteful and unjust system of employers' liability, and in all possible ways to satisfy the just demands of the people for the study and solution of the complex and constantly changing problems of social welfare."

The Milk Commission to Work with the Department of Health.—The New York Board of Health has accepted an offer from the New York Milk Committee for extensive cooperation in the visiting of municipal milk stations by the doctors who are serving on the sub-committee for the reduction of infant mortality. The medical members of this committee will visit the city's milk stations at regular intervals and will submit detailed reports in writing of their observations. The committee has also appointed persons skilled in statistical work to assist in the supervision and checking up of milk station reports and in the collection of data for reports and public statements. In addition, the committee has appointed an executive secretary to act as an intermediary between the Department of Health and the recently organized Babies' Welfare Association, in the endeavor to bring about the best sort of cooperation between the city and the private agencies in the work of reducing infant mortality. This association reports that there are eighty-eight milk stations now in operation in the city, and that more than twice as many infants are being cared for as a year ago. Of the 150 organizations in the city engaged in work of one kind or another in behalf of infants, over thirty have already joined the Welfare Association, and it is expected that this number will be much increased during the summer and that through this extensive cooperation a new record of infant mortality will be established.

New Hospital Buildings.—The Metropolitan Hospital on Blackwell's Island, New York, is to be enlarged by the erection of a three-story and attic kitchen and dining hall on the west side of the Island. The building will be of stone and will be fireproof with a frontage of 50 feet and a depth of 128 feet. The cost is estimated at about $125,000.

The New York Dispensary has taken title to the plot numbered 34 and 36 Spring street, now used as a coal yard, which it will improve by the erection of a two-story building. The dispensary will occupy the new quarters as soon as they are completed, its removal from the present site on Worth street being made necessary because of the acquirement of the plot by the city as a part of the proposed court house site and civic center.

Gifts to Charity.—By the will of Mr. Charles Henry Marshall of New York, who died in Paris recently, the Darrach Home for Crippled Children of New York receives a bequest of $5,000 for the endowment of a bed in memory of the testator's daughter, Evelyn Isabella Marshall.

Floating Hospital.—The nineteenth season of Boston's Floating Hospital trips down the bay was successfully inaugurated on June 29, when fifty-five babies with their mothers were given a day on the water.

To Borrow Gorgas.—The Government of Ecuador has decided to clean up the port of Guayaquil, where yellow fever has existed for some time, and to that end has asked the United States to assign Col. William C. Gorgas, sanitary officer of the Canal Zone, with some of his assistants, to make a survey of the port and advise a plan to be followed. The request is under advisement and will probably be granted by special act of Congress.

Civil Service.—The New York State Civil Service Commission announces an examination to be held on July 27 for the purpose of filling the position of medical interne at a salary of $1,000 per annum and maintenance. Details may be obtained by application to the Commission at Albany, N. Y.

New Cattle Serum.—Prof. Wilhelm Grugel of the University of Rostock, Germany, has announced that he has succeeded in identifying the bacillus, which is the cause of foot and mouth disease in cattle and also in preparing a serum rendering cattle immune. The serum is not curative but has been used as a preventive with good results.

Sex Hygiene.—The American Federation of Sex Hygiene was incorporated in New York State on July 1 to operate throughout the country. The purpose of the corporation is the voluntary education of the public in the physiology and hygiene of sex, including the study and application of every means, educational, sanitary, moral, and legislative, for the prevention of vice and its diseases. The directors include many well known physicians and social workers. The federation will have its chief office in New York City.

City Death Rate.—During the week ending June 29 there occurred in New York City 1,233 deaths, as against 1,212 during the same week of 1912. In spite of this absolute increase, however, the allowance made for the increase of population is sufficient to make a reduction of 26 points in the death rate per thousand. A comparison of the totals for the principal causes of death in the two weeks cited in the report shows only slight variations except in the case of Bright's disease and nephritis, which caused 63 deaths during this period in 1911 and 102 in 1912.

Ward's Island Fire.—The Psychiatric Department of the Manhattan State Hospital on Ward's Island, New York, was destroyed by a fire of uncertain origin on the evening of July 3. The building was used entirely for research work under Dr. A. P. Hoch, and the ward buildings were not damaged by the flames, though as a matter of precaution some 400 women patients in the Verplanck

Pavilion adjoining the burning building were marshalled under guard to other quarters. Squads of police were sent from the city to the island to be in readiness in case of serious emergency, but fortunately their services were not required. The chief loss lies in the destruction of the library of some 3,000 or 4,000 volumes on psychiatry and of invaluable pathological preparations.

Medical School of Maine.—A number of changes in the faculty of the Medical School of Maine at Brunswick have been announced, among them the appointments of Dr. Alfred King as professor of surgery; of Dr. Alfred Mitchell, Jr., as professor of genitourinary surgery; of Dr. G. A. Pudor as professor of dermatology; of Dr. Gilman Davis as professor of diseases of the nose and throat; of Dr. F. P. Webster as professor of diseases of children; of Dr. Franklin Conant Payson as lecturer on medical jurisprudence, and of Dr. Nathaniel E. Loomis as assistant professor of chemistry. The school conferred the degree of M.D. upon eleven graduates at the annual commencement exercises on June 26.

The Rockefeller Institute.—The resignation of Mr. Jerome D. Green as general manager of the Rockefeller Institute for Medical Research has been announced. Mr. Green will be succeeded by Mr. Henry James, 2d, a son of the late Prof. William James, and a graduate of Harvard College in 1899 and of the Harvard Law School in 1904.

Dr. Jay F. Schamberg has resigned as assistant diagnostician to the Philadelphia Board of Health, owing to the press of private work. It is proposed to distribute the work hitherto performed by Dr. Schamberg among four associate diagnosticians, to be promoted from assistant medical inspectorships. Dr. Wm. M. Welch is chief diagnostician to the Board of Health.

Dr. William Pepper has been appointed dean of the Medical Department of the University of Pennsylvania in succession to Dr. Allen J. Smith resigned. He is a son of the late Dr. Wm. Pepper, for many years provost of the university. He was graduated from the medical department of the university in the class of 1897 and he has for several years been professor of clinical pathology in the university.

Dr. Knopf's Tuberculosis Manual.—The new (seventh) edition of Dr. S. A. Knopf's International Prize Essay, "Tuberculosis as a Disease of the Masses and How to Combat It," has just been translated into French by Dr. Eugene Grenier of the Bruchesi Tuberculosis Institute of Montreal. The proceeds of the sale of this book will be for the benefit of the institute. The first translation of a former edition into French appeared some years ago in Paris. Dr. Grenier's new French-Canadian translation represents the twenty-eighth foreign edition which, with the seven American ones, makes 35 editions in 24 different languages, which have appeared within the last ten years. They are: The American (7), Arabic, Bohemian, Brazilian, Bulgarian, Canadian, Chinese (2), Dutch, English, Finnish, French, German, Hebrew, Hindu, Hungarian, Icelandic, Italian (2), Japanese, Mexican, Norwegian, Polish, Russian (2), Serbian, Spanish, Swedish, and Turkish. Since the book was written, mainly for the education of the laity, this unusually large circulation speaks well for the world-wide interest of the masses in tuberculosis, in whose interest the Berlin International Tuberculosis Congress offered and awarded the prize.

Illinois State Board Examinations.—At a meeting of the Illinois State Board of Health, held June 29, the following resolution was adopted: "After this date the Illinois State Board of Health will require candidates from other States, seeking license through reciprocity, to pass an examination in the subject of materia medica or practice, or both, when an examination in such subject or subjects has not been exacted of the candidate by the board of the State from which he comes."

Cost of Insane Aliens.—In the investigation of this subject, which has received much attention lately, it has been stated that of the patients in the Manhattan State Hospital, New York, over 1900 are aliens, and that the cost of their maintenance is about $341,000 a year or a per capita cost of about $184. The general average throughout the State hospitals is said to be $200 per capita. The Manhattan Hospital at present houses 4,720 patients, although its capacity is supposed to be only 3,596. These facts were brought forward by Dr. Mabon at a meeting of the State Insanity Commission held at the hospital on July 1. It has also been estimated that in New York State more than 50 per cent. of native born insane patients are the children of foreign-born parents.

Chattahoochee Valley Medical and Surgical Association.—The twelfth semi-annual session of this society will be held at Atlanta, Ga., on July 16 and 17, 1912, under the presidency of Dr. George M. Niles of Atlanta. Dr. W. J. Love of Opelika, Ala., is the secretary and treasurer of the society.

Des Moines Valley Medical Association.—At the forty-ninth annual meeting of this society held in Ottumwa, Ia., on June 20, the following officers were elected: *President*, Dr. James W. Osborn, Des Moines; *Vice-Presidents*, Dr. Clyde A. Henry, Farson, and Dr. Elias B. Howell, Ottumwa; *Secretary-Treasurer*, Dr. Fred W. Bowles, Ottumwa.

Bridgewater Medical Club.—At a meeting held in East Bridgewater, Mass., on June 27, the Bridgewater Medical Club was organized with the following officers: *President*, Dr. Charles S. Millet, Brockton; *Vice-President*, Dr. W. C. Whiting; *Secretary*, Dr. Arthur W. Carr, Bridgewater; *Treasurer*, Dr. Allen L. Shirley, East Bridgewater.

Obituary Notes.—Dr. Ellis Vanderslice Ivey, who was killed in a railroad accident at Corning, N. Y., on July 4, was an interne at Bellevue Hospital, New York, having been appointed to take charge of the school for midwives after finishing a three months' service as assistant resident obstetrician at the Sloane Hospital for Women. Dr. Ivey was born in Suffolk, Va., twenty-seven years ago, and was graduated from the University of Pennsylvania, Department of Medicine, in 1910.

Dr. George Washington Tobias of New York, a graduate of the Bellevue Hospital Medical College in 1877, died at his home on July 4, aged 71 years.

Dr. William Hailes of Albany, N. Y., a graduate of the Albany Medical College in 1870, attending surgeon to the Albany and St. Peter's Hospitals, and emeritus professor of pathological anatomy and histology in the Albany Medical College, died at his home after a short illness on July 6, aged 62 years.

Dr. John Augustus Logan of Canton, Ill., a graduate of the Rush Medical College, Chicago, in 1878, and a member of the Illinois State and Fulton County Medical Societies, died suddenly while in consultation in his office on June 26, aged 66 years.

A PRELIMINARY NOTE ON THE EPIDEMIC OF BUBONIC PLAGUE AT SAN JUAN.

By I. GONZÁLEZ MARTÍNEZ, M.D.,

DIRECTOR OF THE BACTERIOLOGICAL LABORATORY OF THE SERVICE OF SANITATION OF PORTO RICO.

On the afternoon of June 15 Dr. Frías communicated confidentially to our Laboratory Assistant Mr. Loubriel that he had seen two cases that showed symptoms that made him suspect bubonic plague. Mr. Loubriel immediately advised Dr. Watson, the acting director of sanitation, as to the confidential information he had received, and this latter made an examination of the patients and ordered the necessary quarantine measures.

On the morning of the 16th the director and chiefs of divisions of the department got together and, realizing the seriousness of the sanitary problem to be solved, decided on the importance and necessity of a correct bacteriological diagnosis. To proceed with more rapidity we divided the work, commissioning Dr. Hernández, assistant bacteriologist of the laboratory, to perform the autopsy of Pedro Colón, one of the cases, who died in less than 60 hours, apparently of a grave septicemia. We took to our charge the delicate work of collecting specimens and making the bacteriological examinations in the case of Miguel Llanos, a patient who had been already isolated in the Quarantine Hospital.

When we began the work, two hours after the meeting, we found Llanos adynamic, with high fever, and an enormous bubo in the left inguinal region. There was no erosion whatever in the corresponding extremity, nor the least lesion on the scrotum or penis. The patient stated that on previous occasions he had had similar attacks with swelling of that group of lymphatic glands, and this made some of the physicians who examined him think that we might be dealing with a filarial adenolymphangitis.

We, who had had the opportunity of seeing several cases of plague in Oporto during the first half of the year 1900, held him as suspicious, and taking all the precautions necessary to avoid disseminating the bacillus hidden in the ganglia, after painting the part with tincture of iodine, we punctured aseptically the ganglion, and aspirated several drops of the ganglionar and periganglionar juices, with which we prepared several smears, inoculated glycerin agar and simple agar test tubes, and injected a guinea-pig.

The post-mortem examination of Cólon, performed by Dr. Hernández and by Dr. Belaval, health officer of San Juan, revealed, according to their report, the characteristic lesions of a grave pneumonia. They prepared smears from the lungs, spleen, and liver, also made cultures in simple agar and glycerine-agar test-tubes and inoculated two guinea-pigs. The microscopical examination of the smears did not throw sufficient light to clear the diagnosis, as the autopsy was made nearly 24 hours after the death of the subject and the bacteria of the cadaveric flora covered almost entirely the microscopic fields. Under such circumstances it was difficult to form a definite opinion, and the case was regarded as negative. However, when on the following day we examined with more care the same smears, we found, mixed with the putrefactive bacteria, and scattered among them, a short thick bacillus, with rounded ends, which was Gram negative and had the polar staining characteristics of *Bacillus pestis.*

In this case the cultures were negative because of the reasons above mentioned, and the experimental inoculation was also unsuccessful, the guinea-pig dying of a rapid septicemia.

But if this case, even though suspicious, had lost, because of the above-mentioned reasons, its diagnostic importance from the bacteriological point of view, in its relations to an official declaration of an epidemic disease, the case of Miguel Llanos offered the best guarantee for a correct solution of the bacteriological diagnosis and the subsequent sanitary problem. The microscopic examination of the smears showed the exclusive presence of a coccobacillus with the following morphological characteristics: a short, thick bacillus, 1½ microns in length by 0.75 to 1 in width, with rounded ends, more deeply stained toward the poles than at the center when subjected to the action of the aniline dyes and specially to the diluted carbol-thionine and carbol-methylene-blue of Kühne. Their mode of taking the stains gives them a "dumbbell" appearance and one is likely to confound them with a diplococcus. Said bacillus grew slowly in the cultures of simple agar and glycerin-agar, the characteristic colonies not being visible to the naked eye until after being exposed to the temperature of the room for 36 hours.

With the object in view of hastening the diagnosis, now that the examination of the smears had made us suspect that the bacterium we were trying to isolate was the *Bacillus pestis* of Yersin, we did not wait for the spontaneous death of the guinea-pig, which already exhibited symptoms of a grave disorder, but killed it and made our examination at once. The anatomopathological lesions of the guinea-pig were those characteristic of the plague: a large sized bubo in the lymphatic gland corresponding to the leg in which it was inoculated; notable infarcts of the spleen and liver, pneumonic foci, very much enlarged suprarenal capsules, considerable increase in volume of both kidneys, a peritoneal exudate, and capillary hemorrhages in the infarcted ganglia and the viscera. We found both in the ganglionar juices, the sanguinolent serosity of the peritoneum, and in the juice from the spleen and liver, the same germ that we had found in Miguel Llanos, in the subcutaneous gelatiniform edema of the guinea-pig, and in the pathological sections of a human bubo. Doubt was now impossible, and we therefore sent to the director of health without further delay a preliminary report of our work.

The official declaration of the existence of such an epidemic, which is one of the three great plagues of humanity and the most fatal of all pestilential diseases, could not and should not be made without having for a base the results of a careful bacteriological examination. Now, this being a work whose technical direction we had assumed wholly, it can be understood that we had to bear the weight of all the responsibility which came with it. We knew that after our report, and using it as a support, sanitary measures would be taken which would cause mental uneasiness in the homes of the city, would greatly interfere with the Island and foreign trade, and would spread a panic all over the island. This would be a serious state of affairs, and it is not strange, therefore, that we felt it necessary to proceed with much caution. There could, however, be no doubt that the bacillus which we had found in our case and later in similar cases,

was none other than the *Bacillus pestis* of Yersin. Among the bacteria pathogenic for man, this is the only one that possesses all the characteristics already described; it is true that the chancroid bacillus (bacillus of Ducrey) simulates it in shape and staining properties and is sometimes found in venereal buboes, but it is, nevertheless, true that said microbe cannot be cultivated in ordinary culture media, nor is it pathogenic to laboratory animals.

The origin of this outbreak is still obscure. We suppose that the plague was introduced from Venezuela, not directly but in an indirect manner, by means of a port which is not in quarantine, without any human epidemic, and the ships from there would not therefore be subjected to "deratisation" in the port of origin or while unloading at San Juan. It is true that the investigations made to determine if there had been any increase in the death rate of rats previous to the explosion of the epidemic have shown that two or three months before any human cases were noted there had been an abnormal death rate among these rodents in several warehouses of the "Marina," possibly because from that date the epizootic had been making ravages among them.

Perhaps the first human cases were unnoticed or were confused with other grave and fatal diseases, due to a lack of careful examination of the patients. This is almost positively so, though not proven. With regard to the epizootic of plague among the rats, we have proven beyond doubt its existence in the *Mus decumanus* and the *Mus rattus*, and the bacteriological examinations which are now being made in the special Plague Laboratory which has been established, will show to what extent the epidemic has invaded them.

It has been said that the cases of plague which have so far occurred have been of a benign type, but this is erroneous, as among the 26 positive cases there were, up to June 29, 17 deaths, which shows a mortality of 65.3 per cent. Of these 17 deaths, 14 occurred at San Juan, one in Arroyo, one in Carolina, and one in Loiza. Of the 14 at San Juan, one was of pneumonic type and another of the septicemic variety.

In a civilized community the gravity of an epidemic cannot be judged by the number of cases. The sanitary organization and the intellectual capacity of the people must be borne in mind; and in this respect the Department of Health of the Island and the inhabitants of San Juan, united by the same idea of defense of the community, have worked with extraordinary activity, heroic energy, and admirable skill. That is the reason why we shall not see repeated in Porto Rico the frightful mortality of India.

San Juan, Porto Rico, June 29, 1912.

Correspondence.

OUR LONDON LETTER.

(From Our Regular Correspondent.)

CANCER LIBEL CASE—ASYLUMS BOARD—INSURANCE ACT—SLEEPING SICKNESS—HOSPITAL STAFFS PLEDGE—R. A. M. C.'S DINNER.

London, June 21, 1912.

After a trial extending over four days before the Lord Chief Justice and a special jury, an action for libel against Dr. Bashford and the British Medical Association has resulted in damages of £2,000. The suit was brought by Dr. Robert Bell, formerly of Glasgow, who has written a good deal about cancer, which he declares is curable and preventable. His treatment is largely dietary, but he has used thyroid extract, cocaine, salicylate of soda, x-rays, hot air, etc., but places most reliance on atoxyl. He professes to be able to diagnose cancer by examining the blood, and from its indications to eradicate the disease. As a consequence of these views he condemns operations; although he for some years performed them, he said they never cured. He admitted that his statements were in direct contradiction to the teaching of the entire profession. But of course that would not make him a quack. Heterodoxy in medicine is not punishable, but there are methods of appealing to the public practised by quacks, and the profession regards with suspicion the least approach to them.

The libel complained of was written by Dr. Bashford and commented on by an even more caustic remark by the editor of the *Journal*. The publication was in a special cancer number, in May, 1911. That the words applied to Dr. Bell are libelous has been affirmed by the jury. The defence was that the allegations of facts were true and the expressions of opinion fair comment. In his summing up the judge assumed that the jury would find that the article called plaintiff a quack, but he warned them that that would not necessarily mean he had been libeled. He reminded them that the court was not a scientific theater, and what they had to decide was whether there had been a libel or not. If they disbelieved a substantial part of the plaintiff's evidence they should not decide for him. If they believed he told a true story "they should ask themselves whether it was right to describe him, a competent medical man, as a quack because of what he has done or preached. If he exploited the timid or credulous for his own advantage, of course he would be a quack."

Obviously a court of law is not the place to discuss medical theories, and, as the judge pointed out, the one question to decide was whether the severe criticism amounted to a libel. This was urged by plaintiff's counsel because the condemnation of the critics applied the words to Dr. Bell by name. It was admitted that plaintiff's language was quite as strong. He had spoken in a lecture of "serum quackery," and in one of his books said: "Quacks with their serum have been enabled to prey upon the country." When reminded of this, he said he had not libeled an individual. It was the system he spoke of. His own counsel said no one understood cancer, but he contradicted that and said he comprehended it. He had written that surgical operations almost amounted to a crime. He had given them up, as they were always unsuccessful. His teaching contradicted the whole profession. He adhered to the statement he made in the *Daily Mail* that cancer was not only curable but easily preventable. Among the curious incidents of this four-day trial was the challenge about blood examinations. Dr. Bell declared he could diagnose cancer by them. Defendant produced specimens. He pronounced one to be cancerous which had been taken from a healthy man standing near him, and, in fact, failed with all.

When asked about the cases of operations that did not recur, he said they were tumors, not cancerous, apparently not realizing that the same explanation might be applied to his own cases. Many strictly medical points were brought forward at this trial, although the judge had distinctly stated that the only question for the jury was whether the criticism amounted to libel. The jury found that

it did, and gave heavy damages, but there will probably be an appeal.

The Metropolitan Asylums Board employs 5,300 persons who come under the Insurance Act. About 1,800 are nurses who "contract out" under the Poor Law Acts. The Board will, therefore, apply for the certificate of exemption for such employees. With reference to the requirements of the act for sanatorium treatment the General Purposes Committee has been requested to report whether the Board is in a position to undertake the provision of the sanatorium accommodation for the county of London.

The Commission on Sleeping Sickness, which went to Africa about a year ago to inquire into the origin of the disease in regions where the *Glossina palpalis* was not known, is now at work in Rhodesia. Reports have come to hand which declare that the *Glossina morsitans* is the carrier. Not only so, but Drs. May and Kinghorn assert that the *Glossina morsitans* has been proved to convey the disease both in the ordinary conditions of the country and experimentally. Further, it is said that some animals may convey the *Glossina* without themselves suffering from it. If this should be fully established it will certainly explain many outbreaks which have heretofore been inexplicable. It is of real significance that the *Glossina palpalis* and the *Glossina morsitans* are both carriers because, while the former is only met with in clearly defined, narrow limits by the watersides of Africa, the latter is found throughout the continent. Northern Rhodesia seems more free from the flies than many parts. No cases of sleeping sickness have been reported there among the whites for a long time.

Many unexpected occurrences result from the Insurance Act. The Prudential Assurance Company arranged a scheme to relieve employers of all trouble and expense in regard to the stamping and custody of cards, but the Commission considers no approved society or other body should enter into such arrangement. So the offer is withdrawn and the Commissioners are not complimented by employers or others.

The medical and surgical staffs of the hospitals met at the Royal Society of Medicine, and by a great majority decided to support the pledge of the British Medical Association.

Dr. Fordyce of Cambridge, who was elected by the County Council as medical representative under the act, has declined acceptance until the six points are agreed to.

The Commission has issued a circular conceding to large employers the privilege of stamping quarterly instead of weekly, but the permission is hedged by so many conditions that it looks as if the annoyance and burden of this stamping would be in no way diminished.

It seems early to be speculating on what may be the proceedings of the British Association next September. Yet the officials of this organization for promoting science have made considerable progress with the program. The meeting is to be at Dundee, and Professor Schäfer is to preside. It is whispered that his address will probably trace the progress of microscopic anatomy during the past generation. Professor Keeble's address in the Botany Section will deal with genetics and physiological research. A joint discussion of this section and that of zoology on the origin of life is to be opened by Professor Minchin. The Physiological Section, president Dr. Leonard Hill, is expected to be unusually attractive. A discussion on mind and body is arranged in which Sir T. S. Clouston and Drs. Haldane and Watt have already agreed to take part. Among papers to be read are those by Drs. Dawson, Mayo, A. Waller, and Rentoul.

In the Chemistry Section Professor Senier will preside and in his address review the foundation and progress of the organic branch. Joint meetings are also expected with the sections of physics and botany. The University of St. Andrews will be represented as to the research on sugars, in which its chemical department has long been engaged.

Surgeon-General Sir W. L. Gubbins, Director-General, took the chair at the annual dinner of the R. A. M. C. on Monday, at which 228 past and present officers attended.

OUR LETTER FROM THE PHILIPPINES.

(From our Regular Correspondent.)

WATER-SUPPLIES—LOWERED DEATH RATE DUE TO PURER WATER—LARGE HYDROCELE—SALVARSAN AS A PACIFIER—SANITATION AMONG THE SAVAGES—CHOLERA—THREATENED PLAGUE—PERSONAL.

MANILA, May 17, 1912.

THE campaign for better water supplies in the Philippines, which has been so persistently waged since American occupation, is now beginning to bear fruit at a rapid rate. When Spain relinquished authority over the Philippines, with the exception of the water system in the city of Manila there was practically no water supply installation in the entire archipelago. Water was obtained either from shallow surface wells, or simply dipped from the rivers as they flowed past the various towns. The question as to whether the water was really safe and potable, or of the convenience of having it delivered by a system of pipes, seems never to have been seriously gone into. For a number of years after American occupation the apathy of the Filipino people toward better water seemed almost impossible to overcome, but by a campaign of education persistently carried on, Filipino officials were gradually interested in the project, and through them, the masses of the Filipino people, with the result that at present a good water for domestic purposes is one of the leading public questions of the day in the islands, and forms one of the planks in the platforms of the candidates of almost all Filipinos for public office.

In 1906 the first artesian well was bored in the islands, and now they may be numbered by the hundreds, and a decreasing mortality curve has followed in their wake wherever they have been installed and the water extensively used. As experience was gained with artesian wells, it was found that the conformation of many sections of the islands was not favorable for artesian wells; therefore, the plan of collecting water from uninhabited water-sheds, damming it up, and distributing it, through reservoirs and pipes, had to be considered. There are at least 50 towns in the islands, now, that are considering the installation of a water system of the latter kind. The health officials have been very reluctant to encourage the use of surface waters, even though the water came from an uninhabited water-shed, because the question as to whether the amebæ which are found in all surface waters that are not thermal or strictly chemical, are pathogenic or non-pathogenic has not yet been satisfactorily determined. But, as the studies in this matter proceed, it seems more and more likely that amebæ are of two kinds: First,

the harmless variety, which is found in all surface waters, and second, the pathogenic variety, which are only found in water, on vegetables, or other substances when they have been directly or indirectly placed there through the means of stools from cases of dysentery. This accords very closely with the experience which has been had during the past few years, in Panama, as a result of which, water supplies on the Isthmus are now being everywhere installed without regard to the ordinary surface amebæ.

The installation of water supplies has lately received considerable additional impetus by the drought which has occurred in the Philippines during the past seven months. According to the records of the Weather Bureau, this drought has been the most severe in thirty years. In many places, all other sources of water supply with the exception of artesian wells, were completely exhausted, and this has served as a practical demonstration to the people of the desirability and necessity for artesian wells.

The extraordinary development in connection with the installation of better water supplies in the Philippines is an excellent concrete example of what may be accomplished when officials of all classes work harmoniously together for the purpose of attaining an object. Everyone, from the Governor-General to the lowest paid official, took occasion, when opportunity offered, to encourage the use of better water, and the constantly decreasing death rate is the monument to their efforts.

At the small emergency hospital which exists at Surigao, in the province of that name in Mindanao an unusually large hydrocele came to notice a short time ago in the person of Servando Acle, age 35, a resident of Surigao, who had suffered from hydrocele for the past seven years. Upon the sac being punctured, 4 liters of fluid were extracted, three coming from the right sac, and one liter from the left sac.

The progress which has been made in sanitation among the wild tribes in the Philippines has indeed been most noteworthy. Where, a few years ago, wild, head-hunting savages roamed at will and indulged in their murderous practices on every hand, there now exist modern hospitals where many of these same savages of a few years ago now apply for treatment, and the doctor and the nurse go about the country in security and safety administering to their various physical ailments. Recently, rapid progress has been made in promoting friendly relations with the Igorrotes, largely through the use of salvarsan. The Igorrotes suffer very frequently from yaws, and as one intravenous injection of this drug usually cures them and without undergoing a prolonged stay in the hospital, the remedy has been very popular and they have attributed marvelous powers to the treatment of the white man, and through this are coming very rapidly under his control.

In many of the towns that are now occupied by Filipinos and wild men, much better sanitation prevails than is the case in the average Christian town in the Philippines. In towns like Bontoc and Cervantes, for instance, the pail system is used, and there is a daily collection of garbage as well as of pails. Streets are swept daily, modern market buildings have been provided, yards have a neat and tidy appearance, etc. Owing to the friendly relations which have been established it has been possible to send groups of vaccinators among these people, and during the past six months over 65,000 of them have been vaccinated against smallpox. In the mountain province there has been opened at Bontoc a modern hospital with thirty beds capacity, and a dispensary and emergency hospital has been opened in Quiangan, Banaue, Cervantes, Tuao, and Tagudin, which are five of the capitals of the sub-provinces which make up the Mountain Province, at Bontoc and Baquit, the two remaining capitals of sub-provinces, there are modern hospitals. The Mountain Province now has two doctors assigned to it and each sub-province has a sanitary inspector in addition to the aid which is rendered by the medical department of the constabulary.

Cholera has been reported from time to time during the past month in various provinces of the Philippines, but investigations of this matter have, so far, always resulted in finding that the reports were false. Bacillary dysentery, however, does exist in many portions of the Philippines and has been the cause of considerable mortality during the present year.

The quarantine restrictions which were imposed against Hongkong on account of the cases of pneumonic plague which were recently encountered on ships from that port have, so far, apparently been successful in preventing additional cases being brought to Manila.

Dr. P. Elkington of Brisbane, Australia, the chief medical officer for Australia, is due to arrive in Manila on May 27 for an extended stay in the Philippines for the purpose of study and observation.

Progress of Medical Science.

Boston Medical and Surgical Journal.

June 27, 1912.

1. Experiences of a Medical Teacher. W. T. Councilman.
2. The Technique of Transfusion. E. H. Risley and F. C. Irving.
3. The Operability of Cerebral Endothelioma, with the Report of a Successful Case. G. L. Walton and J. Homans.
4. A Study of Erythrocythemia and Report of a Case, with Autopsy. A. L. Hamilton and M. E. Morse.
5. A New Mastoid Retractor. P. Hammond.

2. **The Technique of Transfusion**—E. H. Risley and F. C. Irving believe that among the various mechanical metal devices for effecting transfusion the Elsberg cannula is the best. Among the other devices that have been invented for this purpose are the following: (1) The modified Crile cannulæ of Buerger or Burnheim, with the long handle for convenience in handling and the three equidistant prongs over which the vessel walls can be hooked and held; (2) the dog's carotid proposed by Frank, which gives great length of connecting surface and room in which to work, and which is entirely feasible but not possible to have on hand at a minute's notice without considerable previous preparations; (3) the modified Crile cannula of Hepburn, which has a perforated plate attached to the cannula, through which the stay sutures are threaded and securely tied and adjusted; (4) the male and female hemicylinders with spring arms and fixation posts of Janeway, which insure the proper apposition of intima to intima and should be easy of application; (5) the similar but less easily applied cannulæ of Soresi. All these devices have several definite objections: They are sterilized with difficulty and require special skill in manipulation. They must be made by skilled instrument workers at considerable cost and cannot be quickly and easily adjusted. The authors believe that the safest, simplest, and most reliable method of transfusion is that effected with the aid of glass tubes. A nest of tubes can be blown in a very short time and can be easily lined and coated

with a mixture consisting of paraffine 2 parts, petrolatum 2 parts, and stearin 1 part. The use of these tubes was first advocated by Brewer and Leggett, and later by Vincent. The glass bulb of David and Curtis is also extremely simple and safe and affords accurate measurement of the blood transfused. It is possible to do transfusion without cannulæ or clamps or any other mechanical aids, provided enough length of artery and vein is dissected out.

3. **Operability of Cerebral Endothelioma.**—G. L. Walton and J. Homans state that the form of a new growth of the brain offering the best chance for successful removal and perfect recovery is the endothelioma. Unfortunately, however, the very factors that contribute to this result render this form of tumor the most elusive from a diagnostic point of view; these factors are lack of pressure symptoms and lack of symptoms pointing to disintegration of brain tissue. It is particularly important, then, that the general practitioner as well as the surgeon and the neurologist become familiar with this tumor and bear it in mind in case of continuous and increasing cerebral symptoms, such as epileptiform attacks, even though the eyegrounds and intellect be clear, the sight and other functions of the brain unimpaired, headache and vomiting slight or absent, and the general condition good. These tumors spring from the endothelioma of the dura and gradually impinge upon and displace brain substance without destroying it, excepting very superficially in certain cases, after considerable growth, the brain being in such cases softened and sometimes adherent to the tumor at the periphery. These growths are not malignant and have no tendency to local recurrence, or metastasis. They spring from the dura, to which they are closely but not extensively adherent, and gradually increase as solid growths, sometimes with projecting knuckles, finally reaching a diameter of several inches, being then still well defined but not encapsulated.

4. **Erythrocythemia.**—A. L. Hamilton states that Weber defines this as "a disease, or at least symptom-group, characterized by persistent and absolute polycythemia (increase in the number of red corpuscles) due to excessive erythroblastic activity of the bone marrow without the presence of any recognized, or at all events sufficient, exciting cause; it is also characterized by persistent increase in the viscosity and total volume of the blood, and usually by a cyanotic appearance of the patient and by enlargement of the spleen." Some of the cases reported have not been cyanotic. The patients complain of weakness, pain in various parts of the body (especially in the head), vertigo, and constipation. Hemorrhage is not uncommon, especially cerebral hemorrhage. Chronic cyanosis is, of course, a common condition, occurring in various diseases, such as organic disease of the heart, especially of the congenital type; diseases of the lungs, notably emphysema, and occasionally after the long-continued use of coal-tar products (antipyrin or acetanilid), owing to the presence of methemoglobin. The count of red cells in the peripheral blood is increased in cardiac and pulmonary diseases causing cyanosis, because the cells are crowded at the surface of the body, but there is no total increase of cells, merely a change of distribution. Such cases are distinguished from polycythemia by the presence of a clear cause for peripheral stasis. The points of special interest in a case of polycythemia reported by the author are: (1) The very marked apparent improvement under treatment by exposure to the *x*-rays; (2) the decrease of the liver from very great size to about normal, apparently due to improvement, but really due to degeneration; (3) the varicosities of the esophageal veins, common in alcoholic cirrhosis of the liver; and (4) the extraordinary and fatal hemorrhage, due to rupture of the esophageal vein.

New York Medical Journal.

June 29, 1912

1. Primary Sources of Tuberculous Infection, their Relation to Eugenics, and the Cost of Tuberculosis. S. A. Knopf.
2. The Effects of Salvarsan on the Eye. R. G. Reese.
3. Neosalvarsan. A. G. Rytina.
4. The Use of Olive Oil to Prevent or Relieve Postanesthetic Vomiting. R. H. Ferguson.
5. Alopecia Areata; Its Causative Factors and Therapy. P. E. Bechet.
6. A Simple and an Improved Quantitative Test for Indican. F. C. Askenstedt.
7. The Care of the Health during the Menstrual Period and the Menopause. A. Parry.
8. A Theory of the Origin of Disease. C. O. Linder.

1. **Tuberculous Infection, Eugenics and the Cost of Tuberculosis.**—S. A. Knopf notes that about two million dollars are spent annually in the city of New York in the fight against tuberculosis. Besides pleading for the extension of the various medical and sociological measures that have been suggested as means of combating this disease, the author advocates the performance of vasectomy for all tuberculous male patients who will voluntarily submit to this operation, and if the patient is acutely tuberculous and if he insists upon marrying, the author would make this operation obligatory. In females similarly situated the operation of ligation of the Fallopian tubes is advised.

2. **Salvarsan and the Eye.**—R. G. Reese concludes that salvarsan is a powerful symptomatic remedy for the treatment of luetic eye lesions. It merits attention, especially in combination with mercury and iodine. Its action is more rapid than that of mercury, but it should not replace that valuable remedy, except in selected cases. It should be given intravenously for quick action and for the comfort of the patient. It should not be given in simple, spinal, noninflammatory atrophy of the optic nerve.

3. **Neosalvarsan.**—A. G. Rytina states that the advantages which Ehrlich claims for this drug over salvarsan are the following properties: High solubility, neutral reaction, low toxicity, equal if not greater effectivity than salvarsan, and the fact that reaction symptoms such as diarrhea and vomiting do not occur even after the administration of large doses. The preparation which bears the name of neosalvarsan is a true derivative of salvarsan. It has the laboratory number 914, which indicates the labor expended upon it. According to Ehrlich, it arises through a condensation of sodium formaldehydesulphoxylate [CH_2 (OH) O — SO — Na] with salvarsan. From his study and brief experience the author feels justified in drawing the following conclusions: (1) Neosalvarsan is a highly soluble and absolutely neutral compound; (2) the clinical results are just as effective, if not more so, than those of salvarsan; (3) injections are free from the severe constitutional and local reactive phenomena that often follow injections of salvarsan; (4) on account of the neutral reaction, the preparation lends itself well to intramuscular injection, thereby allowing a more prolonged and protracted action.

5. **Alopecia Areata.**—P. E. Bechet believes that the so-called contagious variety of this disease is not a true alopecia areata, but a separate disease due to a specific bacillus. True alopecia areata is a trophoneurosis and is not contagious. For instance, the returning hair in alopecia areata is almost always white, thin, and slender. The returning hair from any parasitic affection of the scalp is always normal as to color and consistence. Alopecia areata is sometimes associated with other conditions, neurotic in character, such as leucoderma. Eddowes, quoted by Stelwagon, reports a case of alopecia areata occurring on an area of leucoderma. Kingsbury reported three cases of total alopecia areata which showed errors of refraction coexisting with ocular muscular insufficiency. Kingsbury thought that total alopecia areata was due to a neurosis and that eye strain might be an etiological factor. There are reported in the literature many cases in which

this dermatosis occurred after sudden nervous shock, from grief, fright, accidents, etc.

Journal of the American Medical Association.

June 29, 1912.

1. An Aseptic Surgical Access to the Pituitary Body and Its Neighborhood. L. L. McArthur.
2. Symptoms of Colonic Intoxication. J. F. Binnie.
3. Diffuse Dilatation of the Esophagus without Anatomic Stenosis (Cardiospasm): A Report of Ninety-One Cases. H. S. Plummer.
4. Nervous Symptoms Following Sunstroke. T. H. Weisenburg.
5. Intestinal Implantation of the Bacillus Lactis Bulgaricus in Certain Intestinal Conditions of Infants, with Report of Cases. R. O. Clock.
6. The Procreative Regulation of Defectives and Delinquents. G. L. Orton.
7. Some Health Problems of Changing China. W. W. Peter.
8. Some Uncommon and Often Unrecognized Forms of Toxic Dermatitis. J. Zeisler.
9. Reconstruction of the Bile-Ducts. A. G. Sullivan.
10. Beriberi Caused by Fine White Flour. J. M. Little.
11. Therapeutic Literature. E. J. Brown.
12. The Use of Hexamethylenamine in Affections of the Upper Respiratory Tract. A. A. Eisenberg.

1. Aseptic Access to the Pituitary Body.—By L. L. McArthur. (See MEDICAL RECORD, June 29, 1912, page 1245.)

2. Symptoms of Colonic Intoxication.—By J. F. Binnie. (See MEDICAL RECORD, June 29, 1912, page 1248.)

3. Diffuse Dilatation of the Esophagus and Cardiospasm.—By H. S. Plummer. (See MEDICAL RECORD, June 29, 1912, page 1246.)

4. Nervous Symptoms Following Sunstroke.—T. H. Weisenburg states that during the summer of 1911, because of the excessive heat there were more than the usual number of cases of heat exhaustion in the city of Philadelphia. Two of the large number of cases seen by him are reported because of their unusual character. The first was that of a patient in whom a severe sunstroke was followed by multiple nervous lesions producing acute cerebellar ataxia, loss of speech, and spastic symptoms, an unusual combination. The second was that of a cook in whom, because of overheating, there occurred muscular spasms. These spasms are the commonest manifestation of heat intoxication. The interesting feature was that he had an old poliomyelitis of one leg. In spite of this the muscular spasms were just as marked in the palsied limb as elsewhere, this being an interesting contribution to the theory that the spasms are produced by a degenerative process in the muscles and not by a lesion of the nervous system. Although the literature of nervous symptoms following heat intoxication or exhaustion is not very large, yet a great variety of symptoms have been described. Besides the usual rise of temperature, headache, and sometimes coma, there have been quite a number of cases of motor lesions which have been either hemiplegic or paraplegic, and rarely of acute ataxia and disturbance of speech. Curiously enough the author has not found a single instance of such lesions producing sensory disturbances, although there is no reason why these should not occur.

5. Intestinal Implantation of Bacillus Lactis Bulgaricus.—By R. O. Clock. (See MEDICAL RECORD, Vol. 81, page 737.)

6. Sterilization of Defectives.—G. L. Orton states that a bill was passed at the session of 1910-11 of the New Jersey Legislature, and signed by the Governor, empowering the latter to appoint a commission whose duty it should be to sit and act on all cases recommended by the heads of the various institutions, the persons having the right to appeal to the court to show why the operation should not be performed. The law permits and in fact specifies the operation to be performed; namely, orchectomy in cases of rapists, and vasectomy in case of all other defectives. The operation of vasectomy is a very valuable one in these cases and is performed by simply ligating the vas deferens and incising the same. It can be done under local or general anesthesia. It has been performed on several hundred cases in the Indiana State Reformatory with avowed success, and while it absolutely prevents procreation it does not destroy sexual desire or ability for coition.

8. Uncommon Forms of Toxic Dermatitis.—J. Zeisler refers to the occasional irritating effect on the skin of veronal. He reports the case of an individual in whom twelve to eighteen hours after taking five to eight grains of veronal there would be noticed a marked itching on the glans and prepuce. On local inspection a number of round reddish patches would be observed which in the course of a day or two would become bright red, tense, somewhat swollen, and gradually show even a serous exudation. This highly inflammatory state, accompanied by almost unbearable itching, would persist for a number of days before superficial crusting and final desquamation would terminate the process, about eight or ten days after its onset. Another unusual form of dermatitis is that known as primrose dermatitis. During the past two years a number of cases of this affection, probably not less than twenty-five, occurred in the author's practice. In all, the history of severe itching and a localized dermatitis, affecting mainly the hands and the face, formed the striking feature. With few exceptions all were women belonging to the better class. A few were engaged in floral establishments. The local features consisted in the well-known phenomena of ordinary dermatitis, ranging from mild erythema and occasional vesiculation to crusting, fissuring and swelling, associated with itching and burning. In the last few years quite a number of observations of persistent dermatitis have come to the author's notice which he could easily trace to their peculiar causation. Most of the sufferers were women above middle age. One only was a man of about sixty. These people complained of considerable itching and burning of the face, which showed more or less sharply circumscribed redness, with superficial crusting, often involving the ears, but marginated against the hair line and only occasionally involving the hands in the form of a few patches. The eyelids suffer particularly, are usually swollen somewhat, and show superficial transverse rhagades. The patients are otherwise in perfect health and know of their own knowledge no cause for their disfiguring dermatosis. These cases have usually been treated for long periods as chronic eczemas. A close observer will quickly notice the unnatural dead color of the hair, which contrasts markedly with the grayness of the hair close to the skull. These patients do not deny the use of hair dyes.

12. Hexamethylenamine in Affection of the Upper Respiratory Tract.—A. A. Eisenberg concludes that hexamethylenamine is a valuable remedy in the treatment of the inflammatory conditions of the upper respiratory tract. It must be given in doses large enough to secure its full physiological effects. No untoward symptoms were observed while given in fairly large doses (up to 30 grains daily). It seems to prevent possible complications of acute rhinitis, such as bronchitis and sinusitis.

The Lancet.

June 22, 1912.

1. Some Moot Points in the Pathology and Clinical History of Pneumonia. P. Kidd.
2. The Pathology of Immunity, as Illustrated by the Behavior of Fluid Exudates from the Tissues and Various Body Cavities, in Acute and Chronic Bacterial Infections, More Especially with Regard to the Problem of Aggressins. L. S. Dudgeon.
3. Case of Ganglion Neuroma of the Mesentery, Partly Embryonic in Structure. H. Macnaughton Jones.
4. Some Remarks on Dilatation of the Heart. H. Davy.
5. A Case of Color Blindness. F. W. Edridge-Green.
6. Two Cases of Pneumococcal Vulvovaginitis in Children. H. Chapple.

1. Moot Points in the Pathology and Clinical History of Pneumonia.—P. Kidd states that Sutherland, as the result of observations made in children suffering from pneumonia, has referred the respiratory and cardiac symptoms of uncomplicated early pneumonia to toxemic dis-

turbances of the respiratory and cardiac centers in the medulla. The examination of sputum is an unsatisfactory method of detecting organisms present in the lungs. Pneumococci may be absent in cases of pneumonia and may be present in cases of bronchitis. As regards physical signs, it is noted that a localized deficiency of the breath sounds is a commoner and more valuable sign of commencing pneumonia than the crepitant râle of Laennec or the fine hair crepitation. The latter may be confounded with the fine crepitation of edema, and is often not heard at all in cases carefully watched from the first appearance of physical signs. According to Gibson, a blood pressure appreciably below the normal in pneumonia is invariably of evil omen, and any considerable fall bodes disaster. It is common to find edema of the lungs and mediastinal tissues in fatal cases of pneumonia, both probably in many instances of inflammatory origin. But cutaneous generalized edema can hardly be regarded in the same light, and may be a toxic effect of the pneumococcus. The records of necropsies at the London Hospital show that obsolete tuberculous nodules are often found in the lungs in cases of lobar pneumonia. But lobar pneumonia complicating declared and progressive tuberculosis of the lungs is exceedingly rare. Acute lobar pneumonia complicating rheumatic fever is very uncommon. It seems to be the fact that the pneumonia of influenza is of two kinds: (1) True influenzal pneumonia, the result of the influenza bacillus, which is always bronchopneumonic; (2) lobar pneumonia, which is probably always pneumococcal. The first may arise at any stage; the latter generally appears rather as a sequel than as a substantive part of the influenza, and is to be regarded as a secondary infection. Pneumonia terminating in organization seems to fall into two groups: (1) Progressive febrile cases, with or without a temporary remission of fever, ending fatally in a few weeks or months. Pulmonary abscesses, gangrene, and other complications may arise. (2) Cases in which the fever declines by lysis, delayed resolution being succeeded by gradual fibrosis and recovery.

3. **Ganglion Neuroma of the Mesentery.**—H. Macnaughton Jones reports a case of this rare condition in a girl aged eighteen years, in whom the growth was first discovered at the age of five years. The mass appeared to be of the size of a large orange, situated below the umbilicus at the left side and covered by the rectus muscle. The only symptoms were nausea and constipation. By a double oblique incision, which included a portion of the rectus, the capsule of the tumor was exposed. It was covered by omentum and partly by bowel. There were some adhesions of the omentum and the bowel which were easily separated, but then it was found that the mass was embedded in the mesentery, between the layers of which it lay. Its firm mesenteric attachment to the left side of the vertebral column was hidden from view and extended for some nine inches. A profuse hemorrhage attended the removal of the tumor. The greater part of the mass consisted of a firm tissue, which was composed of bundles of nerve fibers. The fibers were almost all myelinated. They had a sheath of Henle which varied in thickness, but which was usually delicate. This tissue also contained groups of encapsulated ganglion cells; the nerve fibres surrounding these cells had a very delicate sheath. The ganglion cells were almost all degenerate; some were necrosed and impregnated by calcium. The capsule of the tumor was formed by similar bundles of nerves in which the collagenous sheath was thickened; it was not formed by indifferent fibrous tissue. This firm portion of the mass had the structure of a simple "neuroma ganglionare" or "gangliocellulare."

4. **Dilatation of the Heart.**—H. Davy states that the heart may be invaded by the specific organisms in rheumatic fever, pneumonia, typhoid fever, diphtheria, erysipelas, influenza, and the various septic infections, and that the results of such invasion are shown in the occurrence of endocarditis, myocarditis, and pericarditis. In these cases the tonicity of the poisoned heart muscle fails and thus dilatation takes place. There are many other conditions in which the heart is poisoned by toxins generated in the patient's body. The author has published a series of cases showing that toxins generated from microorganisms in decayed teeth act in this way. In one of these a vaccine made from the bacillus pyocyaneus found in a decayed tooth was actually discovered to benefit greatly the condition of the patient's heart, which had on several occasions been found to be dilated; and in several other cases various microorganisms found in decayed teeth had been associated with heart weakness and probably degeneration of the heart muscle. This poisoning of heart muscle by toxins formed within the patient's body opens up a large field for investigation. The action of toxins in cases of chronic constipation and intestinal stasis is already being recognized, and their action on the heart and other organs of the body is beginning to be known. It is possible that it may be found that other organs of the body may be invaded by microorganisms which produce toxins that affect the heart muscle, but at present this has not been proved.

5. **Color Blindness.**—See page 68.

6. **Pneumococcal Vulvovaginitis in Children.**—H. Chapple reports two cases of this condition, which were clinically indistinguishable from other cases of vulvovaginitis. Their exact nature was to be recognized only by bacteriological examination. The following treatment was employed: For the first few days the child was kept at rest and the parts were bathed at frequent intervals with a warm lotion. An autogenous vaccine of 5,000,000 pneumococci was given. The acute nature of the inflammatory process rapidly subsided, and then warm vaginal douches of zinc permanganate were given under low pressure. Had the patient been an adult it would have been wiser first to plug carefully the orifice of the external os with a suitable tampon in order to prevent the possible ascent of organisms during the douching process. This was not feasible in this child. The inflammatory process did not spread further than the vagina, and in ten days the discharge was almost gone, but pneumococci were still present in the vagina. Consequently another vaccine of 5,000,000 was given, and the local treatment was continued. The condition rapidly cleared up, requiring only four vaccines in all, and the patient got quite well, the vaginal swab showing no pneumococci present. Recent methods have shown that pneumococcal peritonitis is not an uncommon affection in girls. To those who hold that the path of infection may be an ascending one by the Fallopian tubes these cases will be of interest. The pneumococcus is present in the vagina more frequently than is supposed. The possibility of such an ascent affords an additional reason for being anxious to detect the exact nature of a discharge at the earliest possible moment, and to rid the patient of her infection by the most rapid possible means.

British Medical Journal.

June 22, 1912.

1. Colic. G. Rankin.
2. Enterospasm and Colic from the Surgical Point of View. J. Swain.
3. The Salvarsan Treatment of Pernicious Anemia. B. Bramwell.
4. On the Treatment of Syphilis. D'Arcy Power.
5. Electrocardiography and Its Importance in the Clinical Examination of Heart Affections. T. Lewis.
6. The Rapid Cure of Amebic Dysentery and Hepatitis by Hypodermic Injection of oluble alts of Emetine. L. Rogers.

1. **Colic.**—G. Rankin states that the word "colic" was originally meant to be descriptive of a sudden, acute, paroxysmal pain produced by some abnormal condition of the colon. A wider significance is now attached to the term, which has come popularly to connote pain of this

description occurring anywhere throughout the body, when it is dependent upon either irregular active contraction or excessive passive dilatation of involuntary muscular fibre. The most homely example of colic is that due to muscular spasm of the intestinal walls resulting from the presence of irritating food. Another striking variety is that produced by gallstones impacted in the cystic or in the common duct. Comparable with biliary colic and announced by the same sudden series of symptoms—rigors, pain, and vomiting—is ureteral colic. The author enumerates and describes the other following forms of colic: that due to lead poisoning; the pain caused by neurotic dyspepsia; colic due to impaction of a pancreatic calculus in Wirsung's duct; appendicular colic; the colic associated with mucous colitis; the pain caused by movable kidney; the colicky pain caused by embolism or thrombosis of the mesenteric vessels; "angina abdominis," comparable with the spasm of the vessels seen in ordinary migraine; the colic frequently occurring in the terminal stage of diabetes; and the pain due to aneurysm of the abdominal aorta, malignant disease of one of the abdominal organs or of the retroperitoneal glands, hysteria, and the visceral crises of locomotor ataxia. In women, colic may result from disorders of the bladder, uterus, tubes, and ovaries.

2. **Surgical Significance of Enterospasm.**—J. Swain states that pain, vomiting, and collapse constitute the cardinal symptoms of most acute abdominal crises. Every surgeon of experience occasionally meets with cases in which the severity of these symptoms is strongly suggestive of intestinal obstruction or some other important abdominal lesion; but on opening the abdomen nothing abnormal is found, the symptoms cease, and the patient soon recovers. Some of these cases are of purely functional origin, those of an acute type being probably due to painful contraction of the small intestines—enterospasm—and those of a chronic type being associated with pain of the nature of "colic" in the large gut. That enterospasm is capable of simulating an acute abdominal crisis is suggested by the fact that recovery follows operation when the pain and vomiting are sufficiently severe to necessitate a celiotomy, which is performed in some cases because of the impossibility of being certain that the symptoms are merely due to a functional intestinal disturbance. Moreover, in some cases the intestines are actually to be seen markedly contracted at the time of opening the abdomen. The seat of the greatest intensity of the pain generally appears to be referred to the neighborhood of the umbilicus, there is often a history of irregular action of the bowels, and the abdomen is frequently retracted. In this last respect the condition resembles the early stage of most acute abdominal lesions, and when associated with considerable superficial tenderness it is extremely difficult to exclude some forms of peritonitis. Nevertheless, in many of these cases the general condition of the patient does not suggest a serious mischief, and it is not uncommon to find that the diaphragm acts freely, so that a deep breath may be drawn without adding to the patient's suffering. In doubtful cases of severe intestinal trouble a gradually increasing distention in association with pain and vomiting may be regarded as a clear indication for operation; but it is not often desirable to wait for this as a means of diagnosis, and it is far wiser to run the risk of operating unnecessarily in a case of enterospasm than to neglect to interfere in an obscure case of acute intestinal obstruction or other morbid abdominal condition which may be amenable to surgical procedures. The exclusion of a malignant neoplasm is of the greatest importance.

3. **Salvarsan in Pernicious Anemia.**—B. Bramwell states that in March, 1911, he reported two cases of pernicious anemia in which great improvement resulted from the administration of salvarsan. He now records the further progress of these cases—they have remained well without any further treatment—and the results in five other cases treated in the same way. Since the author commenced to treat cases of pernicious anemia with arsenic in the year 1875 he has had a large experience with the disease; the impression which has been made upon his mind by the results of the salvarsan treatment in the seven cases is, on the whole, very favorable. He believes that salvarsan will probably be found to be a more efficient remedy than arsenic given by the mouth, and indeed than any form of treatment which has as yet been employed in this very grave and intractable disease.

6. **Emetine in Treatment of Amebic Dysentery.**—L. Rogers states that the principal cause of the vicissitudes of ipecacuanha is the production of very disagreeable and exhausting nausea and vomiting by the large doses which are essential to obtaining its full curative effects. This serious drawback is only partially overcome by the present methods of giving the drug in salol or keratin coated pills, and the use of opium, chloral hydrate, or tannic acid to check vomiting. Last year Vedder showed that emetine, the principal alkaloid of ipecacuanha, has the power in high dilutions of destroying amebæ in broth cultures, although it is not clear that this was a pathogenic form, which most recent authorities believe has not yet been cultivated. The author has, therefore, tested the effect of the soluble emetine hydrochloride on *Ameba histolytica* in dysenteric stools. He has found that, on placing a piece of mucus containing numerous active amebæ in normal saline solutions of this salt, the pathogenic organism is immediately killed and materially altered in its microscopical appearances by a 1 in 10,000 solution, while after a few minutes they are rendered inactive, and apparently killed by as weak a solution as 1 in 100,000. He has therefore decided to try if this powerful alkaloid can be safely administered hypodermically in the treatment of amebic disease, and has obtained striking results in a few patients.

Berliner klinische Wochenschrift.

June 17, 1912.

Etiological Significance of Psychic Insults in Affections of the Blood Glands.—Munzer first refers to diabetes, Graves' disease, myxedema, and acromegaly as a disease group due to disorders of the blood glands. To go no further than this grouping, however, means nothing at all in connection with the intimate nature of these affections. What factors bring about these disturbances? Are they common for the entire group? This is hardly probable. All possess a notable hereditary element, but this refers only to the individual diseases. We do not find group heredity. The great causative factors of chronic disease in general may be noted in most of these affections, and the general factor in etiology stands out with prominence. This is psychic insult which may be brought into relationship with all or nearly all of the blood gland diseases. These insults naturally comprise fear and worry, fright, grief, vexation, despair, or from a more objective viewpoint domestic and business troubles. A factor like psychic insult may readily be understood as having the power to affect several blood glands at once, although such is the interdependence of these structures that a serious affection of one gland might involve others. Again the psychic trauma would not manifest itself on the blood glands alone, but could affect other functions, not omitting of course the brain itself. Hence despite the somatic character of the affection the germ of the latter may be in the brain, as in any other psychogenous malady. The author is more dubious about the hypophysis than any of the other blood glands, in regard to a psychogenous factor. The latter can readily be established in connection

with affections of the thyroid, pancreas and adrenals. The anatomical relations of the hypophysis associate its physical anomalies with central nervous symptoms, but a set of phenomena due purely to disturbed innervation of an anatomically intact structure is not yet known to exist although Pel has reported cases of acromegaly due apparently to psychic trauma.

Early Diagnosis of Primary Lung Tumors and the Possibility of Operative Removal.—Ephraim states that radiography has not added anything to our diagnostic resources in this field, for the growth must often be quite far advanced before its presence can be detected in this manner. Bronchoscopy also has a limited field, and it is sometimes possible to excise a bit of tumor for diagnostic purposes when one projects into a brochus. On account of the tendency of primary tumors to appear in or near the bronchi a combination of resources sometimes enables us to make the correct diagnosis when the first subjective symptoms cause the patient to seek medical aid. These symptoms comprise dyspnea and hemoptysis, cough and stridor; and auscultation and percussion can be depended on to furnish data, aided of course with the sputum investigation. The author reports a number of cases of malignant disease in which a correct diagnosis was promptly made. Naturally for such cases not much can be done as a rule. The author, however, succeeded in extirpating one bronchial cancer by the natural route and cauterizing the base and the patient is still free from disease after two and a half years. It is also worth while to *x*-ray these growths with the hope at least of prolonging life.

Münchener medizinische Wochenschrift.

June 18, 1912.

Duodenal Ulcer.—Hans Kehr asks why it is that Mayo and Moynihan diagnosticate and operate on so many cases of duodenal ulcer, while in Germany the converse is the case. Does this contrast redound in any way against German surgery? The author has been in the United States and as far as diagnosis is concerned found no superiority there over German colleagues. The latter, however, are more conservative when it comes to laying down operative indications; while the American public appear to be far better disposed to trust themselves to the knife than are the Germans. There is also perhaps a disposition on the part of some American and English surgeons to operate for a record or as a cure-all. They do not adhere to the maxim that it is better to be a physician first and an exciser of ulcers or appendices afterwards. The author regards it as a higher art to forego operation in select cases than to operate broadcast. Despite the author's record as a gallstone operator he rather prides himself more on what he forbore to do than on his record. Full credit is given to the Mayos for their immense activities and low mortality. The gospel of early intervention is preached and practised by them to the full. But the great reputation, the strong personality, the belief in operating, on the part of the surgeons, and the willingness of the patients to submit to operation, are all powerful factors in determining the amount and character of the work. Perhaps the same aggregate of good could be attained with far less surgery.

Endothelioma of the Nasal Septum.—Trautmann believes these growths to be much more common that statistics show, because a correct microscopic diagnosis of so little known a tumor can seldom be made, the material being buried in the literature of carcinoma and sarcoma in this as in other localities. The author can find but four published cases under this head and adds a fifth. Clinically the growth was a fibrous polyp with nothing to suggest malignancy. The diagnosis of the university pathologist was endothelioma undergoing myxomatous degeneration. Without special care in diagnosis such a growth would doubtless impose itself as a myxosarcoma. The growth was excised with a part of the septum and the prognosis for recurrence guarded.

De Quervain's Disease.—Flörcken, while not exactly naming a recently described affection for its reporter, described a case under the designation "stenotic tendovaginitis of the processus styloideus radii (de Quervain)." It is not quite six months since this affection was apparently first described by de Quervain under that designation. It is quite different from a condition secondary to habitual subluxation, also recently described and for the first time by Burk. In one of the author's cases the patient was a young woman who could not account for the lesion unless it could be attributed to cycling. The thumb of the affected side was crippled, extensions being very painful. The radiograms showed no bone lesions. There was tenderness over the affected tendons. Diagnosis was confirmed by operative incision into the sheaths of the abductor longus pollicis and extensor brevis pollicis, the tendons being then freed from the sheath.

Deutsche medizinische Wochenschrift

June 20, 1912.

Treatment of Climacteric Disturbances with X-Rays.—Runge states that the use of radiography is constantly broadening in gynecology. It is now used in myomata, climacteric hemorrhages, dysmenorrhea, pruritis, and kraurosis vulvæ. At the present time no less than 137 patients are receiving the *x*-ray treatment for these affections in the gynecological clinic of Charité Hospital, Berlin. For profuse menstruation at the menopause the older treatment comprised ergot and irrigations, with curettage as a reserve resource and hysterectomy as a last resort. To-day the treatment consists mainly in destroying the ovaries functionally with radiography. It must be confessed, however, that this resource is by no means always free from danger. A correct diagnosis must, of course, be made, for to proceed too hastily to radiography might cause the operator to overlook a beginning cancer or a small submucous myoma—in the latter case the error would only be technical as the rays could be the treatment of choice under such circumstances, although many would doubtless prefer extirpation. If a high degree of acute anemia is associated with the hemorrhage hysterectomy might be the indication of necessity. The older the patient the more prompt should be the cure. Naturally everything depends upon selection of material and aptness of technique, both as regards outlook or recovery, and the prevention of accidents due to the treatment.

A New Method for Examination of Lumbar Punctates.—Braun and Husler isolate five groups of punctates. The first is characteristic of tuberculous meningitis or perhaps of meningitis in general, although the authors' test may be made especially valuable for the latter. The test is simple, consisting in the addition of a very dilute hydrochloric acid to a certain quantity of punctate. The acid, tenth-normal, is diluted with 299 parts of distilled water, and one c.c. of punctate is added to 5 c.c. of dilute acid. In meningitis the mixture becomes turbid perhaps in a few moments or perhaps not until a half hour. This reaction never occurs in a normal punctate. The second group of punctates is that of acute purulent meningitis, but the reaction while positive in these cases is for obvious reasons of no special diagnostic value. Other groups of punctates are respectively those of paralysis, cases of any sort which simulate meningitis, and miscellaneous unclassified cases. The only actual claims made are two. Tuberculous meningitis may be diagnosticated outright, since it would not be confused clinically with acute purulent meningitis, while meningitis of any sort may be excluded by negative reaction.

Insurance Medicine.

SUGGESTIONS TO MEDICAL EXAMINERS.

BY THE INSURANCE EDITOR.

THE PHYSICAL EXAMINATION.

Cough and Hoarseness.—An occasional cough will usually be too trivial to report if a careful search has failed to reveal a serious cause. It may arise from a slight congestion of the fauces or pharnyx, a few granulations at the back of the throat, or a long uvula, or it may be due purely to nervousness, all these conditions being inconsequential. When the cough is habitual or constant, however, the examiner should report it in any event as well as making a rigid examination.

Respirations.—Deviations from a normal rate of respiration are seldom met with in life insurance examining. Nevertheless the rate should always be taken, and if it varies much from 18 to 20 a minute the cause should be looked for. Labored respiration is encountered occasionally in applicants who are subject to chronic bronchitis, emphysema or asthma. Chronic hoarseness or huskiness should always be reported with the cause.

Expansion of the Chest.—Examiners often refer to a large chest capacity as a valuable indication of the manner in which the lungs perform their functions. In an ordinary healthy man of average height and build the difference between inspiration and expiration is about two to three inches, whereas in abnormal conditions there may not be an inch in difference.

Great expansion of the chest is often the result of practice. On the other hand, deficient expansion may be encountered in individuals who, though robust and healthy, are stout or sedentary in their habits, and, through lack of practice, do not know how to expand their chest, especially when they are asked to do so. The examiner will have to give some instruction to such applicants before he can get them to show their normal capacity.

In incipient or even in the more advanced but still early ages of pulmonary disease the movements of the chest may be so unrestricted that the expansion will afford no evidence of trouble.

The Lungs.—Every examination of the lungs should be made with the chest bared in accordance with the suggestions and illustrations previously given in the section under "General Methods in Examination." If those precautions are observed the examiner will be in a position to discover any lesion from the apex to the base.

It must always be kept in mind by the examiner that he is apt to meet cases of pulmonary tuberculosis in the very earliest stages when the signs are easily overlooked. Most of these applicants will not have any history of previous cough, hemoptysis, loss of weight, night sweats, or a bad family history to put him on his guard, so that in these cases more than any other, probably, grave errors are avoided only by the exercise of the utmost care and thoroughness in every examination. Unless the examination is made in a quiet place where there are no distractions and the chest is properly bared, the signs of incipient disease in the chest will often escape detection. While these remarks apply to all applicants, they are particularly fitting to light weights with poor family histories and personal histories of dyspepsia or indigestion.

Examiners should remember that every deviation in the chest from the rule does not necessarily indicate a diseased condition. The physiological differences in the percussion note or in the respiratory sounds between the two sides of the chest may be considerably exaggerated in healthy individuals and, with a few, similar conditions, should not be recorded after an extendeed examination has eliminated all possible diseased conditions. A slight prolongation of the expiratory sound, if uniform on both sides and not caused by emphysema, a few crackles bilateral at the base and no dullness showing the presence of some old adhesions without thickening of the pleura, or the slightly harsh respiratory murmur in elderly as compared to that in younger people are a few of the conditions not worthy of reporting, always provided that extra care has been taken to discover more serious causes.

Applicants who have had pleurisy are acceptable after a reasonable length of time has elapsed, provided there was no suspicion of tuberculosis and that no thickening of the pleura remains; in these cases a few friction sounds may be expected. A full history as to the date, duration, complications, if any, whether it was dry, with effusion or purulent, and whether there was any suspicion of tuberculosis will be required, and the only one who can intelligently supply these data is the attending physician. The applicant is expected to furnish this statement from his physician. In addition to this the examiner must give a definite, explicit description of the physical signs remaining.

Acute Colds.—Applicants frequently present themselves for examination while subject to acute colds. The ailment may seem too trivial to report. It must not be forgotten, however, that an ordinary cold is often the precursor to pneumonia or bronchitis, especially if the applicant is indiscreet while under the influence of the cold. It is the duty of the examiner, therefore, to mention ordinary colds in the report and make a re-examination later, informing the home office when full and complete recovery has taken place.

Pulmonary Emphysema.—Keller tells of examining in 1878 a country messenger 33 years old, and advising special rates because of moderate emphysema and the fact that the applicant had to do a good deal of hill climbing in his occupation. The insurance company refused the application altogether. The applicant continued at his work, and in the year 1912 Keller was called to treat him for trouble in walking, weakness, etc. Keller found a high degree of arteriosclerosis, which may have been due to the constant and excessive use of alcohol; singularly enough the patient, now 67 years old, showed almost the same degree of emphysema as on the first examination for insurance. This case has taught Keller not to be too fearful of recommending applicants with emphysema for life insurance; while numerous minor symptoms and complaints may be due to this affection, severe grades of it threatening life or shortening life expectation are rarely met with. An additional premium may be justifiable in cases of emphysema, but refusing insurance is bad business as well as unfair to the applicant.—*Blätter für Vertrauensärzte der Lebensversicherung*, March and April, 1912.

American Association of Medical Examiners.—The next annual meeting of this association will be held at Minneapolis, June 2 and 3, 1912, under the presidency of Dr. Frank W. Foxworthy of Indianapolis. The secretary is Dr. G. Strohbach, Miami Building, Cincinnati.

Book Reviews.

UROLOGY. The Diseases of the Urinary Tract in Men and Women. A Book for Practitioners and Students. By RAMON GUITERAS, M.D. (Harv.), Professor of Genito-urinary Surgery, New York Post-Graduate Medical School; Visiting Surgeon to the Columbus and Post-Graduate Hospitals; Consulting Surgeon to the City and French Hospitals; Formerly Professor of Anatomy, Operative Surgery and Gynecology, Post-Graduate Medical School, and Visiting Surgeon to the Department of Genitourinary Diseases and Gynecology, New York City Hospital; Member of the American Medical Association, the American Urological Association, the French Urological Association, the American Public Health Association, the American Association of Genitourinary Surgeons, the American Association of Obstetricians and Gynecologists, the Association of Military Surgeons of the United States, the American Society of Tropical Medicine, the New York Academy of Medicine, and the Harvard Medical Society. With Nine Hundred and Forty-three Illustrations in Text and Seven Plates. Volumes I and II. Price $10.00. New York and London: D. Appleton & Company, 1912.

THE two volumes before us comprise a complete treatise on the diseases of the urinary tract in both sexes by a man whose long activity as a practical surgeon in this field and as a teacher to post-graduate students have made him peculiarly fitted to be the author of such a book. Because of such experience Dr. Guiteras has succeeded in presenting his subject in such a manner as to leave nothing to be desired in clearness of exposition and directness of instructions. The wealth of illustrations, almost a thousand, add greatly to the teaching value of his work.

Perhaps the best way of acquainting the reader with the scope of the work is to quote some of the chapter headings which follow: History and Diseases of the Urinary Tract, the Anatomy of the Genitourinary Tract, the Urine, Discharges, the Blood in Relation to Urology, Urological Equipment, Sterilization of Instruments and Apparatus, Technique of Instrumentation, Urethroscopy, Cystoscopy, Special Urinary Symptoms, Urinary Fever, Urinary Infection, the History of the Case, General Symptoms, Examination of Patients, Urological Therapeutics, Anesthesia in Urology, Diseases of Metabolism, Methods of Examining the Kidney, Kidney Injuries, Movable Kidney, Nonsuppurative Neophritis, Nephrolithiasis, etc., etc. The second volume is devoted mainly to the diseases of the bladder, of the prostate, of the urethra, of the testicles and scrotum, and the various chapters are just as detailed in contents as those mentioned above.

The book must become a necessary equipment to every specialist in genitourinary disease. On the other hand, no better treatise can be recommended to a non-specialist who desires to possess one authoritative work on the subject for purposes of reference.

SPONDYLOTHERAPY. Physiotherapy of the Spine Based on a Study of Clinical Physiology. By ALBERT ABRAMS, A.M., M.D., F.R.M.S., Consulting Physician to the Mount Zion and French Hospitals, San Francisco; Formerly Professor of Pathology and Director of the Medical Clinic, Cooper Medical College (Department of Medicine, Leland Stanford Junior University), San Francisco. Third Edition, Enlarged. San Francisco: Philopolis Press, 1912.

THE fact has been known for long empirically that applications to and manipulations of the spine produced certain favorable effects upon some conditions which other treatment had failed to benefit. Thus it has come to pass that spinal massage and so on in the hands of practitioners of some schools have been lauded as cure alls, and this form of treatment has gained the confidence of a large section of the community. Dr. Abrams has thoroughly investigated various visceral reflexes which bear his name and has thereby been led into a deeper study of spinal therapeutics, the results of which he has embodied in a work on the subject. The book has gone through two editions, which speaks well for its reception, while the present edition has been enlarged by the addition of seven chapters and fifty new illustrations. In the preface to the third edition and in a chapter of the book, the author takes the opportunity of criticising some of the reviewers of the former editions and expresses regret that our medical journals have not yet attained the Utopian condition when they are eager to give space to the protestations of an author who feels that his work has been misinterpreted or unjustly criticized. It should be both to the advantage of readers, the journal and the author that the *raison d'être* of a work should be made clear, and therefore medical journals should not be averse to publishing explanatory letters. However, Dr. Abrams explains with commendable lucidity in the book itself spondylotherapy from seemingly every possible standpoint. The work is interesting and instructive even if one is unable to wholly believe that the method of treatment is indicated in all the complaints to which the author refers. The book is well printed and the illustrations are clear. The additions double the size of the work and provide suggestive reading.

DIE DIAGNOSTISCHE UND PROGNOSTICHE BEDEUTUNG DER HARNSEDIMENTE NACH NEUEREN ANSCHAUUNGEN. Von Dr. C. POSNER, Prof. an der Universität Berlin. Price 1.40 marks. Halle: Carl Marhold Verlagsbuchhandlung, 1912.

IN this excellent contribution to the series of monographs on metabolic disorders edited by Dr. Albu, the author discusses the significance of urinary sediments. In spite of the extensive consideration he gives to the matter of the inorganic substances that present themselves in this connection it is evident that there is still very little reason for attaching much importance to their appearance. In most instances the occurrence of deposits of urates, phosphates, uric acid, oxalates, etc., is dependent on physical rather than metabolic causes, and the few conditions under which this is not the case are satisfactorily described. The question as to whether or not casts can appear without the presence of albumin in the urine is still regarded by many authorities as an open one, but Posner is strongly of the opinion that they may, rarely, be found in albumin free urine. He also emphasizes the fact that it is impossible to determine the point of origin along the genitourinary tract of the epithelial cells found in the sediment—a fact which some microscopists still find it difficult to accept. The utility of the dark field method of illumination, and of the polarizing microscope in studying the organized sediments is pointed out, and there is also a brief discussion of the microorganisms to be found.

INVESTIGATIONS ON DYSENTERY IN FIJI, During the Year 1910. By P. H. BAHR, M.A., M.B., B.C., D.T.M.&H., Cantab., M.R.C.S., Eng., L.R.C.P., Lond. Together with an Account of the Occurrence and Spread of Dysentery in the Pacific in Former Years by B. GIANVILL CORMEY, I.S.O., M.R.C.S., for Twenty Years Chief Medical Officer, Fiji. With Colored and Monochrome Plates and Many Charts. Price 6 shillings net. London: Witherby & Co., 1912.

DR. BAHR studied dysentery for thirteen months in Fiji, and this report to the London School of Tropical Medicine embodies the results of his investigations. The report is preceded by a remarkably interesting paper by Dr. G. Corney, who was for twenty years chief medical officer of the colony. The mortality from dysentery has greatly lessened since Dr. Corney first went to Fiji and has continued to decrease in virulence. Dr. Bahr investigated the disease bacteriologically, clinically, and from the standpoints of pathology, epidemiology, treatment, and prophylaxis. The chapter dealing with amebic dysentery is especially instructive and other points of particular interest are portions of the book concerned with the treatment of acute dysentery by intestinal disinfectants and the antiserum treatment. Bahr is unable to draw any definite conclusions from the treatment, but is inclined to think that the combined method of antiserum injection, together with the administration of salines and disinfectants, gives the best results. The report, which is issued in the form of a supplement of the *Journal of the London School of Tropical Medicine*, is well printed and contains some excellent colored and monochrome plates. It is a useful addition to our constantly increasing store of knowledge concerning tropical diseases.

UEBER PYODERMIEN, die Infektionen der Haut mit den banalen Eiterregern. Von J. JADASSOHN, Bern, Sammlung Jadassohn, Band I. Heft. 2. Price M. 1.80. Halle a. S.: Carl Marhold Verlagsbuchhandlung, 1912.

IN this monograph the author proposes a new nomenclature and classification for certain skin diseases. This is based upon the etiological factor and therefore upon firm scientific grounds, a method of attack which dermatology as a whole sadly lacks. Those skin diseases which are due to the staphylococcus and the streptococcus are clearly described and classified. In some instances the epidemiology of the affection is discussed. Therapeutics and prognosis are briefly referred to at the end of the work.

A Manual of Surgical Treatment by Sir W. Watson Cheyne, Bart., C.B.D.Sc., LL.D., F.R.C.S., F.R.S., Hon. Surgeon in Ordinary to H. M. the King; Senior Surgeon to King's College Hospital, and F. F. Burghard, M.S. (Lond.), F.R.C.S. Surgeon to King's College Hospital and Senior Surgeon to the Children's Hospital, Paddington Green. New Edition, entirely revised and largely rewritten with the assistance of T. P. Legg, M.S. (Lond.), F.R.C.S. Surgeon to the Royal Free Hospital; Assistant Surgeon to King's College Hospital, and Arthur Edmonds, M.S. (Lond.), F.R.C.S. Surgeon to the Great Northern Central Hospital; Surgeon to Out-Patients, The Children's Hospital, Paddington Green. In Five Volumes, Vol. I. Price $6.00. Philadelphia and New York: Lea & Febiger, 1912.

The first edition of this work appeared about a dozen years ago and was at once welcomed by surgeons. It is now presented in a revised form, with ample additions and such changes as are necessary to bring it up to date. The work appeals to the practitioner rather than to the student. The latter is concerned more especially with the pathology, symptomatology and diagnosis of surgical conditions; whereas the practitioner frequently requires full and detailed information as to the best methods of treatment. The authors have made a careful selection of methods, and only present here what they have found by personal experience to be of value. The present volume includes sections on inflammation, suppuration, ulceration, gangrene, wounds, and their complications; burns, scalds, and frostbites; infective diseases of wounds; affections of cicatrices; syphilis; tuberculosis; tumors, deformities of the fingers and toes; flat-foot; club-foot; curved tibia and fibula; genu vaigum, varum, and recurvatum; curvatures of the neck of the femur; congenital dislocation of the hip; kyphosis, and scoliosis. There is an appendix with two very complete chapters on anesthetics and blood examination in surgical conditions. The book is not at all narrow in its scope; and the title "Surgical Treatment" is very liberally interpreted. In the chapter on syphilis will be found a discussion on Salvarsan, and a description of its administration by the intravenous method; and under the heading of scoliosis is a full account, with illustrations, of exercises which have been found useful in this condition. The reader may not agree with every statement contained in the volume, for example in the discussion on asepsis and antisepsis on pages 99 and 153; but the authors describe both methods, and then give their preference, with reasons for the same. For the beginner, or one with but little experience, the present work is invaluable; at the same time most surgeons will find it a useful addition to their library.

Cornell University Medical Bulletin. Studies from the Department of Medicine, including Therapeutics and Applied Pharmacology. New York: Cornell University, 1912.

This volume contains a number of reprints of articles by several members of the Cornell University Medical College. Among the contributors are Doctors W. G. Thompson, L. A. Conner, W. L. Niles, F. S. Meara, T. W. Hastings, B. R. Hoobler, M. Neustadter, W. C. Thro, H. J. Schwartz W. H. Sheldon, A. I. Ringer, A. C. Crehore, W. Coleman, and E. F. DuBois. As all of these papers have appeared in various medical journals it is more than likely that our readers have already seen them, either in their original form or in abstract.

Progressive Medicine. A Quarterly Digest of Advances, Discoveries and Improvements in the Medical and Surgical Sciences. Edited by Hobart Amory Hare, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College, Philadelphia. Assisted by Leighton F. Appleman, M.D., Instructor in Therapeutics, Jefferson Medical College, Philadelphia, March 1, 1912. Price $6.00 per annum. Philadelphia and New York: Lea and Febiger, 1912.

The first article in the current number of Progressive Medicine is by C. H. Frazier, on Surgery of the Head, Neck, and Thorax. It begins with a useful and timely summary of what is known about the Hypophysis. The whole of this article, of nearly one hundred pages, is most valuable. The subject of Infectious diseases, including Acute Rheumatism, Croupous Pneumonia, and Influenza, is by J. Ruhrah. Curiously, neither Pneumonia, Rheumatism, nor Influenza occurs in the index. F. Crandall contributes the article on Diseases of Children, and D. B. Kyle and A. Duel supply the articles on Rhinology and Laryngology, and Otology, respectively. Colon bacillus infection, in the index, should contain a reference to page 256.

A Compend of Human Physiology. Especially Adapted for the Use of Medical Students. By Albert P. Brubaker, A.M., M.D., Author of "A Text-Book of Physiology"; Professor of Physiology and Medical Jurisprudence in the Jefferson Medical College; formerly Professor of Physiology in the Pennsylvania College of Dental Surgery; Lecturer on Anatomy and Physiology in the Drexel Institute of Art, Science and Industry; Fellow of the College of Physicians of Philadelphia. Thirteenth edition, with 26 illustrations. Price $1.25 net. Philadelphia: P. Blakiston's Son & Co., 1912.

This compend on physiology has long been a favorite with medical students, and doubtless the new edition will enjoy the popularity of its predecessors. We note the omission of the "Table of Physiologic Constants," which was a useful feature of the former editions. In the index we find no mention of Spleen, Metabolism, Ductless Glands, Feces, Reaction of Degeneration, Respiratory Quotient, and many other terms which a student might expect to find there.

Elements of Hydrotherapy for Nurses. By George Knapp Abbott, M.D., Dean of the Faculty and Professor of Hydrotherapy and Practice of Medicine in the College of Medical Evangelists, Loma Linda, Cal. Washington, D. C.: Review and Herald Publishing Association.

If, as the author asserts in the preface of this book, there is an "urgent need of a nurses' text-book on hydrotherapy," he is certainly one of the first to come forward and aid in filling this deplorable gap in the already voluminous literature supplied to the nursing profession. The first part of the book deals with the physiological effects of water; the second with the therapeutics, and the third with the technique of hydrotherapy. The author is an ardent advocate of this method of therapy, and prefers it to quinine in the treatment of malaria. The book should prove of service to nurses who have to look after patients undergoing this form of treatment.

Diseases of the Genitourinary Organs and the Kidney. By Robert H. Greene, A.M., M.D., Professor of Genitourinary Surgery, Medical Department of Fordham University; Genitourinary Surgeon to the City and to the French Hospitals, New York City; and Harlow Brooks, M.D., Assistant Professor of Clinical Medicine, University and Bellevue Hospital Medical School; Visiting Physician to the City Hospital and to the Montefiore Home for Chronic Invalids, New York City; Consulting Pathologist to the Muhlenberg Hospital, Plainfield, and to the Hackensack Hospital, N. J. Third Edition, Revised and Enlarged, with 339 Illustrations. Price $5.00. Philadelphia and London: W. B. Saunders Company, 1912.

It is quite fitting that a work of this kind should be written through the collaboration of a physician and a surgeon, for in no domain of medicine more than in diseases of the genitourinary organs and the kidney do medicine and surgery meet in such a wide territory of common jurisdiction. The present edition not only attests the popularity which this work has achieved, but also signalizes the distinct advances that have been made within recent years in the study of genitourinary diseases. Thus the newer tests showing permeability of the kidney, including the phenolsulphonephthalein test are fully described. It is difficult to pick out any one feature of this work for special commendation, so admirably have all the various phases of the medical and surgical treatment of the diseases of the kidneys and genitourinary organs been described. The work is an eminently practical one; the subject of treatment being presented in satisfying detail. As in the former editions the illustrations, typography, and binding leave nothing to be desired.

A Pocket Formulary. By E. Quin Thornton, M.D., Assistant Professor of Materia Medica in the Jefferson Medical College, Philadelphia. Tenth Edition, Revised. Price $1.50. Philadelphia and New York: Lea & Febiger, 1912.

The appearance of the tenth edition of this work amply testifies to its popularity. That it has kept pace with the recent advances in medical science is indicated by the recognition given in the present edition to salvarsan, human blood serum, antimeningitis serum, and bacterial vaccines. The various diseases are arranged in alphabetical order, and under each are given a large variety of prescriptions. A useful feature of this work is the fact that in connection with each prescription there is noted the definite indication which it is designed to meet. The book is compact, well printed, and handsomely bound.

Society Reports.

CONNECTICUT STATE MEDICAL SOCIETY.

One Hundred and Twentieth Annual Meeting, Held at New Haven, May 22 and 23, 1912.

(*Concluded from page 44.*)

Adventitious Bands about the Cecum.—Dr. JOSEPH M. FLINT, of New Haven, said that the membranous pericolitis, occurring about the cecum had a more or less regular distribution, and might be divided into three groups. That the first group extended from the parietal peritoneum, near the hepatic flexure, and on to the lateral and ventral aspect of the ascending colon, leaving the caput ceci free. Occasionally those might cover the cecum and the appendix as well. That the second group included more limited veils, which extended from a corresponding part of the peritoneum over the caput ceci, and involved the appendix. In those cases the ascending colon was free. The third group included veils with a similar origin, which might pass over the colon and become continuous with the omentum along the mesial aspect of the large bowel. He also said that the first two types of veils resulted from an extension of the usual fusion that occurred between the rotated intestine and the parietal peritoneum; and that the fine delicate attachments sometimes extended over onto the ventral aspect of the ascending colon, and were drawn out into membranes in the subsequent descent. Those membranes, or veils, usually caused no symptoms; but, when badly placed, they produced obstruction, and involved or kinked the appendix. He explained that Lane's band was due to an extension of the process of fusion to the terminal portion of the ileum, and that it was found in embryos. Descent, when that attachment was present, had often shortened the posterior leaf of the mesentery and kinked the gut; and an embryonic band had occasionally given symptoms between the gallbladder and transverse colon and omentum.

Dr. WILLIAM F. VERDI of New Haven remarked that it had been ten or twelve years since he first observed the pericolic bands, and that he had found four types, instead of three. He had been unable to decide definitely whether it represented embryological structures, while the bands did resemble normal structures, yet they were of so long standing that they appeared to be congenital. Besides, they did not cause so much trouble as one might think. He stated that a few years before he had operated on a patient who had had a *bonâ fide* intestinal obstruction, which was due to a Lane's kink; but that he had also operated on others in whom the obstruction had produced no symptoms, the condition having been found in the course of his operations for other causes.

Dr. EVERETT J. MCKNIGHT of Hartford said that for some time he had felt that many of the bands which had been met with at the time of operation were congenital. He cited a case that he had operated on seven or eight years before, in which the patient—a woman—had presented symptoms of gradually increasing obstruction, which he had thought to be due to malignant disease of the cecum. When incision was made into the right rectus no tumor was found; but there was a marked membrane attached over the cecum and ascending colon. Finally he found a small, annular carcinoma of the sigmoid, which he operated on. Dr. Everett thought it was difficult to decide what should be done when those adhesions were met with, and seemed to feel that every man would have to decide for himself whether they were causing trouble or not; if they were, section should be made.

Dr. FLINT declared that it had come to be the custom to associate either a Lane's band or appendicitis with those symptoms.

The Surgical Treatment of Goiter.—Dr. O. C. SMITH of Hartford said that the term goiter was very broad and far from distinctive, and that it indicated a morbid enlargement of the thyroid gland. The cause, though unknown, had many variable anatomical features. In the case of colloid, cystic, and nodular goiter, the risk of operation was small, and the relief generally permanent; while with the swollen thyroid, of puberty and pregnancy, the case called for rest, hygiene, and conservation of the nervous system. Dr. Smith felt that with the improvement in technique and methods, and if discrimination were used in the selection of cases, the hazard of operation for simple goiter was negligible; while in hyperthyroidism, the result ought to be as satisfactory, and the mortality lower than in most other acute lesions, all of which demanded surgery that had as its goal the saving of life and the minimizing of morbidity.

Dr. HENRY M. LEE of New London remarked that in approaching that subject one should always have in mind the varying and conflicting syndromes that would be presented—from the picture of a large cystic goiter, without symptoms, to the hyperthyroid cases which seemed as though they would run to destruction. He said that the best classification that had been made was the one by Dr. Bacon; and that in approaching such cases one should subject them first to a critical diagnosis, to determine what type they belonged to, and should then treat them medically before intervening surgically.

Dr. LEONARD W. BACON, JR., of New Haven, said that acute strumitis was not a common difficulty, but that he had seen a case with distinct local symptoms of inflammation and the classical signs of inflammation in the thyroid region, but with no general symptoms of disturbance in the thyroid function. He did not consider the type of goiter that extended beneath the sternum, and possibly had its most considerable development there, as presenting very grave difficulty. The fact that it rose and fell with respiration indicated that its attachments were very loose. He had sometimes removed from behind the sternum one that promised to be a mass the size of the fist. In regard to the point made by Dr. Smith as to the discrepancy between the clinical and the etiological findings, Dr. Bacon said that he had found, in one case that he had operated on, flakes of true bone disseminated throughout the gland. In the case of enlarged and soft goiter, he said that a simple way in which to make the diagnosis was to thrust the whole goiter to each side, alternately, and then palpate the other side. In this way one could get evidence of enlargement that one could not get when the goiter was in the median line of the neck. He thought that the author of the paper did not do entire justice to the benefits that might be received from medicinal or quasi-medicinal treatment.

Dr. DANIEL F. SULLIVAN of Hartford said that it was his belief, also, that the diagnosis of exophthalmic goiter was not an easy matter, and that the treatment did not entirely belong to the surgeon. Rest and proper environment would often do more for a case than surgery; but where a patient demanded an operation, or could not submit to a long course of treatment, then the operation should be done—though it was always dangerous, and often unhappy for the good reputation of the surgeon.

Dr. RUSH said that the condition found histologically after the operation was not always that which might have been found had the gland been removed earlier.

Dr. WILLIAM W. BRACKETT of New Britain said that all the symptoms found to exist where there was a goiter, were not always the result of the thyroid trouble; one should get behind the thyroid and see what was producing the trouble. He remarked that in all schools there was a certain percentage of the children who had enlarged thyroids, and that the parents should be told that the thyroids of their child were not strong and that he must be kept away from too much excitement.

Dr. SMITH said that hyperthyroidism was a medical disease and should be treated medically; but should medical treatment fail, then surgical treatment was essential. He reiterated that rest, hygiene, and the use of sera were important in the treatment of that disease.

The Medical School.—Dr. JOHN G. STANTON of New London delivered this as the President's address. He did not consider the medical schools of today fully up to the requirements necessary to a thorough foundation and superstructure for instruction, though he remarked that there were a few schools where the student had to fulfill the requirements of a full, thorough, and well-grounded medical education before he could gain his diploma. He felt that the fault did not lie entirely with the too numerous low-grade medical schools, but with the public, who were to blame fully as much as the proprietors of the medical "gristmills." The question of medical education confronted a condition, not a theory. He declared that the task before those who were competent to mold public opinion was to educate the citizens, and satisfy them that the medical profession were actuated by an honest desire in demanding a higher standard of medical education. And that the ultimate results sought meant a conservation of the public's best interests, in producing a class of physicians who should be thoroughly educated in medicine and competent to assume the responsibilities of a profession that entered so deeply into the family relation.

Recent Developments in the Diagnosis and Treatment of Tuberculosis.—Dr. WILLIAM B. BARTLETT of Hartford mentioned, as the most important developments in the realm of tuberculosis in the past few years, the

following: (1) Increased accommodations for the tuberculosis invalids and the growth of the sanatorium idea; (2) the evidence that bovine tubercle bacilli caused many forms of surgical tuberculosis in children, that it was much less frequent in adults, and that it might even cause pulmonary infection; (3) the development of the *x*-ray in diagnosis, and the relegation of the tuberculin test to a place of secondary diagnostic importance; (4) the development of lung surgery; (5) the evidence that the average patient will do far better when fed moderately and sanely than when stuffed until his stomach rebels.

Dr. FRANK B. STANDISH of New Haven said that great advance had been made with regard to the *x*-ray work. One of the most interesting things in the way of treatment was the method of compressing the lung by means of an artificial pneumothorax. This operation had been used mostly in early cases. He felt that the danger of contagion had been treated too lightly; that enough care had not been used to prevent contagion in the tenement-house districts.

Dr. LEONARD J. LOEWE of Falls Village said that he was impressed with the uncertainty manifested in most of the tuberculosis tests and the lack of something definite in the different diagnostic signs. He felt that the only certain method was a physical examination, made by a competent man. He said that tuberculosis was generally latent in the patient's body for some time before it was manifested after an illness or nervous breakdown; that there was no specific as yet, and that he believed the greatest advance in the future would be along the line of tuberculin. He was heartily in favor of the sanatorium treatment, with complete rest at first, and a little work later on, as the patient grew stronger.

Dr. STEPHEN J. MAHER of New Haven felt that in pulmonary tuberculosis, tuberculin was secondarily important to proper physical and microscopic examination; but in other forms tuberculin was of primary diagnostic importance.

Dr. DAVID RUSSELL LYMAN said that more would have to be done in regard to the eradication of bovine tuberculosis before human tuberculosis could be stamped out. He declared that tubercle bacilli were served up at the tables throughout the land, and in the nurseries, every day, and that no great strides could be made in the State until it was made impossible for dealers to import tuberculous milk cows into Connecticut.

Dr. BARTLETT reiterated the idea that the tuberculin test had been given a place of secondary importance, not on account of its therapeutic value, but on account of its diagnostic value.

The Diagnosis and Complications of Atypical Pneumonia.—Dr. KATE C. MEAD of Middletown said that during the winter months pneumonia led all other diseases as a cause of death in Connecticut. She observed that a typical pneumonia was difficult to diagnose, and that its presence had often to be surmised, as no positive signs were apparent, especially in children and old persons. Where nephritis was one of the complications of pneumonia, it was apt to prove fatal. Pregnancy was a rarer complication. She said pneumonia was sometimes mistaken for appendicitis in young children, and that there was a similarity in the pain and its location during the first few days of the disease. Dr. Mead thought that the diagnosis would be greatly aided by studying the relation between the temperature, pulse, respiration, and the blood pressure, and by finding the pneumococcus in the blood.

Dr. FRITZ C. HYDE of Greenwich considered it a deplorable fact that many physicians made a diagnosis of pneumonia in cases in which no signs of that disease could be found. He felt that the leucocyte count often gave a valuable hint; but differed with Dr. Mead in the idea that no case had ever recovered where there was an irregular heart-action before the crisis.

Dr. CHAS. J. FOOTE of New Haven thought that the title of Dr. Mead's paper was somewhat misleading, because it dealt with pneumococcic infection, which was quite different from pneumonia. Pulmonary pneumonia was simply one manifestation of pneumococcus infection, he said, and atypical pneumonia was caused by some other organism. If there was a double infection, there would be an atypical run of pneumonia; but if there was simply infection with the pneumococcus the course would be fairly typical.

Dr. GEORGE BLUMER of New Haven said that he had seen four different kinds of what he called atypical pneumonia, or pneumonia which simulated other diseases. There was the form simulating meningitis; that which simulated appendicitis; the third type, which was characterized by immense board-like, abdominal distention; while the fourth occurring in young infants, was associated with earache, and was usually diagnosed as otitis media.

The State Board of Health.—Dr. EDWARD K. ROOT of Hartford said that the State Board of Health was created to carry out two functions. The first was to supervise the vital statistics of the State; but the second was too broad to go into detail with, though one of the duties which the second function involved was inspection of public hospitals, schools, etc. The author stated that the board had practically no mandatory powers over any citizen, over his person or his property unless he was suffering from cholera or yellow fever, which was epidemic. The only authority the State had over the different towns was that of appproval; that it could not quarantine. Dr. Root declared that the State Board of Health should have power to issue rules in matters concerning the preservation of public health, which rules should be mandatory on all towns alike. The board should also have the general oversight and authority of public water supplies, public systems of sewage, the pollution of streams, rivers, and harbors throughout the State. That all matters involving the construction of large public works, the collection and distribution of public water supplies, could only effectively be made by the State, and the board was the logical and proper authority to have charge of those matters. He said that if the members of that Society would cooperate and urge upon the legislators the desirability and necessity of concerted action on the questions before mentioned, they would soon gain legislative sanction.

Dr. CHAS. P. BOTSFORD of Hartford remarked that most of those present knew what very large powers other State Boards of Health had, and that he, personally, thought that the time had passed when the towns of Connecticut could settle their sanitary affairs for themselves, without regard to their neighbors, and that if the State was to keep up with the progress of sanitary advancement, more power must be given the Connecticut State Board of Health.

Dr. H. D. PEASE of New York City said that New York State had passed through the same stages that Connecticut was now going through. Many efforts were made, some of which were successful, while he was a member of the board, to obtain powers outlined by Dr. Root in his paper, as desirable. He said there was no power given the Federal Government by the Constitution that permitted it, directly or indirectly, to step in and have anything to do with health matters in the several States; but that the powers so carefully outlined by Dr. Root should be given the State Board.

Dr. WILLIAM H. DONALDSON of Fairfield declared that it was a disgrace to the medical profession that they should go on under the present administration of sanitary matters. The medical profession of Connecticut had, for years, been under the thumb of the legal profession, and anything they sought for advancement or improvement could only be had by the consent of the legal profession. He said that it was time for their profession to take a decided stand and do something; they should all use their influence to insure the passage of the Owen Bill, for once it was carried through they would have the national power, which could direct them in the constitution of their State Board.

Officers.—The following officers were elected: *President*, Dr. E. T. Bradstreet of Meriden; *Vice-Presidents*, Drs. Frederick Gilnack of Rockville, and A. E. Barber of Bethel; *Secretary*, Dr. Walder Tileston of New Haven; *Treasurer*, Dr. Joseph H. Townsend of New Haven.

The next meeting will be at Hartford the latter part of May, 1913.

AMERICAN PEDIATRIC SOCIETY.

Annual Meeting, Held at Hot Springs, Va., May 29, 30, and 31, 1912.

THE PRESIDENT, DR. WALTER LESTER CARR OF NEW YORK, IN THE CHAIR.

President's Address: The Relation of the American Pediatric Society to the Movements for the Reduction of Mortality in Infancy and Childhood.—Dr. WALTER LESTER CARR made this address, in which he referred to the work of conservation to which public sentiment had been awakened in all lines, but more especially to the awakened appreciation of the value of health and life. It was only necessary to look over the Index of the Transactions of this Society to note the changed point of view of the profession as evidenced by the titles of papers presented in recent years. Now the topics con-

cerned nutrition and problems of metabolism, while formerly the subjects were more often of clinical and pathological interest. This society and other medical societies had felt the influence of organizations outside of their direct sphere of activity. Some of these influences had made a change in their attitude toward disease. Popular knowledge of science and medicine had led to the formation of societies for the public good along educational lines. One such society, the aim of which had been not only medical, but also progressive and educational, had brought to discussion the views of clinicians and sanitarians and by the publicity given its meetings and publications had aroused public sentiment and effected many reforms. Boards of Health and Milk Commissions had enlarged the sphere of preventive medicine and their efforts had been reflected in this society more largely perhaps than in any similar body of medical men. Infant mortality, child labor, and physical betterment, although interwoven with economic problems, confronted them and became more important with a lowered birth rate, and it was an essential requirement that the surviving members of the race should be endowed with the highest potential efficiency to improve their physical standards and to build upon them a more controlled and stable human machine. Allowing that there were many aspects of these problems that could not be made part of the regular program of these meetings, they had a responsibility which their organization could not pass on to those whose knowledge was less definite than theirs, nor could they in justice to themselves and the community relegate the topics to other societies without giving them expert advice. They could widen their sphere of usefulness by having representatives appointed to affiliate with organizations having to do with child betterment. Such representatives could confer on problems of social, economic, and pedagogic importance and would be ready to present information of the physical needs of the growing child and the dangers of pathological influences. After referring to the work being done all over the civilized world for the reduction of infant mortality, and citing statistics showing the decrease of infant mortality from all causes, Dr. Carr said that he thought their society had been instrumental in bringing about some of the results. He thought that by constant repetition they had impressed physicians and the laity with the fact that prevention of disease was possible, and a study of cause was better than treatment of effect. Three things were essential to this society in order to secure its vitality and usefulness. First, they must add to their study of diseases observed in infancy and childhood from the standpoint of their pathological and clinical histories, comparative and tabulated records and methods of precision, so that they might judge more accurately of the semology of disease. Second, they should have a program relating to metabolic processes, more especially to those of infancy and childhood, arranged so that investigators would present to this society for discussion the results of laboratory investigations that bore on their clinical studies. From the nature of investigations made necessary along lines of development and physiological growth the laboratory offered the best field for experimental work and the pure clinician should await the deductions of members of the society who were laboratory workers. Third, the society should endorse movements having to do with physiological and economic problems relating to infancy and childhood, particularly those of mortality and disease. The society could not stand as the highest pediatric body in this country if it failed to recognize the many influences that were at work to lower the mortality in infancy and childhood, nor could its opinions be authoritative unless it co-operated officially with other agencies having this object in view. They should be ready to give hearty aid and approval to societies that approached pediatrics from standpoints other than medical.

Coagulation of the Blood in Infants and Children.—Dr. Howard Childs Carpenter and Dr. Clayton Gittings of Philadelphia presented this communication. They stated that the large majority of observations had been made upon adults and that it seemed desirable to extend the study to infants and children, both in health and disease, in order to decide, if possible, upon a standard for comparison. They considered the various coagulometers in use and the results obtained by other observers. Their clinical material had been drawn from the Children's Department of the Philadelphia General, University and Presbyterian Hospitals, and the Children's Hospital. They had made 192 examinations on 170 patients. Of these, 18 examinations of 16 patients had an undetermined coagulation time and re-examinations could not be made. Of 100 patients which gave a positive coagulation time 35 were healthy, without ascertainable disease, except such afflictions as ring-worm of the scalp and scabies (8 cases); 125 cases suffered from a variety of diseases. Grouping all the healthy cases and those suffering from disease they had found that in healthy cases the average coagulation time in 39 examinations was 9.4 minutes, the times having varied from five to fourteen minutes. In the cases that were not healthy the average coagulation time in 135 examinations had been 9.7 minutes, and had varied from five to sixteen minutes. This showed an unimportant difference between the well and the sick. The usual statement found in the literature was to the effect that there was very little difference between the coagulation time in childhood as compared with adult life, except that during the first few days of life a delay was observed. Their results for older infants and children showed no material differences from the accepted result, although the average for childhood was higher than the average for adults tested by the Biffi method. The author's time was 9.5 minutes, while Biffi's was 7 to 10 minutes. A study of the published results according to various methods emphasized the following facts: First, that in each individual disease the maximum and minimum figures usually showed a wide variation. A second noteworthy fact was that the various diseases showed average differences which could hardly be considered of any real importance. They emphasized the fact that the average figures showed much less variation than those for the individual. Finally they found rather more than the usual disagreement in the results of different observers. Allowing for the personal factor and the difference in technique and method, the inconsistencies still appeared to be unduly suspicious. If these objections were valid in regard to adults their work had proved them to be equally true in the case of the child, with the added disadvantage that the examination of the coagulability of blood in children was attended with increased difficulties. It seemed to them that future efforts should be directed toward solving the problem of blood coagulability *per se*, or to a study of coagulability according to the more advanced standards, that was, the determination of the presence or absence, increase or diminution, in one or more of the various elements concerned in the formation of thrombin and in the latter's action upon fibrinogen.

Dr. Alfred Hand, Jr., of Philadelphia asked if studies of this nature had been made in typhoid fever and pneumonia. In both of these diseases there was quite a considerable formation of fibrin which caused a more or less plastic state of the blood, and this might explain the beneficial effects of drugs used in lessening the plastic state of the blood.

Dr. J. P. Crozer Griffith of Philadelphia said that nose and throat men emphasized the influence of certain agents upon the coagulability of the blood which seemed to aid them in their operative work; he felt skeptical on this point.

Dr. Howard C. Carpenter of Philadelphia, in closing the discussion, said that the coagulation of the blood in cases of broncho-pneumonia was practically normal, but it would be a mistake to draw conclusions from such a limited number of cases.

A Brief Report of an Epidemic of Sore Throat, with Involvement of the Cervical Lymph Nodes.—Dr. John Ruhräh of Baltimore made this report, in which he first referred to the epidemics of a similar nature which had occurred in European cities, and in several cities in this country in recent years. The epidemic in Baltimore began early in January and the cases increased in number and in the third and fourth weeks in February became very numerous. After the first three weeks of March there were very few of the typical cases noted. The Baltimore epidemic differed somewhat from other epidemics in that children were very largely affected, fully 50 per cent. of the cases occurring in early childhood. The organism, frequently in pure culture, which was seen in smears made from these cases, was a diplococcus with a distinct capsule, easily demonstrable with the usual capsular stains. It was Gram positive. The thermal death point in milk was 54° C. at an exposure of twenty minutes. The writer described the symptoms of four classes of cases: those of mild type, those of average severity, those of severe type, and those of unusual intensity; the last being usually due to some severe complication occurring at the onset. The complications attending the disease were remarkable for their number and intensity. The most common complication was inflammation of the middle ear, which occurred in from 30 to 40 per cent. of the cases. Next to this were irregular swellings, which rarely went to suppuration. They learned from this epidemic that a streptococcus infection might be caused by infected milk and that the disease might be very severe and attended with numerous complications and fatalities. They found that even in cold

weather milk might be the source of disease and that no matter how carefully raw milk was handled it might at times be a source of danger. The moral was that all milk should be pasteurized.

Dr. L. Emmett Holt of New York asked Dr. Adams whether he could tell how the infection got into the milk and what was the condition of the employees.

Dr. Charles Gilmore Kerley of New York said the case that had been reported interested him, as he had had a similar one. The child first had redness of the throat and swelling of the glands. This was followed by a mild pneumonia and the child was making a good recovery when a severe peritonitis developed. These symptoms subsided, when an acute nephritis supervened. Urinary suppression lasted for twenty-four hours, and when this condition improved the peritonitis returned and the child finally died after an illness of about four weeks.

Dr. Samuel McClintock Hamill of Philadelphia said that he understood that the final subsidence of the disease was due to repasteurization of the milk from the infected dairy, and he would like to know to what the preliminary fall was due, the one that occurred in March. He also asked if the milk was collected from a large number of farms and if there was any disease manifested among the cattle on the farms. With regard to the cream the committee appointed by this Association had created a standard for certification which could be relied upon.

Dr. J. H. Mason Knox, Jr., of Baltimore said he wished to speak regarding erysipelas as a complication of this disease. He had seen two fatal cases thus complicated. In both there was a little reddening of the throat, but there were no bubos. In another case there were two swollen reddened areas with points standing from three to four cm. from the surface. The erysipelas did not spread in this case and the child made a good recovery. In still another case, accompanied by high temperature, there were marked bubos and otitis media. They were also concerned as to the possible presence of peritonitis. The child made a recovery, went to Atlantic City, and after a few days developed scarlet fever, the rash lasting only four or five days. He would like to know whether any one else had had such an experience.

Dr. Fritz B. Talbot of Boston reported a case coming under his observation which a member of the Board of Health diagnosed as a diplococcus infection. There was a curious coincidence here. During the previous two summers there had occurred the same form of bacillary dysentery, but during the last summer there was a [illegible] infection of the gastrointestinal tract. A large number of babies developed pyelitis and in the majority of these the pure culture of the streptococcus was isolated from the urine.

Dr. Frank Churchill of Chicago said they were having a similar epidemic in Chicago, which was being carefully studied. He could not say how far this study had progressed, but the epidemic could not be attributed entirely to one dairy. The infection was severe and attacked many doctors. In all cases the streptococci were found.

Dr. John Lovett Morse of Boston said they had had two similar epidemics in Boston, one in the spring of 1911, which was very severe, and one this last Winter. The striking feature of the Boston epidemic was not the severity of the original infection, but that of the complications, such as endocarditis and general peritonitis. The latter cases were almost invariably fatal. Suppuration occurred in only a small proportion of the cases, but when it did occur it was deep and affected one gland after another.

Dr. John Ruräh of Baltimore, in closing the discussion, said that he could not say how the infection got into the milk; there had been considerable investigation, but they could not determine this point. In England it had been found that the infection originated from abscesses or diseased conditions about the mammary gland. The fall in the number of cases he thought was more apparent than real; it probably occurred in children who had had the disease. He had seen children with a rash strongly suggestive, but not typical, of scarlet fever. It faded away more quickly than the scarlet fever rash. He could not state as yet whether the organism was a streptococcus or a diplococcus. Dr. McCleary had studied a number of cases and had the idea that the organism was a pneumococcus. In nearly all the cases there was a combination of the streptococcus and pneumococcus. As to the treatment Dr. Ruhräh said the therapeutics used had been very unsatisfactory. When the temperature had been high, hydrotherapy had been employed and in some cases was followed by a rapid and marked drop in the temperature, while in other cases no measures seemed to have any effect. No vaccines had been used so far as he knew.

Inclusion Bodies in Scarlet Fever as a Means of Differential Diagnosis.—Dr. Matthias Nicoll, Jr., of New York read this paper, the abstract of which appeared in the report of the Section on Pediatrics of the New York Academy of Medicine, published in the Medical Record May 11, 1912.

Dr. Charles Gilmore Kerley of New York said that some four years ago two children came down on the same day with a rash like that of scarlet fever but very atypical. He sent slides to Dr. Nicoll for examination and one was reported positive and the other negative. In the case reported positive the rash disappeared in several days and the child desquammated, while in the case reported negative there were no signs of scarlet fever and the child did not desquamate. Dr. Nicoll had given them a very valuable aid in the differentiation of these obscure cases when there was a rash and yet it was impossible to tell from the clinical standpoint whether the case was one of scarlet fever or not.

Dr. Butterworth said he wished to relate his experience with yellow fever. He was sent to Vera Cruz to study that disease and after three months' work on the blood of yellow fever patients he believed that he had found a body which promised to throw much light on the disease. Later he found that this body was only a yeast fungus, so he advised them to "go slow" in this matter.

Dr. Matthias Nicoll, Jr., of New York said they had made an attempt to find out how long these bodies would last, but they disappeared in from five to twenty-eight days. The cases which did not desquamate were unquestionably German measles. Dr. Nicoll said he did not understand what Dr. Butterworth meant. These inclusion bodies were there, and were not found in any other condition, so far as he knew, except in cases of sepsis. As to what the bodies were he could not say.

Studies in Metabolism of Amaurotic Idiocy.—Dr. Henry Heiman, Dr. Samuel Bookman and Dr. Burrill B. Crohn of New York City presented this paper. They stated that the obscurity regarding the true nature of this disease was still as great as ever. As this condition was so prominently characterized by a marked and generalized degeneration of nerve cells and nerve tissue they thought it would be interesting to discover the chemical evidences in the excretions of the degenerative process which they knew to be going on. This should be evidenced by some disturbance in the excretion of those elements which were so largely an integral part of nerve tissue, namely, phosphorus and sulphur. The first case studied was that of a child fifteen months of age; the second case was that of a child seven months of age. Histories of these cases were presented and tables showing the daily average intake and output of nitrogen, sulphur, phosphorus, and chlorine, also tables showing the average daily retention percentage of intake and the absorption percentage of intake. The data showed the fact that absorption from the gastrointestinal tract and retention within the body were normal or even better than normal for all constituents determined. There was no marked disturbance for the intake and output of phosphorus and sulphur. The good absorption and retention probably indicated a hypernormal anabolic function occurring at a certain stage of the disease. When one took into account the very slow process of degeneration and the very small amount of actual phosphorus and sulphur in the entire cerebrospinal system one could understand why the daily elimination of these constituents would fail to be manifested during a short period. It would be advisable to study the disease at intervals during its course, both in the earlier stages where anabolic changes predominated and in the later stage where degenerative and catabolic process played an important part.

Congenital Obstruction of the Posterior Urethra.—Dr. J. H. Mason Knox, Jr., and Dr. Thomas J. Spruit of Baltimore reported this case. The patient was a boy, five years of age, who had had difficulty in controlling micturition from infancy. Urination occurred every half-hour day and night and was attended with no pain. Four weeks before death there occurred a sudden onset of the terminal illness with cough, abdominal pain, vomiting, and constipation. There was a tumor above the symphysis with a dull percussion note. There were also a redundant foreskin and phimosis. The patient was circumcised three weeks before death with the result of slightly improving the flow of urine. All attempts at catheterization failed. At autopsy an obstruction was found in the prostatic portion of the urethra, which was converted into a blind pouch by the fusion of its anterior and posterior walls, due apparently to an overdevelopment of folds normally present immediately distal to the verumontanum. A small triangular opening in the floor of this pouch, whose sides meas-

ured three millimeters, was the only communication with the anterior urethra. As a result there was marked dilatation and hypertrophy of the bladder, ureters, and kidney pelves, with a typical hydronephrosis terminating in uremia. They had been unable to find a similar case reported in American literature. The condition, if recognized, could be easily corrected.

Typhoid Fever in Infancy.—Dr. J. P. Crozer Griffith of Philadelphia presented this communication which consisted of an analysis of 73 cases, more than half of which had come under his own observation. This was the largest series yet published. The age limit had been fixed at two and one-half years. The statement was incorrect that typhoid fever in infancy occurred only or chiefly in family epidemics, since 78 per cent. of his cases occurred singly. The onset of typhoid fever in infancy was of decidedly shorter duration than later, the length averaging perhaps three or four days before evidence of the fully developed attack was present. The attack usually developed rapidly and was often sudden, only about one-third of the cases showing a slower appearance of symptoms. These symptoms consisted chiefly of fever, diarrhea, vomiting, prostration, headache, loss of appetite, cough in certain cases, fretfulness, and abdominal pain. Vomiting was a symptom seen decidedly more frequently than later and loss of appetite was often observed. Prostration was seldom marked. Cough and pain were infrequent and epistaxis was rare. Decided loss of appetite was uncommon. Abdominal distention was frequent, probably more so than at later periods of childhood, but was seldom distressing. Bronchitis was common. The heart and pulse were seldom much involved. The nervous symptoms, on the whole, were not marked. The course of the temperature was uncharacteristic. The complications in their order of frequency were diphtheria, pneumonia, otitis, furunculosis, measles, ulcerous stomatitis, ischiorectal abscess, parotitis, jaundice, pertussis, intestinal hemorrhage, conjunctivitis. A decided tendency to suppurative processes was seen in 18 cases. There were three relapses, possibly four. In 61 cases the diagnosis was based on the Widal test. The treatment was entirely symptomatic.

Dr. Alfred Hand of Philadelphia asked Dr. Griffith if he had attempted to classify the cases so as to tell which were under one and which under two years of age. The conclusions of Dr. Griffith bore out his own experience. The average duration of these cases did not differ so much from that in older children. The cases of long duration were those with a low temperature, from 101° to 102.5°. The diagnosis of typhoid fever in infants was as easy by the Widal test as in adults and he thought the test more valuable in infants than in adults, as in the latter there was a greater possibility of the patients' having had the disease before. Dr. Hand thought that a mortality of 16 per cent. was very high. Sometimes the initial infection was severe and the mortality rate went up in consequence. He could not recall one instance of nosebleed in an infant. As a rule the diagnosis was comparatively easy and the Widal test merely confirmed the diagnosis. It should be used far more frequently than it was in infants, as the disease was not recognized as often as it should be. Typhoid fever was not as prevalent in the Philadelphia hospitals as it was formerly.

Dr. John Lovett Morse of Boston said that Dr. Griffith's paper had covered the ground very thoroughly. While his experience had not been as large as Dr. Griffith's he agreed with him in regard to the sudden onset, the quicker fall of temperature and the greater severity and mortality of the disease. It seemed to him that the cases he had seen did not require the Widal test to make a diagnosis. The existence of leucopenia was a diagnostic aid.

Dr. Charles Gilmore Kerley of New York asked how these infants were fed.

Dr. Griffith replied that he could not make an exact answer, but they were mostly on milk diet, with sometimes the addition of broths.

Dr. Kerley said that the only way and the best way to bring up the mortality was to feed these children with milk. In twenty-four years' active practice among children he had learned that milk was absolutely contraindicated in typhoid fever.

Dr. Edwin E. Graham of Philadelphia said that his experience with typhoid fever in infants corresponded largely with what Dr. Griffith had stated, but he differed in two particulars. He had always believed that the mortality in early childhood was comparatively low, something below 16 per cent. Dr. Graham recalled the time when the hospitals were filled with typhoid cases and said that in a certain hospital which was formerly filled with typhoid fever cases they had not had a single case during the past year. However, he had recently seen three cases in Philadelphia due to house infection. Children should be garded against such infection which occurred through personal contact.

Dr. Fritz B. Talbot of Boston reported a case of typhoid fever in an infant resulting from mother's milk; the milk showed living typhoid bacilli. He asked Dr. Griffith if any of his babies were breast fed and if it was a common thing for infants nursing from the breast of a woman with typhoid fever to contract the disease.

Dr. Henry Heiman of New York said he had found it rather difficult to make a diagnosis in typhoid fever in children unless they were in the midst of an epidemic. He made it a practice to have the Widal test made in suspicious cases. It was extremely difficult to get blood cultures in young infants; probably in time they would have an improved technique which would enable them to do so.

Dr. Samuel Adams of Washington said that he had called attention to the prevalence of typhoid fever among infants some years ago and that its frequency was a fact not generally recognized at that time. So far as mortality was concerned he wished to repeat what Dr. Osler had said, that they should remember that they were dealing with hospital cases. There was a marked difference between hospital cases and those in private practice. With regard to the Widal reaction and blood culture he was glad to hear what Dr. Heiman had said. In one epidemic of typhoid fever he had tried to get assistants and had the best in the country, but they hesitated to take chances in attempting to get blood cultures in children under seven months of age. His experience was similar to that of Dr. Hand in that they had much less typhoid fever than formerly; they had difficulty in getting enough cases to demonstrate before a class of 75 students. Dr. Adams greed with the other speakers in regard to the question of diagnosis, that it was not always a difficult matter to make a diagnosis during an epidemic or when it resulted from house infection. The symptoms often presented themselves in such a way that little difficulty was encountered in making a diagnosis even in the early stages of the disease. He had often made a diagnosis from the general appearance of the patient and the history given by the parents.

Dr. Henry C. Coit of Newark, N. J., asked Dr. Griffith if, in his experience with reports from laboratories, he had received reports of positive Widal reactions in cases that presented no acute symptoms. This had occurred in his own experience and it raised the question of the possibility of a baby being a typhoid carrier.

Dr. J. P. Crozer Griffith of Philadelphia, in closing the discussion, said that, in answer to Dr. Hand's question, 60 per cent. of the babies were two years of age or less. Long-continued fever was less frequent than in older children in his experience. Regarding the occurrence of bronchitis he stated that it occurred in at least 47 per cent. of the cases; it occurred so commonly that it should be called a symptom and not a complication. He did not think it necessary to make blood cultures in infants. The Widal test was only made as a final test The leucocyte count was higher in infants than in adults None of the children in his series were breastfed. He could not agree with Dr. Kerley that the mortality was due to the milk; he believed that it was more often due to complications. If milk had a deleterious effect in children it should have the same effect in older children. In his series of 75 cases only 16 could be traced to house infection. The Widal test was made in every child supposed to have the disease, but not in those children who gave positive symptoms.

(To be continued.)

Osteitis Deformans with Chronic Eczema.—F. Parkes Weber reports the case of a compositor, aged 70, who presented the typical thickening and bending of the tibiæ and femora characteristic of osteitis deformans. The disease was as yet of only moderate degree, and was limited to his lower extremities. The changes commenced, or at least were first observed, in the left tibia six years ago, and at present they were best marked in that bone and the left femur. The eczema, to which he had been subject more or less for many years, at present chiefly affected his legs. On the whole the patient seemed to have enjoyed good general health, but had suffered twice from rheumatic fever, forty and twenty-four years ago, respectively. There was no history of any venereal disease. Nothing abnormal could be discovered in the thoracic or abdominal viscera or in the urine. A noteworthy feature of the present case was that as yet there had been no pain connected with the bone disease.—*Proceedings of the Royal Society of Medicine.*

MEDICAL SOCIETY OF THE COUNTY OF NEW YORK.

Stated Meeting, Held May 27, 1912.

THE PRESIDENT, DR. CHARLES GILMORE KERLEY, IN THE CHAIR.

Executive Session.—Injunction Served.—Announcement had been made that a new vote would be taken at this meeting on the motion to adopt the report of the Comitia Minora recommending that Dr. Robert Kuhitzer be expelled from membership in the Medical Society of the County of New York, but when the members arrived a temporary injunction from Supreme Court Justice Blanchard was found posted forbidding further action in the matter.

Report of Committee on Dispensary Abuse.—This committee reported progress in its work of investigation and invited the cooperation of individual members of the society with the committee by furnishing the names and addresses of individuals who, to their personal knowledge, had unworthily received dispensary treatment. Such information would not be made public or used as the basis for information without the approval of the donor. Such names and addresses should be sent to Dr. William S Thomas, 240 West Seventy-first street, New York City.

Certified Pharmacies.—A resolution was passed calling for the appointment of a committee of ten to confer with the American Pharmaceutical Association on the subject of certifying pharmacies in the same way that dairies are now certified.

Resolutions on the Death of Dr. Samuel Oakley Vanderpoel.—The following resolutions were passed by the society: *Whereas*, death has suddenly removed from our membership Dr. Samuel Oakley Vanderpoel, and *whereas*, Dr. Vanderpoel during his period of activity gave unsparingly of his time and energy in furthering the interests of our organization, never considering any task too great or labor too arduous and exacting to call for his best efforts, and *whereas*, Dr. Vanderpoel served the society as president from October, 1808, to October, 1899, and as a censor during the following year, and *whereas*, throughout his entire professional life he portrayed the high ideals of the true physician, and *whereas*, in his death we have lost a true friend, a faithful worker, and a respected counsellor; therefore, be it *resolved*, that the Medical Society of the County of New York, through its proper officers, express its deep sense of sorrow in the death of Dr. Samuel Oakley Vanderpoel, and that we extend to his bereaved family our sincere sympathy. *Resolved*, that these resolutions be spread upon the minutes of the society and a copy forwarded to his family. (Signed) Wendell C. Phillips, Frank Van Fleet, Charles N. Dowd.

Tuberculin Diagnosis and Therapy.—DR. JAMES ALEXANDER MILLER read this paper, in which he described the different varieties of tuberculins and the methods of their preparation. He stated that the active principle in all these tuberculins was the same and this principle was the bacillary proteid contained in solution. The clinical action of the different varieties was also similar. Many theories had been advanced to account for this action, but at present there were two that were deserving of attention, the Wolff-Eisner lysin theory and that of the histogenous hypersensitiveness. Dr. Miller then considered the reaction to tuberculin in respect to the specific, local, or focal reaction; and the general reaction, as shown by congestion, by its effect on the leucocyte count, and on general metabolism. As a diagnostic agent tuberculin had been administered by the following methods: Cutaneous, subcutaneous, intracutaneous, percutaneous, and conjunctival. The nature of the reaction was the same in all of these methods. The conjunctival method was dangerous and had been practically abandoned. Small doses of tuberculin produced a reaction only in the newborn and a very few adults. A reaction in healthy persons might be due to an overdose of tuberculin or direct toxicity, to the abnormal presence of lysin, or to an inactive lesion with the lysin persisting. The absence of reaction in positive cases might be due to the fact that in slight inactive cases little lysin was present and its activity was gone, or to the fact that the tissue damage was so great that lysin could not be produced, or because the lysin was neutralized by active tubercle bacilli so that there was no free lysin. As to the value of the subcutaneous test, each year they were going down in their conception of the dose; two or three milligrams was formerly considered the maximum dose, while now one milligram was as high as it was considered advisable to go. They now used small doses up to 0.0009 mg. Practically all adults reacted to the cutaneous test, but there was valuable information to be obtained from the time of the response. If the process was slight, the reaction might be delayed. The tuberculin test as a help in diagnosis was used less than formerly, but the diagnosis of tuberculosis could not always be made easily and it was often a valuable help. In regard to tuberculin therapy two methods had been used; first, that of small doses not increased, the reaction being judged by the opsonic index. This was the method used by Wright in England. The second method was based on tuberculin tolerance without reaction. If tuberculin was used the general condition of the patient must be good. In general, cases having fever should not be subjected to the tuberculin treatment. The chief value of the tuberculin was in chronic advanced lesions with occasional exacerbations. The extent of the lesion was no indication as to whether tuberculin should be used or not. In regulating the doses each patient was a law unto himself. No harm could be done by going too slowly and much harm might be done by going too rapidly. The administration of 0.0001 mgm. would show the sensitiveness of the patient. As much benefit was often obtained from a small dose as from a larger one. One should keep below the reaction but not too far below. The guides to the dosage were the local, focal, and general reaction. The local reaction should not last longer than twenty-four hours. The focal reaction was indicated by increased cough and expectoration, and when this was noted one should be careful and not give the doses so close together. The reaction should never go to the point of producing fever. Other guides were the opsonic index and the leucocyte count, but these were not delicate enough. Progressive dosage might be made on the decimal system or on double strength solutions. In case of reaction one should go back to the third previous dose. It was usually necessary to continue the treatment for from six months to one year. In chronic cases it might be necessary to take a second course. He usually began with 0.001 mg. and if there was no reaction doubled the dose at the end of the week. The results of the treatment were most marked in the constitutional symptoms. In the course of four or five months the patients lost the sense of fatigue, the cough, etc. These results had been seen in some instances in four weeks. Some of the specific results noted were that the patients cured by this method kept well longer, the relief of toxic symptoms were most marked, and a considerable percentage of the patients lost the bacilli. The influence of the tuberculin on the physical signs in advanced cases was often very slight. The results were best gauged by clinical evidence and while tuberculin was a valuable adjunct in suitable cases if properly given, it was simply an aid like digitalis in heart disease. It did not produce true immunity.

An Experimental Study of a New Remedial Agent and Its Effects in Pulmonary Tuberculosis.—DR. BERTRAM H. WATERS presented this study. He first reviewed the literature of inhalation therapy, which showed that from the earliest times the subject had held an important place. This history also showed that doubt had never been expressed of the penetration of gases, either pure or combined with remedial substances, into the lung, and even into the blood stream. The substances which had given the best results thus far were oxygen, ozone, and the ethereal oils and balsams; among the latter the turpenes had been used with considerable success. To this latter class belonged turpentine, the complex essential oil of the pine tree, and this study dealt with its chief constituent, pinene. To it were attributed the physiological and therapeutic action of oil of turpentine, which was but slightly toxic and was a cardiac stimulant and a general stimulant to mucous membranes. Before describing this new method, Dr. Waters said he wished to state that no attempt had been made to put these generators on the market and it was intended, not to sell them, but to lease them to physicians of established reputation, or through them to their patients, reserving the right to withdraw them for any misuse of the method or false statement of its value. There would be no exploitation of a "cure all" but a dignified and ethical presentation of a valuable remedial agent. The method was as follows: By means of a highly perfected ozonizer, and an apparatus which effected a chemical combination of ozone of pure quality with pinene, the base of pure rectified oil of turpentine, a gaseous pinene ozonide was produced, named "terpezone," which had a high oxygen efficiency, yet which was easily respirable. This generator thus produced two of those substances which had already given some evidence of their therapeutic value, in a much safer and more practical form. Terpezone contained no free ozone. The air stream upon which the ozonizer acted and that which was in contact with the oil of turpentine was chemically dry. In this

combination none of the well-known oxidizing and germicidal properties of the ozone were lost, while the pinene made it easily and pleasantly respirable and produced the therapeutic effects of that oil. The apparatus which Dr. Waters described and illustrated by photographs was simple, not at all cumbersome, and could be employed without special preparation or the use of a cabinet involving change of atmospheric pressure. In order to determine the chemical action and nature of terpezone a chemical investigation had been carried out in the laboratory of Columbia University with the assistance of Dr. J. M. Nelson. These experiments, while of too technical a nature to detail, demonstrated conclusively that the substance was an entirely new one, namely, a gaseous pinene ozonide, in which the infinitely minute particles, or molecules were in suspension, in the form of a gas, which, being anhydrous, could not properly be called a vapor. As to the chemical nature of the substance, it might be said that ozonides in general all underwent decomposition more or less readily, forming aldehyde and acid groups at the position of the original double band, and also giving off nascent oxygen. Experiments made in the laboratories of the University and Bellevue Hospital Medical School had shown that for typhoid, diphtheria, colon, staphylococcus, subtilis, and anthrax in pure broth culture, even when the lightest moisture was present, terpezone was germicidal, in the room atmosphere, in twenty-five minutes to two and one-half hours. Clinical observations had been made on twenty-one patients. After giving a detailed account of these observations the essayist said they seemed to indicate that: (1) The percentage of hemoglobin was increased under this treatment and the increase did not seem to depend upon the administration of iron. (2) The erythrocytes increased, at least temporarily, irrespective of the severity of the lesion. (3) When marked leucocytosis existed, due to toxemia, it was reduced. When the number of leucocytes was below normal, it was increased by treatment. (4) The lymphocytes were increased and remained so in those patients who improved. It seemed probable that this increase might be considered as a reliable indication from the prognostic standpoint. (5) The large mononuclears seemed to follow the curve of the lymphocytes. Their increase or decrease might have a like significance. (6) No conclusion could be drawn from the behavior of the transitionals, eosinophiles, or basophiles. There seemed to be under this method of treatment, temporarily at least, even in the progressive types of the disease, a distinct and constant tendency of the cellular elements of the blood and the hemoglobin to approach their normal ratios. The most immediate and noticeable effect of treatment was relief of the dry, ineffectual cough. This seemed to be due to the effect upon the sputum, which was increased in amount and rendered more liquid, so that it was raised with much less difficulty. In all cases the complicating bronchitis was relieved or disappeared entirely. There was a marked diminution of tubercle bacilli and the secondary organisms in the sputum, and in some instances they were absent on several successive examinations. The temperature, pulse, and respiration of those patients who presented any hope of improvement were reduced and steadied. In no instance was acceleration of respiration observed. In those patients who improved there was a noticeable diminution of toxemia, indicated by the less frequent occurrence or disappearance of rigors and hyperhydrosis. The amount of urine and the excretion of urea were increased. The appetite was in no instance impaired, but rather seemed to be improved. Sleep was more continuous, sound, and more refreshing. At no time was there any evidence of irritation of the heart, lungs, or kidneys, except when an inferior quality of turpentine was used. The weight increased and the improvement both of the general condition and of the pulmonary lesions seemed to be as rapid and satisfactory, and to compare favorably with that obtained under sanatorium care. It was noticeable that all of the patients who were treated in the city made quite as rapid progress here as afterwards in the country. These results seemed to depend upon the action of terpezone as a stimulating expectorant; in increasing the protective cellular elements of the blood and correcting the secondary anemia, thus raising the resistance of the individual; in increasing the oxygenation of the blood, thus influencing metabolism and stimulating the excretion of waste products; in diminishing toxemia. This agent, through its efficiency as a germicide and its respirability, might be of special value in surface infection of the mucous membrane such as tonsillitis and influenza, possibly also diphtheria and scarlet fever. It was probable, though further evidence of this action was required, that by reason of its high oxidizing efficiency, and the liberation of nascent oxygen, it might have a neutralizing effect upon pathogenic organisms, and toxic substances in the blood stream. If this should be demonstrated, its field of usefulness could be greatly enlarged.

The Practical Physical Diagnosis of Early Pulmonary Tuberculosis.—Dr. S. ADOLPHUS KNOPF gave a demonstration on the living subject of his method of making a diagnosis of early tuberculosis. He said that upon seeing the patient for the first time the first thing one should do was to ascertain the social condition of the patient, his employment, how many windows he had in his bedroom, etc. One should remember that the family history was not as important as tradition, unconsciously to the physician, was apt to make it seem. On the other hand it was very important to find out how many brothers and sisters the patient had. The younger children in large families were much more susceptible to tuberculosis than the older ones. The younger children in large families usually did not receive the same careful watchfulness nor the same amount of nutrition. In young girls one should inquire carefully into the menstrual history. A diminution in the amount of menstrual fluid was one of the signs of early tuberculosis. Then one should begin the physical examination at the head. In early tuberculosis the hair was apt to be dry and brittle. The eyes should be carefully examined and any irregularity in the pupils noted. The upper respiratory tract should receive special attention, for it was useless to try to treat the lungs if the upper air tract was diseased. Nervous irritability and loss of appetite should be taken into consideration. Possibly the patient slept badly and complained of pain. This might occur anywhere and might bear no direct relation to the localization of the disease. In examining the mouth one should look for a reddish line on the gums; while this might not be pathognomonic of tuberculosis it was a valuable sign taken in connection with other symptoms. If the mucous membrane of the mouth and upper air passages was pale it should be regarded as a suspicious sign. One should then have the patient inhale and exhale and watch the movement; generally it was impaired either longitudinally or laterally. One should next palpate for fremitus. It was a good thing to have the patient hum; this often revealed a consolidation that had passed unnoticed for years. By placing the hand over the part and then touching the forehead to the back of the hand it was surprising how much one could hear. In testing for fremitus one should not use both hands at the same time unless certain that they were equally developed as to sensibility. In speaking of percussion Dr. Knopf said that the finger was the best percussor and every portion of the chest should be percussed. The patient should be instructed to hold his hands over his head during percussion. The ear should be used first and then the stethoscope. Dr. Knopf then considered auscultation, calling special attention to the value of expiration in revealing râles. He thought that such a systematic examination with careful observation of the signs would save many lives, and it was quite possible for the general practitioner to make this examination provided he would take the time.

Dr. HERMANN M. BIGGS said that he thought that Dr. Miller had put the subject of tuberculin in about the right light. In administering tuberculin he began with 0.001 mgm. of old tuberculin, and if there was no reaction or only a slight increase in cough and expectoration, he doubled the dose at the end of one week, and he continued to double the dose each week so long as there was no reaction until 10 milligrams were given; he then used a solution of 1 c.c. to 1000, increasing the dose by one quarter each week. The results on the whole were satisfactory. Advanced cases that showed no reaction did better with tuberculin than without it. The Health Department did not compel patients to subject themselves to the tuberculin treatment, but made the matter one of choice. If the patient reacted to the dose he went back to the third previous dose and increased it one-third. Dr. Biggs said he could not quite agree with the statement Dr. Knopf had made that the diagnosis of early tuberculosis was an easy matter. There were many cases which did not produce signs or symptoms upon which one could base a diagnosis. Where there were no physical signs it was only a matter of experience and judgment and men of equal ability would arrive at very different opinions, and would express different opinions on a given case at different times. There were a large number of cases in which it was impossible to say definitely that incipient tuberculosis was present; the only way to do was to keep these cases under observation and await the outcome.

Dr. THEODORE C. JANEWAY said that in making a diagnosis of tuberculosis there were two things to keep in mind, namely, what were the symptoms of tuberculosis and what other diseases might give rise to similar symp-

toms. He cited the case of one patient whom he had watched from October to May without being able to find any abnormal physical signs; then he found a few crackles; a month later these were more pronounced. After that the patient began to improve and made a good recovery and was still in good health after twelve years. One might be biased by the history without having adequate physical signs. Other diseases that produced similar symptoms were the chronic type of infective endocarditis; hyperthyroidism, it being possible for tuberculosis and hyperthyroidism to be coincidental; certain syphilitic conditions, which were rare; pleural effusions, in which he did not dare make a differential diagnosis. It was always risky to make a diagnosis of tuberculous peritonitis in anyone but a child; he made it a rule to change that diagnosis to carcinoma and found that he was frequently right. In auscultation he had found that the diseased portions of a lung were often cut off from ordinary respiration and the signs that one obtained were from the healthy part of the lung. Sometimes a patient had to walk for fifteen minutes before it was possible to obtain signs and then one might find disseminated tuberculosis of the entire lung which he had overlooked before.

Dr. Ephraim D. Klotz said he would confine his remarks to the method described by Dr. Waters. In the Metropolitan Hospital they had a ward of eighteen beds where they had installed five generators. After these were in operation for a few minutes they charged the air with a substance that looked like smoke and had an odor similar to that of a newly painted room. The nurses and internes said that it caused a slight conjunctivitis and slight constriction of the chest both of which soon passed off. Observations on patients in this ward showed that there was marked improvement in the blood count and an inclination for the blood to assume a normal relation between the cells. They had been warned that they might expect kidney troubles on account of the turpentine, but there had been no case of albumin, or any apparent disease of the kidneys. In a large proportion of the cases there was an increase in the total output of urine. Twelve out of sixteen patients still retained the tubercle bacilli and the volume of sputum had been diminished; in four it had remained the same. The weight increased in eight cases out of sixteen. In most of the cases the cough was less at night and the patients got up feeling better in the morning. There were two deaths in the series within ten days from the time of beginning treatment; one in a patient having extensive involvement of both lungs, pneumonia, miliary tuberculosis and enlarged liver and the other case, in which no autopsy could be obtained, had symptoms of pneumonia.

Dr. Beverley Robinson said that the general medical profession felt uncertain as to the value of tuberculin. He did not use it and what he had seen of it did not impress him very favorably. However, he thought Dr. Waters had done good work. As to physical diagnosis he wished to corroborate what Dr. Biggs and Dr. Janeway had said. Many hospital physicians found it difficult to make a diagnosis in spite of a great deal of careful examination by all improved modern methods. Yet, personally, as he left the wards after witnessing these efforts he could not help thinking "What's the use of all this; are the people any better off?" The conviction kept growing upon him that there was no specific for tuberculosis and never would be. Since he had studied medicine he had never seen two patients alike and one had to think out each individual case. As to treatment, Dr. Austin Flint's thesis written twenty-five or thirty years ago was still well worth reading. A certain proportion of the cases of tuberculosis would get well anywhere, with bad air, insufficient food, etc., while others would die no matter what was done for them.

Dr. A. Alexander Smith said he, too, endorsed what Dr. Biggs and Dr. Janeway had said; it was not always easy to diagnose early tuberculosis through physical signs. Oftentimes the physical signs were very numerous when the lesion was very slight; at other times there might be an enormous amount of disease and freedom from physical signs. A localized and circumscribed area of subcrepitant râles was a sign more than suspicious if accompanied with signs of consolidation. This statement had to be modified in the presence of the influenza bacilli; he had found that these caused a circumscribed area of râles which would clear up and now he was very conservative in making a diagnosis on this basis. It was very important in making an examination to ask the patient to cough. One should also remember that other structures were involved primarily beside the apex. The process did not necessarily commence at the apex in the right intrascapular space. Dr. Smith called special attention to the value of the whispered voice.

Dr. Mark I. Knapp said that he had arrived at the conclusion that when there were no physical signs one dared not make a diagnosis of tuberculosis and when there were these signs it was too late. In records of St. Bartholomew's Clinic he had observed invariably that when there was a condition of budding, sporating yeast in the stomach together with insufficiency of the pylorus and slight physical signs it was safe to make a diagnosis of tuberculosis.

Dr. James Alexander Miller, in closing the discussion, said that his statement that a positive cutaneous reaction could be obtained in all adults had been questioned, but he wished to repeat that this was true of 95 per cent. of adult persons. The reason was that nearly everyone had been exposed to the tubercle bacilli before reaching the age of five years.

Dr. S. Adolphus Knopf said he was glad he had made the remarks in regard to diagnosis which had brought out discussion. He said he quite agreed that in many cases the making of a diagnosis was by no means easy. He had neglected to speak of temperature; the temperature should be taken, not once, but several times. The patient should be made to exercise and then the temperature should be taken. If the general practitioner gave as much as three quarters of an hour, as he himself was accustomed to doing, to an examination, he could make as good a diagnosis as the specialist. In the presence of physical signs always put the patient on treatment for tuberculosis; if he had the disease it might do him good and if he did not have it no harm was done.

Pathological Society of Philadelphia.

At a stated meeting held May 9 Drs. O. H. Perry Pepper and D. L. Eastland presented specimens of "Coincident Aneurysm of the Aorta and Empyema." The patient exhibited percussion-dulness over the greater portion of the left side of the chest, with suppressed breath-sounds and dimished vocal resonance and fremitus. The pupils were unequal, the voice high pitched and there was a brassy cough. Puncture disclosed the presence of pus in the left pleural cavity and resection of a portion of a rib resulted in the evacuation of a small amount of pus. The condition of the patient grew gradually worse until death ensued. On post-mortem examination the left pleural cavity was found partly obliterated, and partly forming a cavity containing pus and blood. The descending aorta was dilated in its first portion and at a lower level the seat of a sacculated aneurysm, whose rupture had brought about the fatal result. Dr. Robert A. Keilty presented a specimen of "Chronic Pericarditis with Calcification," and one of "Tuberculous Pericarditis." Drs. Moses Behrend and Henry Wise presented specimens of "Embolism and Thrombosis of the Popliteal Artery in a Case of Mitral Stenosis, Followed by Gangrene of the Leg and Foot." The patient was a man, 36 years old, with physical signs of mitral obstruction, attended with copious hemoptysis, and who was seized with intense pain in the posterior aspect of one leg, together with symptoms simulating those of angina pectoris, and at a later period suffered a second attack with similarly intense pain involving the right leg. No evil results attributable to vascular obstruction were noticed in the left lower extremity, but in a short while the right leg began to undergo gangrene. On consultation amputation of this latter member was agreed upon and carried out. The wound was healing kindly and the patient appeared to be doing well, when a third attack of pain, affecting the left leg, developed, and death shortly followed. On post-mortem examination, obstructive thickening of the leaflets of the mitral valve was found, together with a fairly well organized thrombus in the left auricle. The femoral artery of the emputated member was occluded, the vessel being collapsed above and below the site of occlusion. The spleen was the seat of a hemorragic infarct. Dr. E. A. Case presented a specimen of "Aneurysm of the Coronary Artery." The organ was discovered in the dissecting room. The pericardial cavity contained blood and the source of which was found in a ruptured aneurysm of one coronary artery. A second aneurysm occupied a sinus of Valsalva. Drs. J. H. Austin and G. M. Peirsol presented a communication entitled "The Use of the Crehore Micrograph in Clinical and Experimental Studies of Cardiovascular Conditions." The results obtained were not satisfactory by reason of technical and other difficulties in the employment of the apparatus, which it was thought had no practical advantage over the Franck manometer. Drs. Austin and Peirsol also presented a communication entitled "Do the Two Vagi Differ in Their Control of the Heart Action?" The study was undertaken with a view of confirming or disproving the contention that has been made that the right vagus acts

especially on the auricles and the left on the ventricles. It was found in experiments on dogs that stimulation of the peripheral extremity of either cut vagus exerted equally no appreciable effect on the force and frequency of either auricle and likewise none on the force of either ventricle, although stimulation of the left vagus in some instances induced a condition of heart-block. Dr. W. M. Late Coplin presented a communication entitled "Influence of Longitudinal Stress on the Collapsibility of Vessels."

Books Received.

The Medical Record *is pleased to receive all new publications which may be sent to it, and an acknowledgment will promptly be made of their receipt under this heading, but it must be with the distinct understanding that it is under no obligation to notice or review any publication received by it which in the judgment of its editor will not be of interest to its readers.*

Handbuch der speziellen Chirurgie des Ohres und der Oberen Luftwege. Vol. 1, Part 2, No. 6. By Drs. L. Katz, H. Preysing and F. Blumenfeld. 80 pages; illustrated; paper; price 4.50 M. Curt Kabitzsch, Publisher, Würzburg.

Schmidt's Jahrbucher der in und Auslandischen Gesammten. By Prof. D. H. Leo. Vol. 314, No. 4. 112 pages; paper; A. Marcus & E. Webers, Publishers, Bonn.

Uber Serodiagnostik und Serotherapie in der Augen Heilkunde. By Dr. Otto Kuffler. 56 pages; paper; Vol. 8, No. 6; price 8 M. Carl Marhold, Publisher, Halle.

Sixth Annual Report of the Henry Phipps Institute. 136 pages; paper. Henry Phipps Institute, Publishers, Philadelphia.

Primary Malignant Growths of the Lungs and Bronchi. By I. Adler, A.M., M.D. 325 pages; illustrated; cloth; price $4.00 net. Longmans, Green & Company, Publishers, New York.

Essays and Clinical Studies. By F. G. Crookshank, M.D. 245 pages; cloth; price 7/6 net. H. K. Lewis, Publisher, London.

Anglo-Saxon Leechcraft. An historical sketch of early English medicine. 262 pages; illustrated; cloth. Burroughs, Wellcome & Company, Publishers, New York.

Twenty-third Annual Report of the Derby Borough Asylum for the Year Ending December 31, 1911. 69 pages; paper. Derby Borough Asylum, Publishers, Derby.

Sewage Disposal. By George W. Fuller. 767 pages; illustrated; cloth; price $6.00. McGraw-Hill Book Company, Publishers, New York.

Kurzgefasste Anleitung zu den Wichtigeren Hygienischen Untersuchungen. By Dr. Bernhard Fischer. 270 pages; cloth; price 5.60 M. August Hirschwald, Publisher, Berlin.

Seventh Annual Report of the Board of Managers of the Manhattan State Hospital to the State Commission in Lunacy. For the year ending September 30, 1911. 147 pages; paper.

The Institution Quarterly. Vol. III, No. 1. Edited by A. L. Bowen. 215 pages; paper. The State Board of Administration, the State Charities Commission and the State Psychopathic Institute, Publishers, Illinois.

Acromegaly. By Leonard Portal Mark, M.D. 160 pages; illustrated; cloth; price 7/6 net. Bailliere, Tindall & Cox, Publishers, London.

Yearbook of the United States Department of Agriculture, 1911. 732 pages; illustrated; cloth. U. S. Department of Agriculture, Publishers, Washington.

Uber Kongenitale Syphilis, Entstehung, Erscheinungen und Behandlung. By Dr. Fr. Bering. 36 pages; paper; price 1.20 M. Carl Marhold, Publisher, Halle.

Uber die Behandlung der Gonorrhoe des Mannes. By Dr. V. Klingmuller. 36 pages; paper; price 1.00 M. Carl Marhold, Publisher, Halle.

Diagnostic Methods—Chemical, Bacteriological, and Microscopical. By Ralph W. Webster, M.D., Ph.D. Second Edition, revised and enlarged, with 37 colored plates and 164 other illustrations. 682 pages; cloth; price $4.50 net. P. Blakiston's Son & Company, Publishers, Philadelphia.

Augustus Charles Bernays. A Memoir. By Thekla Bernays. 300 pages; cloth; price $2.00. C. V. Mosby Medical Book & Publishing Company, Publishers, St. Louis.

Massage and the Swedish Movements. By Kurre W. Ostrom. Seventh Edition, revised and enlarged, with 115 illustrations; 201 pages; cloth; price $1.00 net. P. Blakiston's Son & Company, Publishers, Philadelphia.

Medical Items.

Sarcoma of the Ilium Treated by Coley's Fluid.—A. Carless reports the case of a patient, aged 49, who was admitted to the hospital in October, 1909, and whose symptoms existed for eighteen months before that date. At first he complained of pain in the buttocks and calf, which were supposed to be sciatica, and the tumor was not noticed till just before his admission. It then extended from the right iliac fossa upwards as far as the rib margin and back to the spine, filling the right lumbar region. It was hard and immobile, fixed firmly to the innominate bone and to the lumbar spine. At first the pain was so severe that morphine was required, even when he lay in bed. Operation being hopeless, treatment by Coley's fluid was undertaken. When exhibited in February, 1910, his condition was much improved, the pain was absent, and the swelling had decreased in size. Since that date several courses of Coley's fluid have been administered, and the swelling has gradually shrunk, the patient being able to get about and complaining of no pain. Nothing has been undertaken in the shape of treatment for six or eight months.—*Proceedings of the Royal Society of Medicine.*

Health Reports.—The following cases of and deaths from smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine Hospital Service, during the week ended July 5, 1912:

CHOLERA.

Places.	Date.	Cases.	Deaths.
Ceylon: Colombo	May 19-25	1	*
India: Bassein	May 5-11	14	13
Bombay	May 19-25	34	30
Japan: Formosa—Tamsui	July 1	..	Present
Russian Empire: Astrakhan	June 11	1	1

*In the port.

YELLOW FEVER.

Chile: Tocopilla	June 8	..	*
Ecuador: Duran	May 1-15	1	1
Guayaquil	May 1-31	37	21
Milagro	May 16-31	5	2
Naranjito	May 1-31	4	2
Yaguachi	May 16-31	1	..
Mexico: San Juan Bautista	June 23-30	4	..
Venezuela, La Guaira	May 1	1	..

*Improving.

PLAGUE.

Ecuador: Guayaquil	May 1-31	4	2
Dutch East Indies: Java—			
Provinces—Kediri	Mar. 31 Apr. 6	2	2
Madiven	Mar. 31-Apr. 6	3	3
Egypt: Alexandria	May 27-June 4	2	..
Port Said	May 29-June 1	1	..
Provinces—Assiout	May 25-June 1	2	.
Beni Souef	May 30-June 6	3	3
Carchieh	Apr. 28-June 4	1	..
Fayoum	Apr. 28-May 4	1	..
Minieh	May 27-June 5	13	2
India: Bombay	May 19-25	79	71
Karachi	May 19-25	34	33
Philippine Islands: Mariveles quarantine station	Apr. 30-May 7	1	*1
Porto Rico: Arroyo	To July 2	1	†
Carolina	To July 2	2	2
San Juan	June 21-July 2	9	‡8
Santurce	To July 2	5	2
Straits Settlements: Singapore	May 5-11	1	1

*From S.S. *Taisang* from Amoy.
†On a schooner from San Juan.
‡Total June 14 to July 2. Cases 21, deaths 13.

SMALLPOX.

Australia: Fremantle quarantine station	Apr. 19	1	*
Canada: Provinces—Ontario—			
Ottawa	June 9-15	1	..
Windsor	June 12-22	2	..
Quebec—Montreal	June 16-22	2	..
Chile: Coquimbo	May 26-June 1	7	.
China: Chungking	May 5-June 1	.	Present
Nangking	May 19-25	..	Present
Shanghai	May 28-June 2	..	1
Egypt: Cairo	May 11-20	2	..
Port Said	May 14-20	2	1
France: Paris	June 2-8	2	1
Germany		..	†..
Great Britain: Liverpool	June 2-8	1	..
India: Bombay	May 19-25	54	51
Karachi	May 19-25	1	1
Madras	May 19-25	1	1
Italy: Naples	June 2-8	3	..
Palermo	May 26-June 1	3	..
Turin	June 3-9	1	..
Mexico: Aguascalientes	June 9-16	..	1
Guadalajara	June 9-15	1	2
Juarez	June 16-22	..	1
San Luis Potosi	Apr. 7-13	1	1
Portugal: Lisbon	May 27-June 2	3	.
Russia: Warsaw	Apr. 21-27	3	4
South Africa: Durban	Apr. 28-May 4	4	1
Spain: Valencia	June 2-8	13	..
Straits Settlements: Singapore	May 5-11	3	..
Turkey in Asia: Beirut	May 26-June 1	15	..
Turkey in Europe: Constantinople	May 27-June 9	..	26

*Froms. S.S. *Malwa* from London via Colombo.
†Total: June 2-8, Cases, 7.

Medical Record

A Weekly Journal of Medicine and Surgery

Vol. 82, No. 3.
Whole No. 2176.

NEW YORK, JULY 20, 1912.

$5.00 Per Annum.
Single Copies, 15c.

Original Articles.

A CASE OF STILL'S DISEASE.*

BY V. P. GIBNEY, M.D.

NEW YORK.

MALE, aet. four years. Referred by Dr. Kurth of Schenectady, New York, and admitted to Hospital for Ruptured and Crippled January 19, 1912.

The doctor sent with the patient a very full history from the time of the child's birth, and from this I learn that when five weeks of age he had a very severe attack of gastroenteritis, the mother not having been able to nurse him, but under a change of diet he responded quite readily. Shortly afterwards he had whooping cough which proved to be a mild attack. At two years of age he had measles without any sequelæ. When 2½ years of age he had a fever which lasted six weeks, regarded as of malarial origin, but not responding to the usual remedies. He made a fine recovery later and was strong and hearty, as shown by the accompanying photograph, Fig. 1.

His present illness dates from January 14, 1911, when he complained that afternoon of pain in one wrist, the doctor being called in that evening and finding the wrist slightly swollen and red, and the temperature a bit above normal; one tonsil was reddened, but there was no complaint of sore throat. The following morning he was running about as usual, but in the afternoon there was a return of the symptoms, a little more severe. The following morning he was—apparently—perfectly well, but in the afternoon the symptoms returned in a still more aggravated form. He was put to bed, where he remained several weeks. A few days later the other wrist was involved, while aspirin made no impression. His temperature was higher every day until the eighth day, when it was 104° in the evening.

On the tenth day he coughed and there was found a small area of consolidation in the center of the left lung. For the next few days this consolidation showed increase both upward and downward. After a week this resolved, but the patient was no better and new areas developed.

It was observed that every time a portion of the lung resolved, the joint symptoms were aggravated, so that the wrists, elbows, ankles, and great toe joints suffered in turn, and the case seemed like one of general sepsis. The temperature varied greatly and on a resolution of a part of the lung there would occur an attack of joint swelling with intense erythema, followed by profuse sweating and polyuria. At this time the liver was about three times and the spleen twice the normal size and the urine was loaded with albumin. The leucocyte count was 14,000-19,000.

*Presented at a meeting of the Practitioner's Society, April 5, 1912.

A Moro test taken was negative. There was at times absolute flatness of the lungs on percussion, strongly suggesting empyema, but punctures failed to confirm this. The doctor, under the impression that there was general sepsis, punctured the lungs in five different places, with negative results. The aspirated serum and blood were examined for tubercle bacilli, with negative results. The sputum contained capsule cocci and other bacteria but no streptococci or tubercle bacilli. Soon the right lung became involved, and it seemed that not the smallest portion of his lungs escaped consolidation, and some portions were consolidated several times over. The pleuræ were never involved, as the punctures showed a freely movable lung.

After an illness of about ten weeks he was taken to Asheville, N. C., and several physicians pronounced his case tubercular, but they made no tests. He went to Asheville on March 31 and returned on May 6, having lost ground so rapidly during that time that he was brought home to die. He slowly improved after reaching home, and the resolution of small areas of lung on every occasion brought on an attack of joint swelling and symptoms of sepsis.

A favorable circumstance was that the intervals—at first about one week in duration—became longer and longer, and he began to gain in weight. As his lungs improved the superficial lymphatic glands became enormously swollen, as well as those in the axillæ and groins.

The case ran along with very little change until September, when rigidity of spine was noticed, and the upper dorsal and lower cervical verterbræ were thought to be tubercular, and the diagnosis of general tuberculosis seemed unmistakable. The patient was kept flat on his back and when the weather was favorable he was put in a hammock on the porch or was given a ride in a cart built especially for him. Figure 2 is a very good illustration of his appearance at this time, and indeed when he entered the hospital this picture would be faithful to life. The *x*-ray pictures taken on November 22 revealed absolutely nothing in the bony or cartilaginous structures of spine, thorax, feet, or wrists. The lungs and pleura were found almost absolutely normal. The failure of the *x*-ray pictures to throw any light on the subject caused the doctor to abandon the diagnosis of tuberculosis and make one of Still's disease.

I cannot refrain from acknowledging with gratitude my indebtedness to Dr. Kurth for so elaborate a history of the case, and while I have given the above details in abstract I think it only fair to give the following quotation: "In explanation of the case I would state that all the symptoms that go to make up the clinical picture are symptomatic of absorption. There is in the patient some central focus which throws out septic matter into the circulation

at irregular intervals. I believe this focus is somewhere in the chest—probably in the mediastinum."

Shoulders are involved and most of the movements painful. Axillary glands moderately enlarged. Both elbows enlarged over outer side, yet all motions are preserved except pronation to a

Fig. 1.—Case I, before the development of the disease.

slight degree. Wrist joints involved with marked swelling and limited motion which seems quite painful. X-ray taken one month ago reported negative. Some days the patient seems lively, moving limbs up and down, but this generally provokes an exacerbation. The upper teeth are bad and peg shaped. The metatarsophalangeal joints are not involved, but the first row of carpals are involved. The hips are held at angle of 90°. Left hip shows no motion; right shows small amount of motion, and with a little coaxing extends to 170°. Knees are involved: right can be extended about 165°; left to about 120°. Some days extension is better. The tibiotarsal and midtarsal joints are involved.

Measurements were taken and are recorded below with some taken April 5. The thorax is well developed; percussion notes are about normal; spinal column seems straight, but presents a little rigidity except in lumbodorsal region, where it seems normally flexible. A few of the cervical glands are slightly enlarged.

April 5, 1912, the following notes were recorded: Since admission there has been a gradual and steady improvement. The treatment adopted was thymus extract beginning on grs. 5, t.i.d. Now getting grs. 5 A. M., grs. 5 M. and grs. 5 P. M. Sleeps well without any aid. Bowels have been regular, while before admission he was obliged to have enema every day or two. At the end of about one month traction was begun in the line of deformity, two pounds to each leg. No local applications to the joints. He has been taken to the roof every day.

At present he can raise himself up in bed and move his head freely. Teeth and gums in good condition; cervical glands slightly enlarged on each side; ribs slightly beaded; apparently no splenic or hepatic enlargement; slight enlargement of glands in left groin.

Puff ball over right shoulder like a small mass of fat, while movements at this joint are restricted to about one-half normal in rotation. Left shoulder joint free from this mass of fat, but more tenderness and more restriction in motion. Right elbow presents slight enlargement of the epitrochlears, some swelling over the head of the radius and a little over the internal condyle, while flexion is perfect and painless as well as extension, and pronation and supination cause a little pain, but are perfect. Same remarks are true of the left elbow, except supination not quite so good and he keeps the forearm preferably in pronation. Wrist joints on both sides are symmetrically puffy on the dorsal aspect, but decidedly smaller than on admission. They present a very good range of motion which is comparatively painless. Metacarpophalangeal joints on each side are not involved, except the thumb joint, which is slightly involved. The proximal row of phalangeal joints shows a little swelling, but function is very good. Nothing at the distal joints.

Right hip can be extended to about 170° and flexed past 90°; abduction limited to a small arc; adduction perfect. These movements are better actively made than passively. Left hip held in moderate abduction; extension limited to about an angle of 135°; adduction limited to a small arc; abduction better; flexion limited to about 110°; much more sensitive than right hip. In fact the whole left side is more sensitive than the right side. He can extend right knee to about 170° and flex past 90°; can extend left knee only to 135° but can flex to an acute angle. These joints are not very

Fig. 2.—Case I, showing the disease at its height.

sensitive on handling. Right foot hangs preferably in equinus but dorsoflexion can be made to about 90°; left foot in moderate valgus and has a fair range of motion at tibiotarsal joint. No involvement of the metacarpocarpal joints and none of the toe joints.

Comparative measurements:

January 19, 1912.	April 5, 1912.
Right wrist—5½.	Right Wrist—5.
Left—5¼.	Left—5¼.
Right Knee—7½ by 8¼ by 6.	Right Knee—6¾ by 7½ by 6.
Left—7½ by 8¾ by 6.	Left—7¼ by 8 by 7½
Right Calf—6.	Right Calf—5¾.
Left—6.	Left—5¾.
Right Thigh—4 in. above patella, 8½.	Right Thigh—4 in. above patella, 8¼.
Left—8.	Left—8½.
Right Ankle—6 by 7½ by 6½.	Right Ankle—5½ by 7 by 6½.
Left—6 by 7¾ by 7¼.	Left—5½ by 7¼ by 6½.

Dr. F. M. Jeffries, pathologist to the hospital, reports as follows: March 27, 1912, 11 A. M.—Red count, 5,000,000; white count, 8,000; hemoglobin, 85 per cent.; polynuclears, 60.8 per cent.; lymphocytes, 37.7 per cent.; eosinophiles, 0.6 per cent.; transitionals, 1 per cent.; nucleated reds, none.

The *x*-rays taken shortly after admission and again within the past few days are absolutely negative and are here presented for inspection. Dr. Darling, the hospital radiographer, confirms our own observations. The boy's appetite has been good, he sleeps well, and the further treatment will include fixation of the limbs in correct position rather than traction, as this cannot be made efficiently because of the number of joints involved in the deformity. Furthermore, in the absence of any suggestion of an osteoarthritis, immobilization offers the best means of securing recession of the periarticular infiltration.

A note under date of June 28 is as follows: Lungs perfectly clear; no deposit of any kind. Lower limbs straight and free from deformity though requiring a pad over the knee and a foot plate to keep them so. In a plaster-of-Paris bed which was made for him several weeks ago, just after the case was presented, and applied under ether, the deformity fully corrected, he has been very comfortable, easily handled. The swelling about the hips, knees and ankles has undergone a certain amount of resolution.

On June 30 the patient was discharged from hospital, a plaster-of-Paris bed having been changed for a kind of wire cuirass, devised by Dr. Kurth. In this he is very comfortable; the limbs are held straight. The extract of thymus is to be continued. Later he will be put on his feet, and it is believed that a good result will follow and a fair range of motion will be secured.

We had in the Hospital for Ruptured and Crippled several years ago a typical case which ran through the different stages and finally yielded to an attack of measles. I think this case was shown both by Dr. Whitman and myself at different times at meetings of the Orthopedic Section of the academy. It is interesting to note that three of Still's cases improved immediately after the onset of other infections, namely, measles, scarlatina, and catarrhal jaundice, as did the case just referred to.

Another case was treated in the Out-Patient Service of the Hospital, the notes of which have been furnished by Dr. W. W. Strang of this city: March 1, 1907, male, aged five years, was brought to the Out-Patient Department of the Ruptured and Crippled Hospital. The patient was well until one and a half years of age when he had measles; recovered without complication. Two months later had high fever lasting two or three days. The physician then called said the child had "cold in his joints."

At three years of age the joints generally were enlarged and the child stopped walking. The child was pale; mucous membranes very pale; forehead somewhat prominent; teeth fairly good; joints generally enlarged; swelling consists of thickening of soft parts overlying joints; no tenderness and very little pain on movement of joints; motion limited in all joints; fingers fusiform; cervical lymphatic glands indurated and freely movable; axillary glands markedly enlarged, separate, firm, and freely movable; moderate rachitic rosary; heart and lungs normal; abdomen protuberant; umbilical hernia; spleen enlarged and firm, extending one and a quarter inches below free border of ribs; liver enlarged, extending two inches below ribs; abdomen otherwise negative; urine and blood negative. (See Fig. 3, from a photograph.)

Upon successive visits the child was found to have a temperature at 2 P. M. ranging from 99° to 101.8°. After various kinds of medication without much effect, on April 12, 1907, thymus gland (B & W) Grs. 1½ t. i. d. was ordered.

Fig. 3.—Hospital Case II.

April 24, 1907, patient seemed much improved, appetite was better and sleeping improved. No fever had been noticed by the parents, though temperature 99.5° to 100° was found on examination.

On May 3 the patient was walking alone; joint movements much increased; lymphatic glands markedly smaller.

On May 24, the report was: Excellent color; stands straight; temperature 99°; liver and spleen slightly smaller. Thymus gland increased to Grs. 5 t. i. d.

September 20, 1907: Patient runs about but tires easily.

April 3, 1908: Pulse 78; temperature 98.8°; walks alone for two or three blocks; joints about the same; heart slightly irregular, so medicine is stopped for two weeks.

November 20, 1908: Thymus was stopped for a

while during the summer, followed by weakness, fever, and pallor. For past two months has been taking Grs. 5 t. i. d. Color fair; walks well and stands straighter; pulse 99; temperature 99.5°; eats and sleeps well, never complains.

After this time the patient ceased coming to the hospital and a letter sent to his address was not answered.

Dr. P. W. Nathan was on the Out-Patient staff at that time and it was on his suggestion that the thymus extract was employed. In an article published in the *American Journal of the Medical Sciences* for June, 1909, on "The Nature, Diagnosis, and Treatment of Metabolic Osteoarthritis" he has an illustration of this case as "So-called Still's Disease."

I beg to append to these reports an abstract of a paper by Dr. George F. Still, published November 10, 1896, in the transactions of the Royal Medical Chirurgical Society of London. The polyarthritis occurring in children which he describes he says differs in its clinical aspect and morbid anatomy from rheumatoid arthritis of adults, suggesting distinct pathology.

The paper was based on twenty-two cases—nearly all in the Hospital for Sick Children, Grand Ormond Street, London. "The disease may be defined as a chronic progressive enlargement of joints, associated with general enlargement of glands and enlargement of spleen." The onset is almost always before second dentition. Ten out of twelve cases began before six years; the earliest at fifteen months. The onset is usually insidious. Stiffness in certain joints occurs and they slowly become enlarged. Occasionally the onset is acute with pyrexia.

Enlargement of joints feels and looks more like general thickening of tissues around joint than bony enlargement. Absence of osteophytic growth and of anything like bony lipping even after years have elapsed is striking. No redness or tenderness of joints except in very acute cases. Absence of pain striking but may be present in slight degree. Limitation of motion, chiefly extension, is always present. Joints earliest affected are usually the knees, wrists, and those of cervical spine. Subsequent order of affection being ankles, elbows, and fingers. Affection is symmetrical. No tendency to suppuration nor bony ankylosis.

"Perhaps the most distinctive feature is the affection of lymphatic glands, the enlargement being general, which subsides as disease subsides and increases if joints become worse." Glands most affected are the supratrochlear, those along brachial artery, those in axilla, those in Scarpa's triangle, those deep in illiac fossa along the iliac artery, and in the posterior triangle of neck. Enlargement of the spleen is also a striking feature. Definite in nine of twelve cases.

Heart shows no evidence of valvular disease. Anemia generally present. Sweating often profuse and not related to temperature. Temperature usually characteristic, appearing in periods, lasting only a few days, of pyrexia.

A remarkable feature is the general arrest of development when the disease begins before second dentition. Mental development not affected. Disease not fatal. Still could find no definite cause. Dirt and unsanitary surroundings played no part in etiology. Three of his cases improved after other infections. One after measles, one after scarlatina, and one after catarrhal jaundice.

Three post mortems showed marked thickening of joint capsules and connective tissue adjoining, and thickening and vascularization of synovial membrane. Cartilage may be normal; sometimes slightly pitted.

Points of difference between this and rheumatic arthritis of adults are: Absence of cartilaginous change; thickening of capsule and fibrous tissue; enlargement of spleen; occurrence of adherent pericardium.

Still concluded there were no bony changes, but he was not present at the three post-mortems made.

16 Park Avenue.

THE DE KEATING-HART METHOD OF THERMO-RADIOTHERAPY.*

By WILLIAM SEAMAN BAINBRIDGE, Sc.D., M.D.,

NEW YORK.

In a former paper on Fulguration (Medical Record, July 6, 1912) reference was made to cases in which fulguration alone was not indicated, and in which a combination of fulguration with "thermo-radiotherapy" has been employed to seeming advantage by de Keating-Hart. The method consists briefly, in the sensitization of the tissues by fulguration, or other means, and their irradiation by means of *x*-rays, the skin surface through which the *x*-rays must pass being previously or simultaneously cooled in order to prevent *x*-ray dermatitis.

The procedure and the theory upon which it is based was given to the profession for the first time during the demonstrations at the New York Skin and Cancer Hospital in December. It is now being published for the first time. The method is too new to permit a definite statement with reference to its effects, or to predict its future. According to its originator, some very astonishing and quite unhoped-for results can be reported, a few examples of which are herewith presented.

A number of cases were treated by this method under de Keating-Hart's direction, during his recent visit, and the treatment has been continued in these and other cases since that time.

The following cases are fair examples of the results obtainable with this method. The histories and photographs were furnished us by de Keating-Hart.

Case I.—This is intended to show the inhibitive action which cold exerts against the effects of the rays. A man who was suffering from an epithelioma of the face extending to the cranium and to the brain had been subjected to the *x*-rays, and a few days after the application he had suffered from a radiodermatitis, despite the care taken by the specialist to avoid such an accident. The patient, refusing to submit to further applications of radiotherapy, presented himself to de Keating-Hart. Upon the promise of the latter not to burn him the patient agreed to allow a treatment. The *x*-ray was applied to the skin every eight days for several weeks, during which time the skin showed no untoward symptoms. Before each treatment the skin surface to be traversed by the *x*-rays was chilled, either by means of bellows, evaporating a little water imbibed in a piece of gauze placed upon the region, or by means of a small sack of crushed ice. It is added that the patient had a very much congested and warm face, which explained his susceptibility to the *x*-rays.

The other cases have reference to particularly rapid results with the *x*-rays upon cancers previously warmed.

Case II.—This case was that of a woman afflicted with

*Read in part before the New England Association of Physical Therapeutics, Boston, April 12, 1912. Illustrated with lantern slides. Delivered in part, with the presentation of patients, at the Eighth Annual Clinical Lecture on Cancer, New York Skin and Cancer Hospital, April 24, 1912.

an inoperable cancer of the uterus which had fixed this organ in the pelvis and formed a large glandular metastasis in the left groin. The compression caused by these glands had produced considerable edema of the left leg and foot. The patient suffered horribly despite the six or seven daily injections of morphine. Thermo-radiotherapy was applied in two sittings within four days. At the first sitting it was applied by means of a thermopenetrative electrode introduced into the vagina, the other pole being placed upon the left lateral wall of the abdomen a little below the spleen. At the second sitting the temperature of the pelvic region was increased by means of a hot vaginal douche with water at 50 degrees centigrade for twenty minutes. Both calorifications were accompanied by radiotherapy through the chilled skin of the abdomen. (As usual, the dosage given was 4H. ten Benoist.) The result was very remarkable and rapid. From the first application the pains diminished, and after the second they disappeared. The swelling of the leg subsided so that morphine was no longer necessary. The internal tumor diminished by one-half in eight days and the inguinal glands had grown smaller. At the same time some very remarkable cytolytic phenomena of intoxication appeared, viz., profuse diuresis (4 to 5 liters in twenty-four hours), fever from 39° to 40.5° C., and during the eight days symptoms of depression alternating with nervous excitability, etc. Then everything went well again, and several weeks later, without other treatment, the pain had not reappeared, and the local condition remained about the same. This patient is still under treatment.

Fig. 47.

Fig. 48.

Case III.—The third case is somewhat similar to the preceding. This was an extensive cancer of the vagina fixed to the rectum and involving the adjacent structures. The uterus was apparently invaded. The surgeon, Dr. Rouland, who referred her to de Keating-Hart, considered the case inoperable, or at least that no good results could be expected from operation. Three applications of thermo-radiotherapy were made, extending over three weeks. This sufficed to reduce the tumor to the size of a peach stone—a small indurated mass situated upon the posterior vaginal wall, completely free from the rectum. In this case very warm water was used to heat the parts and radiotherapy in the dosage of 4 H applied through the pelvic route.

Case IV.—This case is that of a woman (Figs. 47 and 48) afflicted with chondrosarcoma which had recurred twice in the palm of the hand. The lesion was deep and the flexor tendon was invaded, as shown in the photograph. The surgeons who had seen the case proposed amputation of the forearm, but the patient refused, presenting herself to Dr. de Keating-Hart for treatment. He began by extirpating the greater part of the tumor with a knife, then fulgurating this area. Deep down, however, there remained some masses in contact with the bones and tendons. Some days later he plunged a high-frequency needle into these masses and simultaneously allowed the x-rays to play upon them. In a few sittings the induration had disappeared and four weeks later the hand was healed, as shown in the second photograph. The function of the hand is almost normal, and the pains, which had kept the patient awake, disappeared after the first exposure.

Theory.—Again we quote directly from the communication of de Keating-Hart:

"Every luminous radiation passing through a living organism, determines in it biochemical reactions, the intensity of which varies with the quantity and duration of the exposure from a mere over-excitement of normal transformation to the destruction of cell-life. Such is the law regulating the relations of living beings to light, whatever the length of the luminous vibrations.

"It must not be overlooked, however, that a knowledge of the quality, number and duration of irradiations does not necessarily imply a knowledge of the length and intensity of biochemical reactions.

"The explanation of the unequal effects produced by radiations of the same strength must be sought in the morphological differences and the biological state of the cells themselves at the moment.

"Every radiotherapeutist, however expert he may be, and even with the use of the same instrumentation under the same general conditions, sees very different results according to the individual. It is well known that certain pathological tissues are much more sensitive than others to Röntgen rays.

"In 1907, Bergonie and Tribondeau (of Bordeaux) threw some light on these hitherto empiric notions. Their researches were made to determine the amount of cell destruction in the organic depths with radiations which were innocuous to surrounding or more superficial tissues. From their work these authors have arrived at certain conclusions which, if not sufficient to explain all the known facts, permit one to understand at least many important phenomena.

"The following three laws are worth remembering: The activity of rays is proportional: *First*, to the reproductive activity of the cells; *second*, to the duration and constancy of their karyokinetic movements; *third*, to the higher differentiation of cell morphology and function.

"From these data we may readily conclude that the effect of *x*-rays on pathological cells is not specific. It is thus easily understood how neoplasms are destroyed by *x*-rays that pass through the more fixed normal cells. For the same reason certain tumors of rapid growth are more radiosensitive than tumors characterized by less constant and intensive karyokinesis.

"Of a similar nature are the conclusions drawn by Dominici and Cheron from radium effects. These experimenters not only observed a greater radium-fragility in the case of epitheliomata than in that of sarcomata, but they noted also the same difference between embryonic sarcomata and fibrochondrosarcomata, the cells and functions of which are more specially differentiated.

"In the same way also Schwartze observed that moistened and sprouting seeds are more radiosensitive than those which are previously dried. In this we have an obvious confirmation of Bergonie's findings.

"On the other hand, these laws do not by themselves explain the great skin-sensitiveness from which certain patients suffer during every exposure to *x*-rays, no matter how short the sitting may be.

"Furthermore, these laws do not explain the resistance offered to the Röntgen rays by certain tumors which were in the very beginning of treatment markedly radiosensitive. This is still more remarkable when we remember that cutaneous tissue becomes weaker at every successive radiotherapeutic sitting.

"Another contradictory fact was observed by Gerhartz: that the genital organs of frogs (organs, however, made up of karyokinetic cells) were not found to be sensitive to the *x*-rays. This would appear to be contrary to Bergonie's rule and to the conclusion drawn from Schwartze's experiments on seeds.

"Paul Becquerel, upon exposing dried spores of

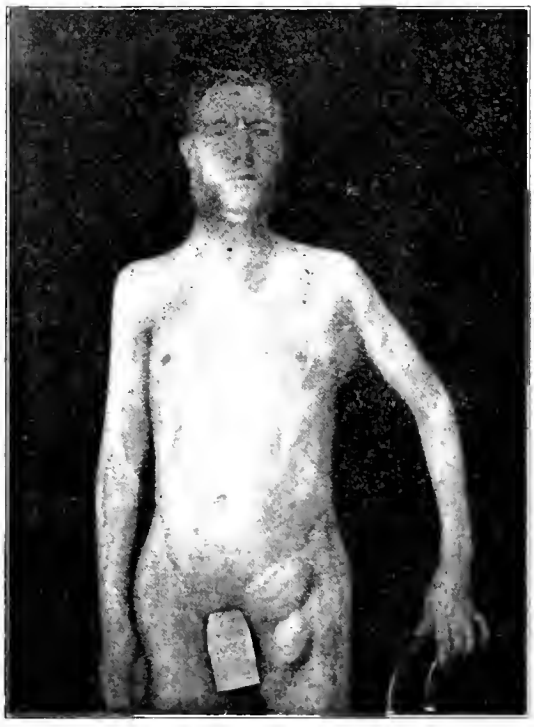


Fig. 49.

Fig. 50.

Case V.—The fifth case (Figs. 49 and 50) is that of a man who was suffering from Hodgkin's disease, with generalized lymphosarcoma and leukemia. He showed numerous large tumors, the most important of which were situated in the cervical, axillary, and inguinal regions, tumors of rapid growth developing almost simultaneously everywhere. The spleen, while not enormous, was perceptibly increased in size. For three years this patient had undergone various kinds of treatment, among which were *x*-rays and two surgical operations. Electric treatment gave him marked relief at first, a number of the neoplasms rapidly softening under the action of radiotherapy. Then, as often happens, the tumors, instead of continuing to disappear, seemed to receive a new stimulus to growth, so that the specialist in charge finally advised cessation of the treatment. When the tumors had acquired an enormous size the patient was admitted, in June, 1911, to the service of Prof. Delbet, at the Neckar Hospital. Prof. Delbet operated upon two large masses situated in the neck and in the groin. The patient, terrified by these repeated operations, left the hospital and entered Dr. de Keating-Hart's Hospital.

The areas operated upon already showed new recurrences, and the non-operated tumors, shown in the first picture, grew very rapidly. They were of a hard, nodular consistency, and a histological examination at the Neckar Hospital confirmed their malignant nature.

The patient was treated every day, or every other day, for three weeks by injecting into one of the tumors artificial normal serum at a temperature of about 50 degrees C., nearly equal in quantity to the size of the tumor before the injection. Immediately after each injection an *x*-ray treatment (4 H, 10 Benoist) was given. One sitting for the small tumors and two for the large ones was sufficient to soften them in a few days.

This patient, who had been condemned to a very rapid death eight months previously, is in an almost florid state of health, and has taken up his work again. There are still a few disseminated tumors not yet softened, but the great majority and the largest of them have disappeared as one may see from the last picture.

yeast, found that these spores are very quickly sterilized at normal temperature and but very slowly when frozen.

"When we consider that the experiments of Gerhartz were made during the winter on frogs, animals whose temperature is variable, we can only conclude that, as in Becquerel's experiments, cold seems to be opposed to the destructive action of rays on living cells.

"Histopathology, clinical researches, and personal experience have confirmed the statement that I made at the Dijon Congress, namely, *other conditions being equal, the radiosensitiveness of tissues depends upon their temperature.* In other words, the higher the temperature of tissues (between the normal vital limits) the greater the destructive power of radiation upon them. An excellent illustration of this is shown in the picture (Fig. 51).

"The patient, being treated for cancer of the right breast, presents needle marks upon the left breast. The needles were plunged into the skin and served with thermopenetration. During respiration the needles were thrown out upon the skin two or three

Fig. 51.

times without any apparent mark. X-rays, applied immediately after, revealed these various displacements through the radiodermatitis produced in the burned areas."

All these clinical and experimental facts, however interesting they may be, must be confirmed by therapeutics. The researches of de Keating-Hart on the radiosensitiveness of cells were made with therapeusis in view. Röntgen-therapy, in his opinion, would be the best kind of treatment for cancer if it would sufficiently work on deep tissues without destroying the healthy overlying tissues. If it is possible to render abnormal cells radiofragile and healthy organs radioresistant, the best possible results can be obtained. Such are the principles of his method of thermo-radiotherapy, which consists in *cooling the skin and heating the diseased tissues during or before the application of x-rays.*

Technique—Thermo-radiotherapy is applied in three different ways, as follows:

(1) In the case of tumors with abundant blood supply, such as sarcomata, physiological hot serum is injected at 50° C., and in such a quantity as to raise the internal temperature of the neoplasm to about 41° or 42° C.

(2) In case of cancers developed in the natural cavities (rectum, vagina, stomach), irrigations as warm as possible are used during a time varying with the needs of the individual case.

(3) In tumors of woody consistency, that can be heated neither by injection nor irrigation, high-frequency currents are employed either by passing the current through needles thrust into the skin, or through an electrode placed on the skin surface.

The last-named method of applying currents is not new. It has been employed by several persons, but with serious inconvenience because, by rendering the skin more radiosensitive than the deep-seated tumors, they have produced radiodermatitis, making the subsequent application of the current impossible.

A natural consequence of the law controlling the relation of temperature to radiosensitiveness led de Keating-Hart to obviate the difficulty just mentioned by *cooling* the organs which he would protect. This is accomplished by several means, two of which may be mentioned.

First, the surface to be protected by cooling is covered with cracked ice wrapped in cotton.

Second, a special apparatus may be employed which cools by blowing the dampened surface with a bellows.

Whenever possible, *x*-rays should be applied during the heating of the cancer, especially when the neoplasm is small and superficial. If the mass is deeply situated, as in uterine cancer, it may retain its warmth long enough for the irradiation to follow immediately after the warming process.

The irradiation must be subjected to the usual rules of radiotherapy. The longer and more frequent the exposure, without destroying the normal surrounding tissues, the more rapid are the local results. The results may sometimes be too rapid, which fact calls for great care, inasmuch as the cytolysis of the tumor may be the cause of serious autointoxication. This is particularly true of epithelial tumors.

Conclusions.—From a study of the data cited, and from the experience described, de Keating-Hart arrived at the following conclusions with reference to thermo-radiotherapy:

(1) That the *x*-rays have a more intense action upon warmed cells than upon cold cells.

(2) That the application of this principle under the name of thermo-radiotherapy in the treatment of cancer, by previously cooling the surface of the normal tissues to be traversed by the *x*-rays, produces more rapid destruction of the cancerous tissue with a weaker dose.

(3) That this treatment is applicable to the majority of cancers, but the autointoxication brought about by the cytolysis renders it advantageous to remove as much as possible of the cancer and to fulgurate the field of operation in operable cases.

(4) That in inoperable cases, and with patients who refuse all operative interference, thermo-radiotherapy alone may be employed, care being taken to prevent too rapid cytolysis and consequent autointoxication.

(5) That cases in which the cancer has been completely removed and fulgurated show the same sensitiveness to *x*-rays as do warmed cancers.

Thermo-radiotherapy, alone or in conjunction with fulguration, according to the requirements of the individual case, is being tested at the New York Skin and Cancer Hospital. We are not ready

yet to even express an opinion concerning its merits, further than to say that we would not be testing it if it did not hold out a modicum of hope of at least ameliorating suffering.

In due time the cases treated by means of thermo-radiotherapy, along with those treated by fulguration, will be reported in detail.

34 Gramercy Park.

A REPORT OF TWELVE CASES OF MENTAL DISEASE TREATED WITH SALVARSAN, WITH SPECIAL REFERENCE TO BLOOD-PRESSURE DURING INJECTION.*

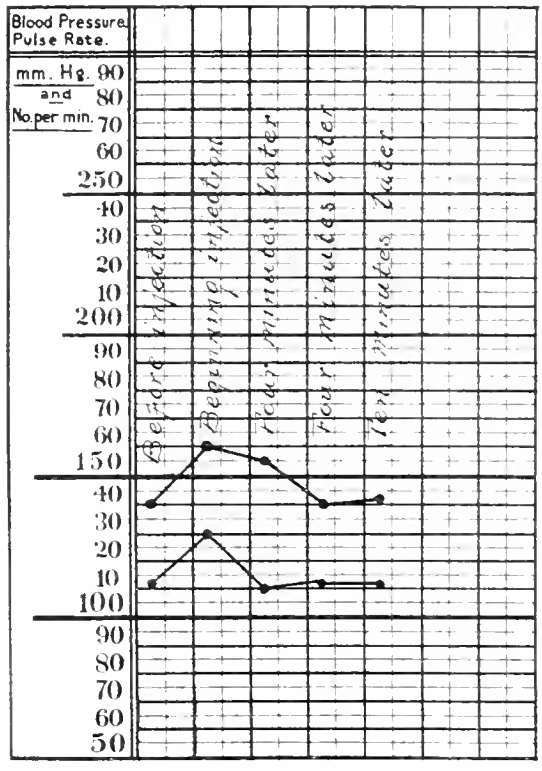
By CLYDE R. McKINNISS, M.D.,

NORRISTOWN, PA

FIRST ASSISTANT PHYSICIAN, DEPARTMENT FOR MEN, STATE HOSPITAL FOR THE INSANE.

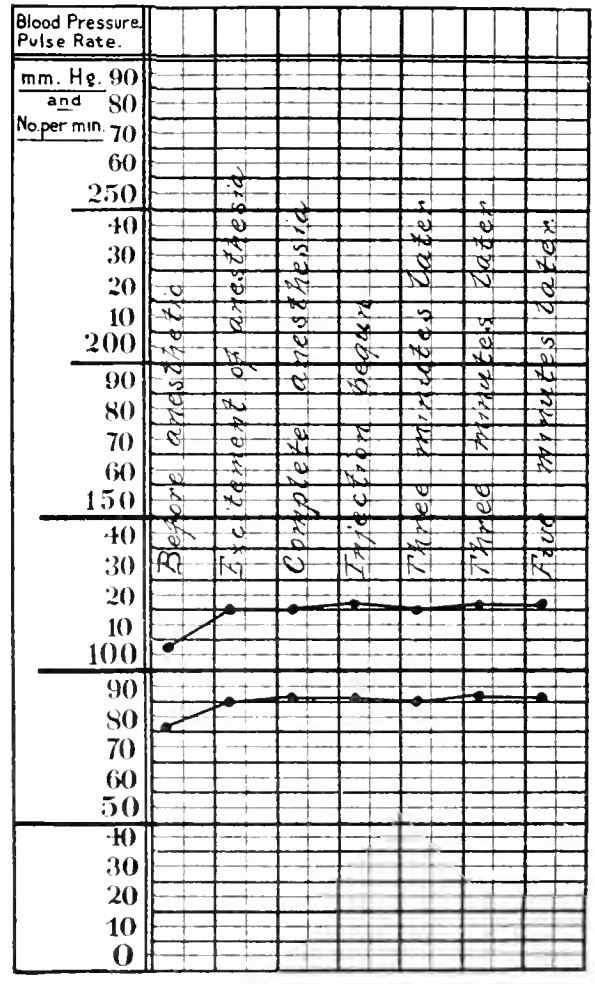
It has been almost two years since Ehrlich introduced salvarsan as an antisyphilitic remedy and the immense literature which has appeared since its introduction shows with what enthusiasm we have received it. For a time Ehrlich attempted to direct its use by placing it in the hands of a limited number and later by circular letters advising as to the dosage and method of administration. Some unfavorable results have been reported, not all of which can be charged to the drug itself, and while at present its use may be more restricted than was at first anticipated, it has undoubtedly gained a permanent place in the treatment of syphilis.

Our first use of salvarsan was in March, 1911, a few months after Ehrlich had recommended the intravenous method of administration in preference to the subcutaneous or deep injections, and all



Case I.—No anesthesia; dose, 0.3 gm. in 100 c.c. salt solution; upper line systolic, lower diastolic pressure.

our patients have been injected in the superficial veins of the arms, the median cephalic or basilic being used. In preparing the drug for injection we have followed, in a general way, the method described by Schreiber, which is as follows: "Into a graduate holding 250 c.c. drop 10 to 20 c.c. of



Case III.—Ether anesthesia; dose, 0.4 gm. in 185 cc. salt solution; upper line systolic, lower diastolic pressure.

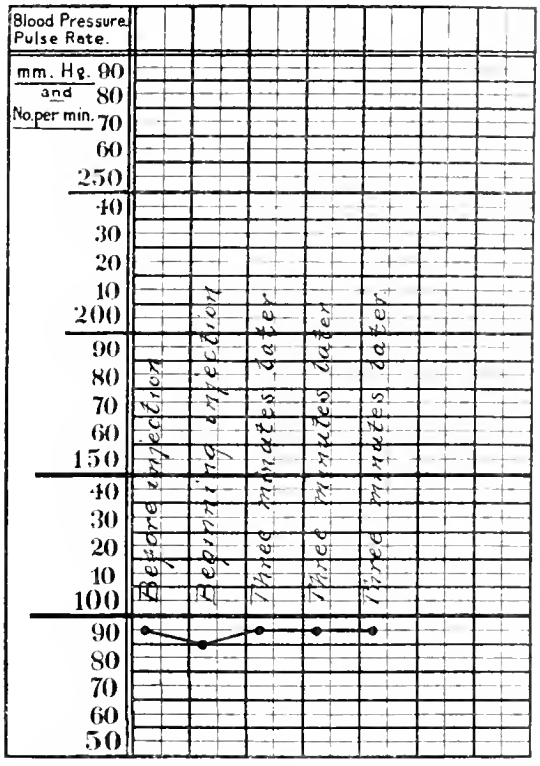
sterilized water, add the required dose of 606, and mix thoroughly until there is a clear solution; add sterile water, or better normal salt solution, to the 100 c.c. mark, then add for 0.1 of 606, 0.7 of normal sodium hydroxide solution and mix until the precipitate is thoroughly redissolved. If after thorough mixture the solution is not clear add a few more drops of the sodium hydroxide solution to produce this and then add sufficient normal salt solution to make 200 to 250 c.c."

We have changed the strength of the sodium hydroxide solution, using at one time a 20 per cent. and again a 10 per cent. solution (normal sodium hydroxide solution being a 4 per cent. solution of sodium hydroxide in water), which by means of a pipet, was added drop by drop to the solution of salvarsan, thus guarding against an excess of the alkali. The total amount of normal salt solution injected has varied from 95 c.c. to 195 c.c.

An examination of the eye grounds, heart, and kidneys was made in each case before treatment, and during the injection records of the blood pressure were made at intervals. The patients were prepared as for surgical operation and the injections were made under conditions as nearly aseptic as possible. A gravity pressure apparatus was used (Daland) and the solution was kept at as near the body temperature as possible.

*Read before the Philadelphia Psychiatric Society March 8, 1912.

We have treated twelve patients and given fifteen injections of salvarsan, and in every case mercury, either by mouth or inunction, has been used as an adjuvant. In only three cases was it



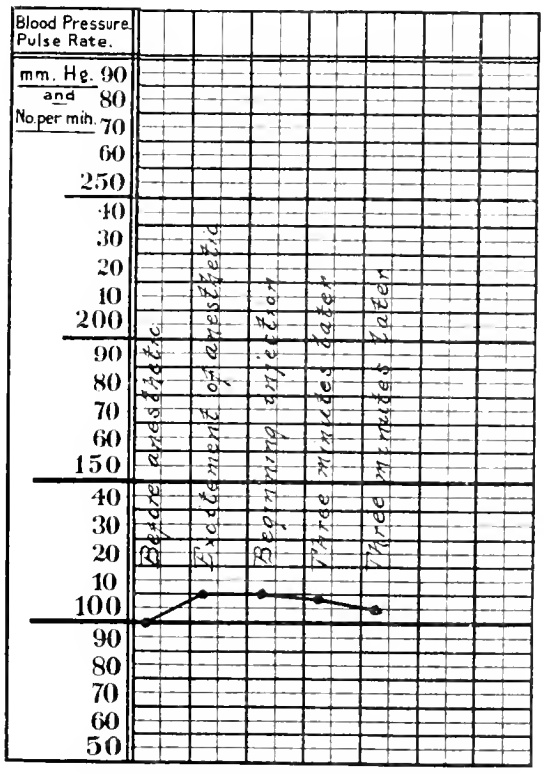
Case IV.—No anesthesia: Dose, 0.4 gm. in 130 c.c. salt solution; systolic pressure.

necessary to cut down on the vein to insert the needle and only two required a general anesthetic. All the patients were kept in bed for two to six days after injection.

Case I.—L. F. H., male, white, aged 44 years; moderate alcoholic; married; no children. Contracted syphilis at 32 years of age. Admitted to Norristown State Hospital April 20, 1909. Psychosis of three weeks' duration, having commenced as a depressed state and passing into a state of excitement with marked psychomotor activity and vivid aural and visual hallucinations. Urine contained hyaline and granular casts; superficial lymph glands enlarged; knee jerks reduced; Rhomberg sign present; hearing slightly impaired. Examination of eye grounds showed no abnormalities; pupils dilated, unequal in size, and reacted sluggishly to light. Diagnosis: Paresis (circular form).

At intervals since he contracted syphilis he had some treatment and after he came to the hospital he was given mixed treatment (corrosive sublimate 1/32 gr., and potassium iodide 10 gr., t.i.d.) for one month, and then inunctions of mercury for six weeks. Examination of the spinal fluid at this time (June 30, 1909) showed it to be clear, colorless, and of normal tension; Noguchi butyric acid reaction negative; cell count 50 lymphocytes per cm. His condition improved so much that he was allowed to go home on a visit after four months in the hospital but was returned after nine months in a state of mild depression. He was given a six weeks' course of mercurial inunctions with little effect. On January 31, 1911, a Wassermann reaction on the blood was $++++$ and the spinal fluid showed slightly increased tension, colorless; Noguchi reaction doubtfully positive; Wassermann $++++$; cell count 17 lymphocytes per c.m. On March 7, 1911, he was given 0.3 gm. salvarsan in the left median cephalic vein, no anesthetic being used. The needle was readily inserted into the vein after a tourniquet about the arm had caused some distention; the amount of normal salt solution injected was 100 c.c., and the rate of flow was 20 c.c. per minute. Instead of a rise in blood pressure there was a gradual fall, as shown by the chart. Slight flushing of the face was present during the injection but no discomfort. About two hours later he had a moderately severe chill and a temperature of 101°.

Before the injection he had been dull and took little interest in his surroundings, but that evening he was talkative and somewhat expansive in his ideas. Seven days after the injection he wrote a well-composed letter to his wife requesting his removal from the hospital, though he had not written any for many weeks before. Within three weeks he was quite grandiose, talkative, and excited; filthy in his habits. An examination of the spinal fluid six weeks after the injection (April 18, 1911) showed it to be clear, colorless; Noguchi reaction positive; Wassermann $++++$; cell count 16 lymphocytes per c.m. He was then given 0.6 gm. salvarsan (preceded by a spinal puncture) in the left median cephalic vein; no anesthetic, no difficulty in inserting the needle; amount of salt solution used 195 c.c.; rate of flow 20 c.c. per minute. Patient experienced no discomfort until two hours afterward, when he had a severe chill with rise of temperature. He gradually became dull and filthy; took no interest in relatives or friends, but after two weeks he passed into a state



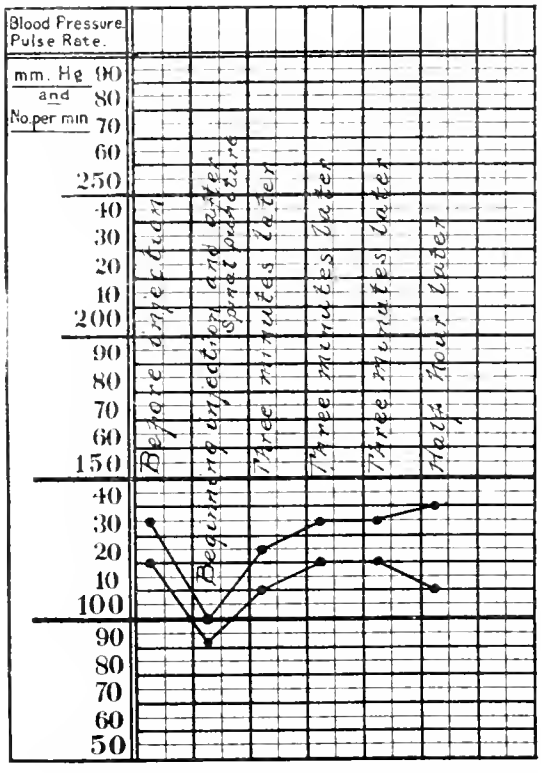
Case V.—Ether anesthesia: Dose, 0.4 gm. in 125 c.c. salt solution; systolic pressure.

of noisy excitement with vivid hallucinations and died from exhaustion two months after the last injection.

Case II.—M. J. G., male, white, aged 45 years;

married (wife insane); no children. Moderate alcoholic. Onset of psychosis two years before admission to the hospital (October 12, 1908). Was depressed, weeping, retarded, and self-accusatory. Syphilis was denied, but he had contracted gonorrhea several years before admission. Knee jerks were reduced; pupils unequal, irregular in outline, and reacted sluggishly to light. Tongue, facial muscles, and fingers showed a fine tremor. Eye grounds normal. Diagnosis: Paresis (depressed form).

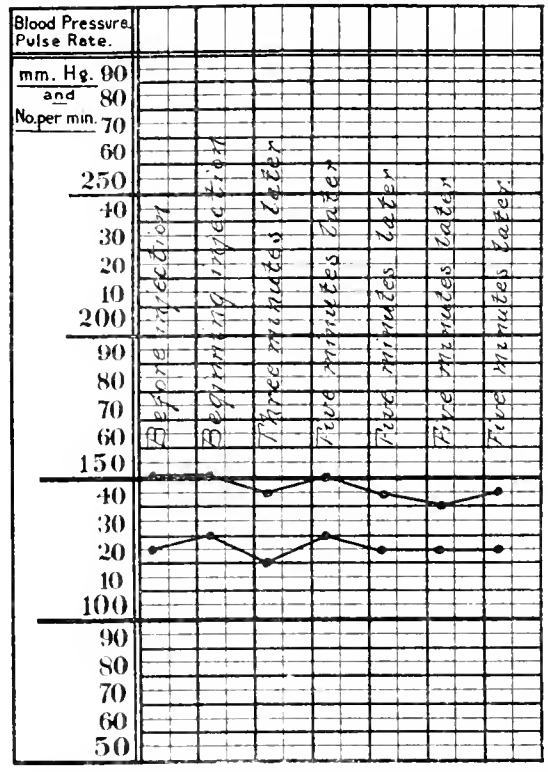
He was given mixed treatment for two months and a Wassermann reaction (December 11, 1910) was ++++; spinal fluid was of high tension; Noguchi strongly positive; Wassermann ++++; cell count 4 lymphocytes per c.m. He was then given 0.3 gm. of salvarsan in the left median cephalic vein (preceded by a spinal puncture), the vein being quite small it was necessary to cut down on it under cocaine anesthesia, to insert the needle. One hundred c.c. of salt solution was injected; rate of flow, 20 c.c. per minute. No unpleasant symptoms appeared. Patient improved some in that he was less retarded; took an interest in his environment, worked some about the ward, and attended the entertainments. On April 18, 1911, examination of spinal fluid showed it clear, colorless; Noguchi positive; Wassermann ++++; cell count 31 lymphocytes per c.m. He was then given (April 18, 1911) 0.6 gm. salvarsan in the right median cephalic vein (preceded by a spinal puncture), 140 c.c. of salt solution being injected; rate of flow, 20 c.c. per minute. Eight hours after the injection he had a slight rise of temperature. Very little improvement followed; he is still in the hospital, though he has been allowed



Case VI.—No anesthesia: Dose, 0.3 gm. in 95 c.c. salt solution; upper line systolic, lower diastolic pressure.

to go on a visit for a day at a time. Talks little, except of his own unworthiness. A Wassermann reaction on the blood (February 21, 1912) was ++.

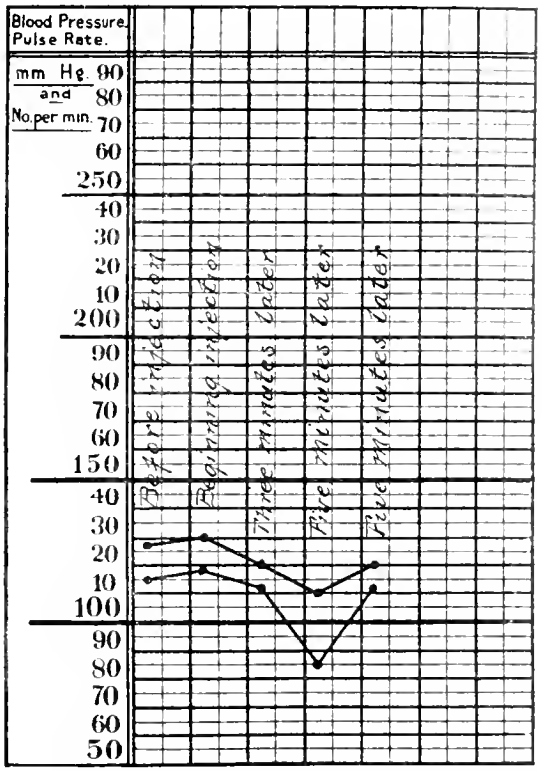
Case III.—R. V. H., male, white, aged 47 years; married; moderate alcoholic. Contracted syphilis at 22 years of age and received some treatment at the time. Admitted to the Norristown State Hos-



Case IX.—No anesthetic: Dose, 0.6 gm. in 140 c.c. salt solution; upper line systolic, lower diastolic pressure.

pital October 24, 1910. Onset of psychosis six months prior to admission, though eight years before he had a period of a few weeks following the death of a child, when he was irritable, talkative, and excitable. The present attack begun with a rather sudden change to mild elation, pressure of activity, and sleeplessness, which led to his commitment to the hospital. When admitted he showed psychomotor restlessness; talked almost continually, and at times a tendency to a flight of ideas was observed. He expressed rapidly changing delusions of persecution and grandeur, weeping and laughing. Pupils were equal and regular in outline but reacted sluggishly and with limited range to light. Knee jerks exaggerated; speech somewhat slurring. A tentative diagnosis of paresis was made, though in many ways he suggested the manic phase of manic-depressive psychosis. He was given mixed treatment and inunctions of mercury for four months and two examinations of the blood showed Wassermann +++; spinal fluid was clear, colorless, of low tension; Noguchi reaction positive; Wassermann negative; cell count 25 lymphocytes per c.m. He was then anesthetized and given 0.4 gm. salvarsan in the left median cephalic vein, 185 c.c. salt solution being injected; rate of flow, 10 c.c. per minute. As seen by the chart the blood pressure rose during the excitement of etherization and again with the beginning of the injection of salvarsan. No unpleasant symptoms followed until the eleventh day, when he had two general convulsions which were apparently in no way the result of the salvarsan. No improvement was seen and he died two months after the injection from exhaustion of paresis. The findings at autopsy were those of paresis.

Case IV.—A. T., male, white, aged 48 years; married, one healthy child. Contracted syphilis at 22 years of age, for which he received six months' treatment. Moderate alcoholic. Admitted to the



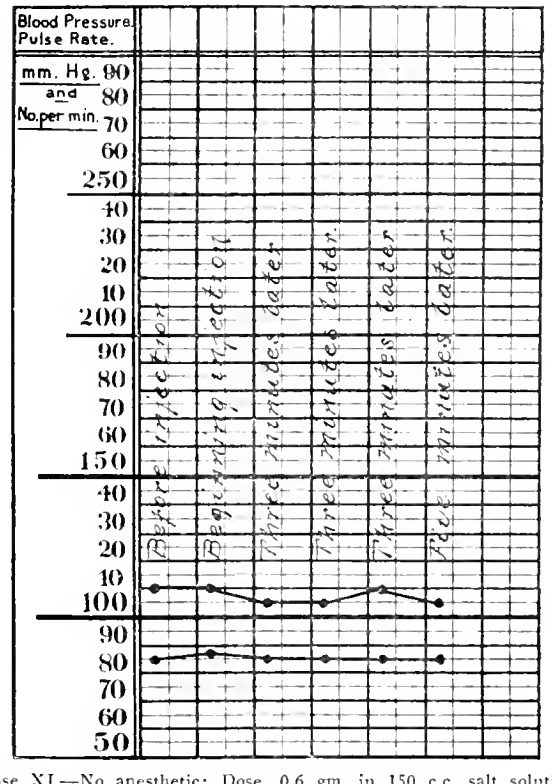
Case X.—No anesthetic: Dose, 0.6 gm. in 150 c.c. salt solution; upper line systolic, lower diastolic pressure.

Norristown State Hospital June 13, 1907, with the onset of mental symptoms one year before that time, though for nine years he had had tabetic symptoms of tingling and pricking of the feet, gastric crises, and girdle pains. When admitted he was quite grandiose and noisy, filthy in his habits, profane and obscene in language. He had moderate arteriosclerosis, gait unsteady, and Rhomberg sign marked; knee jerks abolished, Argyl-Robertson pupils, fine tremor of tongue and facial muscles, an occasional involuntary jerking of the leg muscles. Examination of eye grounds, after pupils were dilated, was negative. Diagnosis: Taboparesis.

A Wassermann reaction on the blood (December 7, 1910) was + +, and spinal fluid (March 14, 1911) showed normal tension, slightly blood tinged: Noguchi reaction weakly positive; Wassermann negative; cell count showed no lymphocytes. He was given 0.4 gm. salvarsan in the left median cephalic vein (preceded by a spinal puncture), no anesthetic, injection was easily made; 130 c.c. of salt solution was injected; rate of flow, 20 c.c. per minute. No unpleasant symptoms resulted; blood pressure showed little change. About a half hour after the injection he complained of slight headache and nine hours later temperature rose to 101.4°, but returned to normal the following day. A Wassermann reaction on the blood (April 17, 1911), one month after the injection, was + + +. He gained ten pounds in weight, became more tidy in habits, quiet in manner, helped some with the ward work. At present he has been home on a visit for eight months, though he is far from being well mentally and requires some observation by relatives.

Case V.—D. B., male, white, aged 31 years; married, has three healthy children. Contracted syphilis at 21 years of age while in the army. Received some treatment with mercury. His psychosis was of ten months' duration when admitted to the Norristown State Hospital on March 21, 1910, and had commenced with depressive ideas and the belief that his lungs, brain, and other organs were missing or deformed. When admitted he was in an advanced stage of paresis; untidy and confused; pupils irregular in outline but reacted promptly to light; knee jerks diminished; tongue and facial muscles tremulous; speech slurring, writing characteristic; eye grounds normal. He was treated with mercurial inunctions for three months, and mixed treatment for three months longer with no apparent results.

A Wassermann reaction on the blood was + + + + and the spinal fluid was of low tension, slightly turbid; Noguchi weakly positive; Wassermann negative; cell count, 36 lymphocytes per cm. He was then anesthetized and given 0.4 gm. of salvarsan in the left median cephalic vein, 125 c.c. of salt solution being injected; rate of flow, 20 c.c. per minute. A slight rise of blood pressure was recorded. No change whatever followed the injection. Six weeks later a Wassermann on the blood was + - + +; the spinal fluid was clear, colorless; Noguchi positive; Wasserman + + + +; cell count, 36 lymphocytes per c.m. He was then given 0.6 gm. of salvarsan (May 1, 1911) in the left median cephalic vein, 140 c.c. of salt solution being injected (preceded by a spinal puncture). About half an hour afterward he became cyanotic and pulse feeble but he responded to stimulation. Within an hour he again showed



Case XI.—No anesthetic: Dose, 0.6 gm. in 150 c.c. salt solution; upper line systolic, lower diastolic pressure.

marked circulatory depression, but again improved under stimulation. No improvement in symptoms whatever has resulted. He is still in the hospital, untidy, destructive, and at times noisy. A

Wassermann reaction on the blood on February 21, 1912, was + +.

Case VI.—C. G. S., male, white, aged 45 years; married, seven children living and nine died in infancy. Moderate alcoholic; denied syphilis. Admitted to the Norristown State Hospital (April 20, 1908) with onset of psychosis one year before. Was quite grandiose, had delusions of infidelity, at times violent. Facial muscles relaxed and tremulous; tongue tremulous; Rhomberg sign present; knee jerks exaggerated; pupils equal and reacted sluggishly to light. Diagnosis: Paresis (expansive form).

A Wassermann on blood (February 2, 1911) was + + + +; spinal fluid (March 21, 1911) was of normal tension; turbid; Noguchi reaction strongly positive; Wassermann + + + +; cell count, 78 lymphocytes per c.m. He was then given 0.3 gm. of salvarsan in the left median cephalic vein (preceded by a spinal puncture). On account of the large amount of fat it was necessary to expose the vein to insert the needle, 95 c.c. of salt solution being injected, rate of flow being 20 c.c. per minute. Blood pressure showed little change; no unpleasant symptoms resulted, but the following day he removed the dressing and infected the wound, causing a rise of temperature to 99.8°. No improvement followed and patient is failing gradually. A Wassermann on the blood (April 27, 1911), four weeks after the injection, was + + +, and again (February 24, 1912) a Wassermann on the blood was + + +.

Case VII.—A. G., male, white, aged 37 years; divorced, no children. Alcoholic, with occasional excesses. Contracted syphilis at 27 years of age and was treated for a time. Admitted to the hospital September 18, 1910, with a psychosis of 18 months' duration. The onset was with a short period of depression followed by sudden development of many expansive delusions. He had muscular tremors and weakness; knee jerks exaggerated; pupils unequal, but reacted promptly to light; speech slurring; eye grounds normal. He had a six weeks' course of mercurial inunctions and then mixed treatment for six weeks, and examination of blood showed the Wassermann reaction (December 7, 1910) + +, a second examaination (December 18, 1911) + + +. Examination of the spinal fluid (March 21, 1911) showed it to be clear, colorless, of increased tension; Noguchi reaction positive; Wassermann + + +; cell count, 26 lymphocytes per c.m. Diagnosis: Paresis (expansive form).

He was then (March 21, 1911) given 0.3 gm. of salvarsan (preceded by a spinal puncture) in the left median cephalic vein, 150 c.c. of salt solution being injected, no anesthetic used, and no difficulty in inserting the needle. In half an hour he was nauseated and vomiting; that evening he had a temperature of 101°. For eight days he continued to have a slight rise of temperature and occasional headaches. For about six weeks before the injection he had shown some improvement and continued to improve for a month, when he was permitted to go home on a visit. At that time he was quiet, tidy in habits, and took an interest in the hospital amusements. He remained at home for eight months in a well-marked remission, and for a short time worked at his occupation as a cigar salesman, but was returned to the hospital December 18, 1911, in a noisy, expansive state. A Wassermann on the blood was + + + +. He failed rapidly and died February 1, 1912, from exhaustion of paresis.

Case VIII.—W. L. F., male, white, aged 32 years; married, one child. Contracted syphilis at 22 years of age and received some treatment. One year before admission he had a mild convulsion and for six months showed impaired memory. Before his admission his condition had been diagnosed as hysteria, and later as neurasthenia. When he came to the hospital he refused to talk or eat; resisted everything that was done for him; appeared in fear of personal injury; at times would weep; was filthy in habits; sat or stood in a stiff attitude; hands and feet cyanotic. Urine showed an occasional hyaline cast; peripheral arteries palpable; pupils equal and regular, reacted well to light. Tendon reflexes could not be tested on account of resistance of patient. At that time his condition strongly suggested the catatonic form of dementia præcox, but a Wassermann on the blood (April 27, 1911, was + + +, and the spinal fluid (May 25, 1911 was slightly blood tinged; Noguchi reaction positive; Wassermann + + + +; cell count, 36 lymphocytes per c.m., and a diagnosis of paresis was made. He was given mercurial inunctions for six weeks and after an interval of three weeks the course was repeated. On May 23, 1911, he was given 0.6 gm. of salvarsan in the left median basilic vein, no anesthetic being used, 160 c.c. of salt solution being injected. The injection apparently had no effect on the psychosis, and the patient died four months later (September 9, 1911) of exhaustion of paresis.

Case IX.—H. C. S., male, white, aged 38 years; married, no children; wife had three miscarriages. Moderate alcoholic. Contracted syphilis at 20 years of age and was treated for one year. Admitted to the hospital January 25, 1908, with the history that three years before he had been depressed, threatened suicide, had severe headache. About one year before admission he developed expansive delusions; memory became impaired, speech slurring, gait unsteady; he had a tremor of the tongue and facial muscles; knee jerks exaggerated; pupils equal and regular in outline but reacted sluggishly to light; moderate sclerosis of the peripheral arteries. He was given a six weeks' course of mercurial inunctions and on March 25, 1911, a Wassermann on the blood was + + and the spinal fluid was clear, colorless, low tension; Wassermann negative; Noguchi negative; cell count 2 lymphocytes per c.m. He was then given 0.6 gm. of salvarsan in the left median basilic vein, the vein being exposed under cocaine anesthesia as we had some difficulty in inserting the needle, 140 c.c. of salt solution being injected. There was slight flushing of the face but no headache or rise of temperature; the blood pressure changed little during the injection. A Wassermann on the blood (February 24, 1912) was still + + and his mental condition is gradually growing duller, with no benefit from the treatment. Diagnosis: Syphilitic pseudoparesis.

Case X.—L. G. K., male, white, aged 45 years; married, no children, wife had one miscarriage and one still birth. Denies syphilis, but has a suspicious scar. Admitted to the hospital March 12, 1910, with the onset about four years before, beginning with some depression, loss of flesh, sever headaches in frontal region. Had some insight at first but this was soon lost, and when he came to the hospital he had many delusions of persecution and

well-marked hallucinations of hearing. Knee jerks exaggerated; pupils unequal and irregular in outline, and reacted sluggishly to light. Tongue and facial muscles tremulous; peripheral arteries palpable. A Wassermann on the blood (April 5, 1911) was + + +, and he was given a six weeks' course of mercurial inunctions, followed by mixed treatment for four months. Examination of the spinal fluid (March 17, 1911) showed it to be clear, colorless, normal tension; Noguchi negative; cell count negative (acellular) and a later examination (October 6, 1911) showed the spinal fluid clear, slightly tinged with blood, normal tension; Noguchi negative; Wassermann negative; cell count negative. He was then given 0.6 gm. of salvarsan (October 30, 1911) in the left median cephalic vein, 150 c.c. of salt solution being injected; rate of flow, 20 c.c. per minute. No anesthetic was used and the injection was made without difficulty; there was some flushing of the face and fullness in the head with a slight fall in the blood pressure. Two hours later he became nauseated when lifting his head from the pillow, but this disappeared when he resumed the recumbent posture. The following morning (20 hours later) he complained of a strong metallic taste in his mouth. At present this patient is much improved physically and shows considerable mental improvement; he has gained ten pounds in weight; is more tidy about his person; helps well with any work he is requested to do, though he did no work before for many months; is good natured and respectful in language, though before was profane and obscene, and tells us he feels less "nervous" than he did before the injection. A Wassermann on the blood (March 1, 1912) was +. It might be advisable to give this man another injection at an early date. His diagnosis was cerebral syphilis.

Case XI.—G. L. C., male, white, aged 45 years; married, one healthy child. Alcoholic with occasional excesses. Contracted syphilis at 18 years of age and received some treatment. Admitted to the hospital October 12, 1911, with a history of the onset six months before with irritability due to loss of employment and overwork trying to establish a new business; he became quite grandiose, spent what money he had saved, was talkative and restless so that he was committed to a hospital, where he was confused for five weeks and then alternated between short periods of excitement and dullness with retardation in thought and action. At that time he strongly suggested the manic-depressive psychosis, but later paresis was suspected. When he came to us he remained in a rigid posture on his back, motionless and eyes wide open; he would not talk, but when questioned he became tearful and occasionally would slowly obey a command. Knee jerks were increased; pupils unequal but reacted promptly to light. A Wassermann on the blood was + + +, and he was given mixed treatment for four weeks and inunctions of mercury for four weeks longer. Examination of the spinal fluid (November 29, 1911) showed it to be clear, colorless, of high tension; Noguchi negative; Wassermann negative; cell count, 5 lymphocytes per c.m. He was then given 0.6 gm. of salvarsan in the left median basilic vein, no anesthetic being used, 150 c.c. of salt solution being injected. During the injection he had flushing of the face and some fulness in the head, there was little change in the blood pressure, but that evening he had slight rise of temperature and headache. He then had mercurial treatment until January 13, 1912, when a Wassermann on the blood was + + +. He has improved gradually and gained fifteen pounds in weight; his mental condition has also improved and he will probably recover entirely from the psychosis. A Wassermann on the blood (February 21, 1912) was —. Another examination of the blood will be made later to see if the Wassermann remains negative. His diagnosis we believe to be cerebral syphilis.

Case XII.—P. G., male, white, Italian, nine years in America, aged 30 years, single. Denies syphilis. Admitted to the hospital June 29, 1911, from the Eastern Penitentiary, the psychosis having developed in prison and was classed in the præcox group. Urine showed a trace of albumin and an occasional granular cast; he had tenderness over the stomach and a hard tumor extending downward and inward from the spleen two finger breadths below the costal margin; he had occasional attacks of vomiting and slight rise of temperature (100°). Examination of a test meal was practically negative. Examination of the blood showed hemoglobin 78 per cent., red cells 4,910,000, white 6,200; Widal negative; Wassermann + +. Examination for malarial plasmodia showed some pigment granules both outside and within the cells. On January 17, 1912, he was given 0.6 gm. of salvarsan in the left median cephalic vein, no anesthetic being used, 165 c.c. of salt solution being injected; rate of flow being 20 c.c. per minute. There was slight flushing of the face, but no unpleasant symptoms and no apparent improvement in the mental symptoms, but the vomiting has disappeared. An examination of the blood failed to show the pigment granules and a Wassermann (February 24, 1912) was +.

We are hardly justified in attempting to draw conclusions from an experience with so few cases treated, but a few points have attracted our notice:

(1) The intravenous administration of salvarsan in our cases has been a simple matter with no serious complications.

(2) There was very little change in the blood pressure even when 195 c.c. was injected.

(3) Two of our cases, whose psychoses were thought to be due to syphilis of the brain, were much improved by treatment; while two cases of paresis showed some temporary improvement. We doubt very much if paresis will be benefited by salvarsan.

(4) There is nothing in our experience to show the advantage of salvarsan over mercury in the treatment of syphilis.

LOCAL ANESTHETICS IN THE UPPER RESPIRATORY TRACT, INCLUDING THE ADRENALIN PREPARATIONS.*

By WOLFF FREUDENTHAL, M. D.,

NEW YORK.

All those who have done any surgical work in the days when there was no local anesthesia—that is, in the pre-cocaine era—will appreciate the great benefit derived by laryngologists, above all, from local anesthetics. Furthermore, just as the invention of Esmarch's bandage was of the greatest importance for bloodless operations on the extremities,

*Read before the Section on Laryngology of the N. Y. Academy of Medicine, March 27, 1912.

so the discovery of adrenalin meant for us in many instances a practically bloodless operation. Since all progress of whatever kind involves new dangers which we have to overcome, so it is with these new drugs, for there will be no doubt even in the mind of a beginner that, invaluable as these inventions are, they carry in their path many a danger. It is for us to decide where the danger point commences and how far we can go to produce anesthesia.

There are many ways of producing local anesthesia, as, for example, the local application of cold, compression of the nerves, etc. We shall not discuss these, but only that anesthesia which is produced by direct contact of chemicals with the mucosa. Generally speaking, all these chemicals are protoplasm poisons, which not only paralyze the sensitive nerve elements, but for a time also abolish the function of all living protoplasm without leaving a permanent effect. Consequently such drugs may produce general intoxication if they are absorbed quickly and in a concentrated solution. The degree of intoxication is proportional to the rapidity and intensity of the local anesthesia. It is an established fact that a small portion of the fluid always gets into a vein or lymph duct and may be carried quickly into the circulation. The larger portion, however, remains at the place of application and is absorbed slowly. The effect will therefore be so much more intense the slower the drug is absorbed from the area to which it is applied. An attempt has been made to prevent speedy absorption with results which will be discussed later.

Cocaine.—In the category of anesthetics we shall first mention cocaine, which was extracted from the leaves of erythroxylon coca in 1859 by Niemann and which was introduced into ophthalmology by Carl Koller, now of New York.

It is useless to describe to you the application of cocaine to the upper air tract, but I may be permitted to say here that acute intoxication after cocaine is not a very rare occurrence in our practice. One may merely notice a slight faintness, a small pulse, and heavy breathing. In more severe cases there are cold perspiration, dryness in the throat, a feeling of impending dissolution, hallucinations, laughter, unconsciousness, epileptiform attacks, coma, and finally paralysis of the respiratory center. Weigand found that in seventeen intoxications occurring after application of cocaine to the nasal mucosa there was no fatal result; in twelve poisonings after the aplication in the mouth and pharynx, two deaths resulted, and in eleven poisonings after anesthetizing the larynx, one death.

Chronic cocainism is nowadays quite rare after nasal applications, since we have learned how to avoid such occurrences. Occasionally, however, you hear of chronic cocaine poisoning which happens in people addicted to morphinism, when they use cocaine injections as a palliative. It is an unpleasant matter if you have to operate on a patient afflicted with chronic cocainism. The writer had one such case, a man forty-five years of age, on whom he operated for deviation of the septum. At that time we used Asch's method and generally put in the splints afterwards. I had operated in the afternoon, but was called out in the middle of the night, and when I got to the patient I saw him sitting in a chair leaning over a basin, a discharge constantly dripping from both his nostrils. The discharge had been so great that the splints had fallen out (fortunately there was no hemorrhage), but the patient was in an extremely nervous and irritable condition. I then found out that he had been in Europe two years previously and had received a snuff containing cocaine, which he had used daily since.

Cocaine has been combined with other substances, as, for example, antipyrin, 5 to 10 per cent., carbolic acid, and resorcin, but the addition of carbolic acid (4 per cent.) neither diminishes its toxicity nor does it increase the anesthetizing power. A mixture of pure cocaine with pure phenol (von Oefele) has been recommended by French authors, but Heinrich Braun of Leipsic properly rejects it because it affects the tissues very much and has produced gangrene.

Cocaine was for a long time the only local anesthetic in use, but very soon quite a number appeared, some of which were derived from other varieties of coca leaves, while others were purely synthetic. To the first group belongs

Tropacocaine.—This is an alkaloid derived from Java coca leaves. The solutions are stable and are not decomposed by sterilization. Unlike cocaine, tropacocaine does not bring about partial anemia of the mucosa, and perhaps for that reason alone it has not been introduced very much into our practice. Seifert observed several times profuse hemorrhages after the use of tropacocaine. It is hardly mentioned of late in any publication. Of the synthetic products I mention here

Novocaine.—This, too, can be sterilized and an injection of a 2.5 per cent. solution does not produce any pain nor any ill effect. Irritation occurs only when we use a 10 per cent. solution. It can readily be mixed with adrenalin. Experiments by Pouchet, and later on by Reclus, have demonstrated that here as elsewhere two factors are of importance in cases of intoxication: first, the degree of concentration, and secondly, the rapidity of absorption. Four centigrams of novocaine that had been dissolved in one c.c. of water were injected into an animal which soon died. In another animal one decigram, or $2\frac{1}{2}$ times as much, dissolved in 15 cc. of water, was injected, and this animal remained alive. Piquand and Dreyfus injected into the ear of an animal a 1 per cent. solution of novocaine so that 5 c.c. of the fluid were introduced per minute. After three minutes, that is, after 15 centigrams had been injected, the animal died. When the rapidity of the injection was doubled the animal died after 9 centigrams were injected. When, on the other hand, the rapidity was diminished twofold, that is, when they took two minutes to inject 5 c.c., the animal died only after it had received 20 c.c. of the solution. Interesting as these experiments are for the question that chiefly concerns us, we must admit that novocaine is being used little in this country, although it is strongly recommended by some French and German authors.

Stovaine.—During the last few years stovaine has been widely discussed in laryngologic literature as well as in general surgery. It has been recommended as a substitute for cocaine, but stovaine, too, is a poison to the central nervous system and is seldom used nowadays in laryngology.

Alypin.—This drug has been lauded by several observers very highly. Others, however, assert that anesthesia produced by alypin is very weak. It may have a place in the amputation of the enlarged turbinated bodies, since it does not cause, as does cocaine, a very marked contraction of the hypertrophied turbinal. There are quite a number of other drugs recommended for local anesthesia

which, however, I do not care to discuss here, since their anesthetizing properties cannot be compared with those of cocaine, although their toxicity often is much less.

Orthoform.—Of far-reaching importance was the discovery of orthoform and two similar preparations. They are not very soluble and are not used in surgical practice, but as anesthetics and analgesics of long enduring action, especially on ulcerations of mucous membranes. They are of great value in such cases, and we can hardly see how any laryngologist can get along without the use of orthoform.

While cocaine produces oligemia, that is, a partial anemia of the mucosa, through contraction of the blood vessels, a new and wonderful remedy has been discovered which produces ischemia, that is, total anemia of the membranes and reduces the vitality of the membranes temporarily — characteristics which are so essential for the production of local anesthesia. This remedy is

Adrenalin.—In Germany they use the word "suprarenin" for the many preparations of the suprarenal bodies. Here in America, in England, and in France the term adrenalin is used mostly. As wonderful as the effect of this drug is, its application is sometimes dangerous. As this is one of the most important remedies in our daily practice, we will discuss it fully at this point.

In 1901 Takamine wrote that adrenalin did not have any toxic effect on the heart. This assertion was believed by every laryngologist, so far as I know, but it proved to be erroneous and misleading. There is no doubt that we have to deal here with a drug which, aside from its local action, may and does create a very toxic general effect if it is brought into the circulation in sufficient quantity and concentration. Carnot and Josserand have shown that it acts differently in different animals. Thus, one dog could stand, without any inconvenience whatsoever, the enormous dose of 0.5 miligram (intravenously) for each kilogram body weight, while another dog succumbed to a dose twenty-five times weaker. The same holds good for human beings. H. Braun and Doenitz injected adrenalin into themselves. When they used 0.5 miligram (equivalent to one-half cubic centimeter) general symptoms appeared, such as a sensation of depression, high pulse, and dizziness. When adrenalin was diluted ten times with a saline solution, they were able to inject double the quantity of it without producing any toxic symptoms. Furthermore, Braun added five drops of ordinary suprarenin solution to 100 c.c. of normal saline solution, that is, 1:600,000, and even with that dilution he had good results from injections.

Lermoyez and Aubertin have made many experiments on guinea pigs and have come to the conclusion that great care has to be taken in giving large doses of adrenalin on account of the dangers connected with it (edema of the lungs and hypertrophy of the heart muscles).

From these experiments and others previously mentioned we learn that one should never inject a large quantity of adrenalin into the circulation suddenly, nor should it be concentrated, or else toxic effects will appear. One may almost make it a rule that the slower we inject adrenalin and the more diluted it is, the less danger there will be.

When applied to the surface of the mucosa on a pledget of cotton or rubbed into the mucosa by-effects of adrenalin have not been seen.

Combination of Adrenalin with Other Anesthetics.—A. Froehlich and O. Loewi found that small doses of cocaine when used alone were very ineffective, but greatly increased the action of adrenalin, that is, in regard to its intensity and duration. *Vice versa*, it was found that a small addition of adrenalin to the cocaine was very effective and that it could be used well in non-operative cases. This last fact does not seem to be generally known. I am thinking now especially of local anesthesia for bronchoscopic work.

Recke investigated different substances of the cocaine group, especially holocain, acoin, nirvanin, and subcutin, and found that they could be combined effectively with suprarenin, but that the anesthetizing potency is slight compared to that of the cocaine-suprarenin mixture. Novocaine combines better with adrenalin, but after all it seems that cocaine is the only one of its group which does not abolish at all the vasoconstrictor properties of adrenalin.

Wherever we can stop bleeding immediately after the operation, we should *a priori* not expect any after hemorrhages. But in our work we cannot protect ourselves against that, first, because the mucosa has to be made as anemic as possible, and, secondly, because the sewing up of the wound and tying of vessels is not possible, for the simple reason that we are not able to see the blood vessels. That also may explain the occurrence of a hematoma after septum operations when tampons have been used on both sides of the nose. But this is only *àpropos*.

After having discussed the different drugs used to produce anesthesia let us consider now some of the more important operations performed in the upper air tract and their dangers. First, the *frontal sinus.* No less a man than Luc, of Paris, performed successfully the radical operation on the frontal sinus bilaterally under local anesthesia. The author has every reason to be satisfied with his success, but we are forced to believe that local anesthesia will never be used generally for such a large operation.

The operation most frequently performed within the nasal cavity nowadays is the so-called *submucous resection of the septum.* There are different ways of anesthetizing these parts, of which I shall mention first the perineural injections of anesthetics, recommended by several authors; then the application of pure cocaine to the mucosa. This method usually known as Freer's consists in swabbing the mucosa with cotton-wound applicators moistened in adrenalin and then passed through powdered cocaine. It gives an excellent and complete anesthesia, but some writers ascribe to it a distinct disadvantage, in that the percentage strength of the anesthetic is not accurately known. They recommend, first, that pledgets of cotton wool soaked in a 10 to 20 per cent. solution of cocaine, to which adrenalin is added, be packed against the septum. Then the septum should be painted over with the above solution and subsequently infiltrated with cocaine, plus adrenalin. Undoubtedly many laryngologists have not used Freer's method for fear of cocaine poisoning, yet the writer has applied it many times and never had any unpleasant accident from the application of pure cocaine in powder.

But as soon as we commenced infiltrating the tissues with cocaine plus adrenalin or with adrenalin alone, danger signals were seen, but not understood. When the patient was under a general anesthetic after the injection of adrenalin I have repeatedly

warned my assistants both in private and hospital practice as soon as I saw the patient suddenly blanch and show signs of respiratory difficulty. The first real accident with adrenalin was brought out in a discussion on Dr. Thomas J. Harris' paper (to be mentioned later on) by Dr. Thomas Hubbard, of Toledo, Ohio. Dr. Hubbard knew the details of the case and was kind enough to send them to me. The patient was a man about thirty years of age, healthy, except that he was very nervous from overwork. The operation was for removal of adhesions of hypertrophied turbinates to the septum and for deviated septum. Ether-chloroform anesthesia was given by a very expert man. "The patient took the anesthetic normally and was in excellent condition when the anesthetist told the operator to go ahead, and stopped the anesthetic, of course. Ten or twelve minims of adrenalin chloride, 1-1000, were injected into the turbinates, I presume, and a second injection was about to be given, or had been partly given, when the patient suddenly blanched, the heart stopped, and respiration gradually faded away.

"It is accepted here that adrenalin was the cause of death in the case reported and probably 12 or 15 minims were injected. Some escaped into the pharynx. In several discussions I have heard of so many narrow escapes that I am convinced that there is danger in its use in tissues that have rich blood supply, large venous channels, quick return to the heart, etc. It seems to me that if 5 minims (subcutaneously) will almost instantly check bronchial asthma, it is evidence of its extraordinary physiological activity."

So far Dr. Hubbard. A very similar accident occurred in the writer's own practice. A man twenty-six years of age, strong and well, asked to be put under general anesthesia for the correction of his deviated septum. That was done, and, while the writer was getting ready to operate, one of his assistants injected about ten drops of adrenalin, 1-1000. The assistant, having noticed in former operations that subperichondreal infiltration facilitates the detachment of the mucoperichondrium and mucoperiosteum, thought it best to raise the mucosa greatly by one strong injection of fluid. Unfortunately, the injection was not diluted. When I turned toward the patient a few seconds later, an extreme pallor appeared over the face and breathing seemed to have stopped immediately. There were four other very experienced general surgeons in the room, incidentally, and we all worked, together with our assistants, for a long time over this patient, but in vain.

I may add here that the accident occurred through the use of adrenalin in a system that was already somewhat depressed by chloroform. It was certainly not the action of chloroform that brought about the death, because in such cases we have not the exquisite and sudden pallor shown in all the accidents occurring after the use of adrenalin. Cocaine had not been used.

Other cases are reported in the literature which I mention here in order to bring them to your notice. Thus before the Society of German Surgeons Enderlen of Marburg reported briefly in a discussion the case of a weak woman, in whom he injected a very mild solution of cocaine, plus six to eight drops of adrenalin. The woman died and the death was attributed by Enderlen to the adrenalin.

Riballier injected five drops of suprarenin, 1,1000, into a child three months and a half old, whereupon a serious collapse occurred. The main law not to inject concentrated solutions was neglected here, too.

I have spoken to several other physicians about that matter and most of them recognize the danger of adrenalin injections. Dr. Wm. R. Butt of Philadelphia writes: "As the constitutional symptoms have been much more severe since using the adrenalin and cocaine mixture hypodermically than they were when cocaine alone was so used, and as they come on within a few seconds after the injection, I have for some time felt that they were due mostly to the adrenalin. When the adrenalin is rubbed on the mucous membrane or into the raw tissue with a cotton applicator the effect seems to be far less severe."

Dr. George B. Wood of Philadelphia believes that in about 10 per cent. or more of his patients in whom the drug has been applied in full strength secondary vasomotor relaxation occurs. An important paper on this subject was published only a few weeks ago (February 24) in the *British Medical Journal* by B. Seymour Jones. He proceeds as follows: Both nasal passages are sprayed with a 20 per cent. solution of cocaine, plus adrenalin *equal parts*. Secondly, both sides of the septum are thoroughly rubbed with cotton wool mounted on wool carriers soaked in the same solution of cocaine and adrenalin. He then injects a one-fifth of 1 per cent. solution of cocaine, to which adrenalin is added and he uses of adrenalin altogether twelve drops for the injections. He has had occasionally, like other observers, a collapse due to cocaine after fifteen minutes, but he writes: "In this connection I should like to interpolate a report of three cases showing the alarming effect of the sudden absorption of adrenalin on the septum, a fact due, in my opinion, to the action of adrenalin on the circulatory system depressed by chloroform and not the result of a nasal reflex."

The report of the three cases follows:

Case I.—A pale, anemic woman with feeble circulation was fairly deeply anesthetized before the submucous injection was thrown in. About a minute after this the patient blanched, became intensely pallid, respiration ceased, and the pupils suddenly dilated. She was promptly inverted, and after about twenty to thirty seconds of anxious waiting she gave a sighing respiration, then a second, and finally recommenced breathing.

Case II.—This occurred in a woman about a month later, almost in the same way, except that the untoward symptoms appeared earlier. Inversion restored her breathing, etc.

Case III.—This was a case of endonasal operation for antral suppuration. The patient was rather deeply anesthetized and ½ c.c. of normal saline with a few drops of adrenalin, 1-1000, was injected into the anterior end of the inferior turbinate. Within ten seconds respiration ceased, the pulse was suppressed, and the pupils widely dilated. She was inverted immediately and respiration was gradually restored.

Dr. Jones says: "The effect was attributable to adrenalin, as no cocaine had been used, and in the last case it occurred earlier owing to the wide venous spaces in which it was injected and more rapid absorption into the system." This last statement is quite in accord with my own conception of these cases as mentioned above. Dr. Jones was very lucky that his cases were not more serious.

We now come to the surgery of the *turbinated bodies*, and here I should like to warn again not to

inject any cocaine or adrenalin preparations, for the absorption is too quick and the dangers are too many. Many years ago the writer injected cocaine for certain other reasons. Not only violent headaches appeared, but also collapse, etc. Many observers have now given up injections into the turbinals. If we have to apply an anesthetic we may use any of these preparations on a pledget of cotton, and here perhaps the use of alypin is more advisable than that of cocaine, since it does not shrink the tissues to the same extent as the latter.

The *maxillary sinus.* In order to produce local anesthesia here different means are now in vogue. Thus submucous injections in the region of the middle meatus are being made effectively by several men and the radical operation performed.

Sturmann of Berlin and others use the following mixture:

Cocaini mur.....	1.0
Tr. iodi.....	
Ac. carbol. aa.....	0.3
Glycerini puriss.....	10.0
Aquæ q. s. ad.....	100.0

with a small addition of suprarenin.

Denker proceeds in the following manner: He paints the mucosa of the gingiva with a 10 to 20 per cent. solution of cocaine-suprarenin. Then he makes subperiosteal injections of the following solution: Novocaini, 1.0; normal saline, 100.0; adrenalin (1-1000) gtt., 80.0. Then he gradually applies the same solution as he proceeds. Altogether he uses 10 to 12 c.c. of that solution on one side and 20 c.c. for bilateral operation on the antrum without danger.

Munch of Paris uses regional anesthesia. He injects weak solutions of cocaine into the trunk of the nervus maxillaris superior at the base of the skull, where the nerve leaves the foramen rotundum and enters the fossa pterygomaxillaris. No untoward effects have been reported from injections for antral operations and the reason may be that the majority of these operations are done under general anesthesia, adrenalin being applied on pledgets of cotton only, and only a small percentage under local anesthesia by the injection method.

The next question we have to decide is, should we use local anesthesia for removal of *adenoids?* Ruprecht of Bremen uses a 1 per cent. cocaine-suprarenin spray for both nostrils. Then he applies six to eight cotton-wound probes dipped into a 10 per cent. alypin-suprarenin solution and applies them through the nose to the pharyngeal tonsil. The author is satisfied with this method. Leshure uses a similar method and others as well, but the writer fails to see the necessity or the advisability of local applications in adenectomies of young children. He never uses any.

Of great importance not only in our own specialty, but in medicine generally, is the *removal of tonsils.* Here again regional anesthesia is recommended by Yankauer by means of injection into the trunks of the nervus palatinus medius and posterior. This method has been tried by A. L. Weil of New Orleans, Broeckaert and others, and is being used by some men very satisfactorily.

Most operators, however, use cocaine-adrenalin injections into the crypts and around the tonsil. Others, as Leshure of New York and Laurens of Paris, first paint the tonsils with a "strong" solution of cocaine and then inject 1 to 2 per cent. cocaine, plus adrenalin (1-5000).

Ruprecht injects a 2 per cent. novocaine solution to which he adds 0.1 volume of suprarenin. Other operators use much weaker solutions of cocaine, plus adrenalin. To all of us, however, who have used these methods, it has often been a source of the greatest satisfaction to work in a bloodless field on an organ overrich in blood supply and frequently in an absolutely painless manner. Yet here again danger lurks. For unfortunately not everything is gold that glitters.

Several deaths have been recorded in the literature and perhaps many more have occurred unrecorded. The first case was reported by Dr. Thomas J. Harris of this city, who has had as much experience in removing tonsils as any of us. His report is as follows: "Man, aged thirty, in apparently good health, was given 1/60 of a grain of strychnine sulphate by the mouth. In about an hour 2 drams of 1/5 of 1 per cent. cocaine hydrochlorate solution, containing adrenalin chloride, were injected into the tonsils. This was followed in a few minutes by another injection, in all amounting to about 1/12 of a grain of cocaine and from 8 to 10 minims of a 1 to 1,000 adrenalin solution. Immediately after the second injection he complained of feeling ill, had a slight convulsion and turned ashy pale with profuse perspiration. His head was supported by an assistant and both tonsils were removed with the patient in an upright position. No hemorrhage followed the operation. The appearance of the patient following the operation, which did not require more than two or three minutes, was that of marked prostration and shock. He was therefore placed in the recumbent position, restoratives were administered, and artificial respiration was employed, but without result. Autopsy: Muscle wall of heart normal. Right auricle swollen and full of blood. All important organs of body apparently normal. Thymus enlarged."

We see from this report that the thymus has been found enlarged and the death was apparently attributed to that fact, but it seems to me beyond a doubt that since 8 to 10 minims of adrenalin had been injected, it was that drug that caused the death and nothing else. The 1/12 of a grain of cocaine given naturally helped to reduce the vitality. The presence of an enlarged thymus seems to me nothing but a mere coincidence. Dr. Harris is of the same opinion.

Another fatal case occurring here in New York, which has been described to me, was that of a young child of ten years, who was operated upon in the office of a physician, not a laryngologist, who injected as strong a solution of cocaine as 10 per cent., plus adrenalin, into the tonsils, whereupon the child died within a very few minutes. Of course, this last casualty is a result of gross carelessness and ignorance and can hardly be attributed to a rational application of cocaine or adrenalin. Such accidents can and should be avoided.

But simply alarming is a paper by Dr. Bryan DeF. Sheedy of this city, in which he reports three additional fatal cases all in his own practice.

Just think of it. Such an operation as tonsillectomy caused three deaths in a comparatively short time! Since not everything is clear to me in Dr. Sheedy's report I shall quote verbatim:

Case I.—"Man, aged twenty-five, in good health, except for an indisposition due to a slight attack of tonsillitis. About 1 dram of a solution made up of 1 grain of cocaine hydrochlorate and 1 dram adrenaline chloride 1 to 1,000 solution to 2 ounces of normal salt solution was injected in and around each

tonsil. The patient almost immediately became faint, broke into a profuse perspiration, became very pale; as he complained that he was about to faint he was placed in a reclining position, restoratives applied, and after a few minutes he was put in an upright position and both tonsils removed. No hemorrhage followed the operation. As he seemed to be in a profound shock, he was kept in a room adjoining the operating room for more than an hour. He then started for home and fell in the street about a block away, and before assistance arrived he was dead. Autopsy: Slight extravasation of blood around tonsil region. All important organs apparently normal. No glandular enlargement."

Case II.—"Man, aged forty-four, always enjoyed good health except for an attack of kidney trouble following scarlet fever when a boy. He called on his physician for removal of a large tonsil which had been giving some trouble. About 1 dram of a solution of cocaine hydrochlorate, 1 grain to the ounce, with from 7 to 10 minims of a 1 to 1,000 adrenalin chloride solution, was injected in and around the tonsil. As a part of the solution seemed to escape, in about fifteen minutes the injection was renewed. In less than three minutes' time after the second injection the patient became deathly pale, with no pulse at the wrist, and respiration became slow and labored, but improved slightly under a hypodermic of sulphate of strychnine, 1/30 grain. The head was supported by an assistant and the tonsil enucleated. The patient complained of marked weakness and prostration and was placed on a sofa, but before the surgeon could realize it there was no heart beat. All the ordinary restoratives were applied, but without success. No autopsy."

Case III.—"Young man, aged between twenty-five and thirty, had always enjoyed good health. (Patient had deviated septum with enlargement of faucial tonsils). Primary anesthesia was induced by a mixture of 3 parts of ether and 2 of chloroform. About 15 minims of a 1 to 1,000 adrenalin chloride solution was injected, the amount being divided into three insertions of the hypodermic needle. In half a minute after the last injection the patient's skin blanched as white as skin could, the respirations deepened and slowed down until they finally ceased. In one minute after the patient became deathly pale he was dead. No autopsy."

The last case is such a clear clinical picture of acute adrenalin intoxication that it could be given in a textbook as a classical example of it. Submucous injection of 15 minims of adrenalin; half a minute after the third insertion the skin blanches "as white as skin could," respirations deepen and—death in one minute. That is the type we have seen in the other cases and that we shall see again unless we change our methods. I use for injections a solution consisting of 1/5 of 1 per cent. cocaine, plus adrenalin (1:10,000). Maybe adrenalin could be used stronger, but in the present state of the question I do not feel safe in doing it.

I have enumerated all of these examples to show to the laryngologists, who are mostly concerned in this work, the danger of injecting large and concentrated doses of adrenalin into the tonsils or any other part of the body. I assert that right here in New York City at the Montefiore Home thousands of injections have been made subcutaneously without any fatal accident, but in all these cases adrenalin has been tried gradually, the dose being increased slowly. But in our practice it has proven to be dangerous, as conditions are different.

For that reason, perhaps, experiments have been made with another drug, a double salt, namely, *quinine and urea hydrochloride*. As this drug has been tried almost exclusively on the tonsils, I take the liberty of bringing it in at this place. Hertzler, Brewster, Rogers, S. Solis Cohen, Herzig, Sheedy and others have experimented with this drug. Fletcher Ingals claims that after an application of a 20 per cent. solution of the drug it took four times as long to produce anesthesia as with a 20 per cent. cocaine-suprarenalin solution. He recommends a 15 per cent. solution of urea-quinine combined with 5 per cent. cocaine in a solution of 1 to 2000 of suprarenalin. This solution he claims brought about anesthesia quicker than a 20 per cent. cocaine-suprarenalin solution and the anesthesia was more prolonged. J. Solis Cohen used it for the larynx and found it as good as cocaine. J. Gordon Wilson warns against its use. J. R. Winslow uses a 3 to 5 per cent. solution without adrenalin for injection into the tonsils. He has seen edema following its use after tonsillectomies, but no bad effects. B. R. Shurly, on the other hand, used it for the removal of tonsils, and frequently found a remarkable blue line following the line of injection. There was a considerable amount of swelling afterward. After using it in a few cases and hearing a report from the interior of his State that one of his colleagues had been sitting up all night attempting to control edema of the glottis following the use of a strong solution, he discontinued its use.

Chavanne states that it has not proven of great anesthetizing value, but he applies it in cases where for some reason or other he cannot use cocaine. And this for the present summarizes its use. At any rate, further experiments with quinine and its allied salts and urea should prove very interesting.

We come now to the *larynx*. Here I should like to draw attention again to the fact that small quantities of adrenalin added to cocaine or novocaine increase greatly the anesthetic power, and by remembering this fact we may save an unpleasant occurrence in laryngeal cases where we often have to use 20 per cent. solutions.

Very important was the discovery of anesthetics of long duration, especially orthoform, anesthesin and propesin. These drugs have proven to be of the greatest value when applied to ulcerations of the larynx, pharynx, and other parts of the upper air tract. But we again warn against the use of orthoform on the skin, as it is apt to produce an eczema that may spread all over the body. But for ulcerations on the mucosa it is an excellent remedy.

Spiess of Frankfort-on-Main says that in every case of inflammation the existing pain leads by reflex action to the formation of an exudate, etc., and that by removing the pain all other symptoms of inflammation are removed. I have been able to verify this statement frequently by applying any of the orthoform preparations to tuberculous ulcerations in the larynx which got well by the mere action of the drug removing the pain. For the use of the patient at home Hoffmann of Munich recommended a tube, one end of which the patient passes far into his mouth. Into the other end one of these preparations is put, and when the patient takes a deep inspiration it gets into the larynx. For the same purpose Yankauer recommended his syringe to be used by the patient himself in connection with the writer's orthoform emulsion. It is being used largely by many patients.

Other remedies for removal of pain in the larynx

are: (1) Bier's method of hyperemia modified by Dr. Polyak of Budapest. I personally have not seen any beneficial result from this method; (2) injections of alcohol into the superior laryngeal nerve, also recommended by Hoffmann. Quite a number of writers have experimented with that and have recommended it as an analgesic to be used in painful ulceration of the larynx. The writer has tried it many times. He found the injections somewhat painful, but without any danger and the analgesia lasts five days and more.

In conclusion I should like to repeat again that we have learned to be on our guard against toxic effects of cocaine and its derivatives. The statistics given today may help to warn laryngologists when they use that wonderful remedy, without which we could hardly exist, namely, adrenalin. I should like to close with the words of Nogué: "Nous pouvons donc écrire que l'adrénaline est un médicament qu'on doit administrer avec prudence dans tous les cas"—that is, that we have to use adrenalin with great care in all cases and I may add: especially when we make injections into the submucous tissues of the head.

1003 Madison Avenue.

THE MENTAL HYGIENE MOVEMENT.*

By WILLIAM L. RUSSELL, M.D.,

WHITE PLAINS, N. Y.

MEDICAL SUPERINTENDENT, BLOOMINGDALE HOSPITAL.

The Mental Hygiene Movement is an attempt to bring about broader social organization for dealing with disorders of the mind. Thus far the interest of society in these disorders relates almost entirely to providing institutional care for the grosser forms, and to the relation of mental disease to responsibility for crime. Little organized effort is made to deal with the less obvious though frequently the more dangerous types, or with the earlier stages of even curable cases, or to apply to the problem of prevention the known facts relating to causation. A broader and more efficient organization seems now to be possible. The remarkably rapid increase of the number of cases under institutional care, quite out of proportion to the increase in the general population, and the enormous appropriations required from State legislatures in providing for them, furnish a practical illustration and argument which have gone far to arouse in even the densest of the taxpayers some concern in regard to the possibilities of cure and prevention. The information concerning disorders of the mind, and the relation of mental states to various forms of ill health and their cure, which has, in varying degrees of accuracy and clearness, been spread abroad, has also helped to prepare the public to regard favorably attempts at greater efficiency in the organized methods. There is also available an increasing mass of scientific knowledge which may be applied to bringing these about.

In Europe the movement has not yet assumed as definite form as in this country, though various agencies are at work to accomplish the same objects. There is an International Committee, which was organized with a view to systematic effort, but it has not yet been in a position to begin active work. In this country the movement has with characteristic rapidity, advanced to the point of definite organization and there are already four principal centers of activity: Three of these are State organizations; the fourth is the National Committee for Mental Hygiene. This committee was formed in 1907, principally through the efforts of Mr. Clifford W. Beers of New Haven, and Dr. Meyer. There are 63 members, 23 of whom are physicians, several of them being members of this society. The announced objects of the committee are: (1) to work for the protection of the mental health of the public; (2) to help raise the standard of care of those threatened with mental disorder, or actually ill; (3) to promote the study of mental disorders in all their forms and relations, and to disseminate knowledge concerning their causes, treatment, and prevention; (4) to obtain from every source reliable data regarding conditions and methods of dealing with mental disorders; (5) to enlist the aid of the Federal Government so far as may seem desirable; (6) to coordinate the existing agencies and help organize in each State in the Union an allied but independent Society for Mental Hygiene.

Until quite recently active work has been limited by lack of means. These have now been provided, however, and plans for practical work must be made and carried out. The field is so wide, and the problems which must be dealt with are so complex, that it seems advisable to plan on broad lines with a view to stimulating and guiding, rather than actually undertaking to bring about specific practical improvements in local or State conditions or methods. The work will come under two divisions corresponding to the two main objects aimed at. One class of work will be for the purpose of bringing about improvements in the prevailing provision and methods for the care and treatment of the insane and other types of mental disorders. The other will have reference to prevention. For various reasons the first task that will be undertaken will have special reference to improvements in the present methods of dealing with mental disorders. Among these reasons may be mentioned that the funds available were given explicitly for the purpose of applying them to the amelioration of the condition of the insane. The other work of the committee can, however, and no doubt will, be carried on as ways and means are provided.

As a first step to bringing about improvements, a sub-committee of the National Committee has been appointed to make a study of the conditions in several States. This sub-committee has engaged an experienced physician and the work will be commenced at once. The study is not undertaken simply with a view to statistics or publicity, but is intended as a preliminary to constructive work in forming State and local organizations which, under the advice and guidance of the National Committee, may be led to take up the task of bringing about needed improvements.

Considerable time and labor have been spent by members of the committee, especially Dr. Hoch and Dr. Mabon, in formulating plans for the study of the conditions in certain States. The field is, however, too wide and the problem too complex to permit of more than a general working outline being followed. The work must be developed step by step as the way opens, though the main object aimed at must be clear and everything undertaken must contribute to its accomplishment; otherwise in such a wide field, and with the kind of material which must be worked with, it would be very easy to scatter our resources and to waste our energies in fruitless, and even in harmful, ways.

*Read at a meeting of the New York Psychiatrical Society, March 6, 1912.

The work which will be taken up at once includes: The preparation of summaries of the laws relating to insanity in every State; investigation of the provision for institutional care and treatment, and the methods and standards of administration in several States; also of the organized methods of dealing with cases of mental disorder which are not in institutions, and of the way in which mental disorders in delinquents are dealt with. The provision for instruction in psychiatry in the medical schools, and the attention which is given to the proper management of abnormal children in the public schools will also be ascertained. The facts will be obtained by inquiry and by observation by competent persons, and will be carefully studied with a view of turning them to account, in the most judicious and effective ways possible, towards bringing about organized State and local efforts to improve conditions. The investigations and studies planned will also furnish a foundation of facts relating to the whole situation in regard to mental disorders, which should be of great value in the further work of the committee.

Opinions will, no doubt, differ as to the value of the plan of work outlined, depending on the point of view and the relative importance which one or another may attach to the various activities in which a National Committee for Mental Hygiene may properly engage. And, in such a broad work there is sure to be differences of opinion. It may be said, however, that ever since the National Committee was organized all the plans of work proposed, of which I have knowledge, included among the first tasks to be undertaken, the collection of reliable information relating to the present conditions and methods in the care of the insane.

The State organizations which have been formed are the Mental Hygiene Committee of the New York Charities Aid Association; the Connecticut Society for Mental Hygiene and the Illinois Committee for Mental Hygiene. The New York Committee is a development in the work for the better care of the insane in which the State Charities Aid Association has been engaged for many years. In 1906 an After-Care Committee was formed to assist patients who had been discharged from the State hospitals. Later this committee broadened its activities so as to include work for the prevention of mental disease, and the title was changed to "The Committee on Prevention and After-Cure." In 1910 the title was again changed to the present one and a paid assistant secretary of the association was assigned to the work, and broader activities were undertaken.

The work is being developed along four lines: (1) Spreading abroad information relating to the more clearly understood causes of insanity. (2) Promoting the establishment of outpatient departments, psychiatric wards and departments in general hospitals, and psychiatric or observation hospitals with a view to better treatment of the early stages of mental disease. (3) Assisting individual cases who need advice and direction in obtaining proper treatment. (4) Promoting desirable legislation. Over 400,000 copies of pamphlets and circular letters have been distributed during the past year, and over twenty lay audiences have been addressed on the subject of the better management and prevention of mental disorders by the assistant secretary and by psychiatrists who are interested in the work.

At a recent meeting of the committee it was decided to appoint a social worker and to open a bureau of information to which applicants might be directed by charity workers and others. The experience of the past year has shown the need of these features. The sub-committee was appointed to take up the question of better provision for dealing with abnormal children in the public schools.

The Connecticut Society has about 600 members and employs a social worker who is engaged principally in furnishing advice and assistance to mental cases who are at large, or to patients who have been discharged from the State hospitals. The Illinois Committee employs four social workers and the work is like that in Connecticut. This committee is also working for the better provision for mental cases under observation with reference to the need of commitment.

To bring about greater efficiency in the organized methods of dealing with cases of mental disease is to take a step towards greater intelligence in the management of the whole problem, and should not be looked upon as something quite apart from work for prevention. The lines of direct approach in a campaign for the prevention of insanity are not very clearly defined. The problem is so complex that an attempt to deal with it directly seems almost like undertaking an attack on the causes of disease and misery in general. The methods employed must be principally educational in character. The few fairly definite issues, such as the relation of general paralysis to previous syphilis and of alcohol to certain psychoses, cannot be dealt with as directly and as simply as the acute infectious diseases or tuberculosis. What the mental hygiene organizations can do in regard to these is to disseminate information where it will do most good. The arguments employed in the efforts which are being made for venereal prophylaxis and for intelligent dealing with the alcohol problem will be strengthened if they include what is known concerning the relation of syphilis and alcohol to insanity.

A more special, and probably not an unpromising, field for mental hygiene may be found in applying what has been learned regarding the mechanism of the development of certain types of psychoses, and regarding the types of individuals in whom abnormal reactions are likely to occur, to bringing about better management in the training of children. The observations made in regard to heredity and the laws of its operation, may also furnish helpful data which can be employed in a campaign of education and may possibly be used also more directly in promoting effective action for the welfare of future generations.

The facts concerning the relations of immigration to the prevalence of insanity in this country may also be used in an effort to improve the methods employed for keeping out the unfit. Altogether there seems to be a considerable body of facts and information which can be used to good purpose by the organizations which have taken up work for the prevention of insanity and for more efficient methods in dealing with mental disease in individuals. The more intelligent public is already interested and ready for better organization and system in dealing with the problems at issue. If this interest is to be directed along sound and profitable lines the members of the medical profession, and more especially the psychiatrists, will have to take a hand in leading and informing.

THE LARGE INCISION AND THE REASON FOR IT.

By PERCY A. PERKINS, M.D.,

MEMPHIS, TENN.

ASSISTANT TO CHAIR OF SURGERY, UNIV. OF TENN.; ATTENDING SURGEON BAPTIST MEMORIAL HOSPITAL; ASSISTANT ATTENDING SURGEON, LUCY BRINKLEY HOSPITAL.

MUCH has been said and written recently advocating the large or roomy incision in abdominal work, but few have gone into details enough or given reasons why they prefer the large incision. So it shall be my object in this paper to present a few good reasons, collected from my own experience and the clinics of others, why the roomy incision should be the choice in the big majority of cases over the small one. Of course we can understand from an esthetic standpoint why the small incision should be very gratifying to the patient, but I do not think it should always suggest skill on the part of the operator.

1. With the large incision one can examine everything in the peritoneal cavity and also do better work and with greater speed. Often mistakes are made in diagnosis. I heard one of the leading surgeons of the country make the statement a few months ago that from 10 to 15 per cent. of the "exact diagnosis" were wrong. Now, granted that the average surgeon's percentage of error is at least 15 per cent., is not that reason enough in itself to justify a large incision?

Probably the mistake of making a small incision is more often made in doing appendectomies than any one thing. Now, how often do these cases come back (and not always to the same surgeon) complaining, and the surgeon wonders why the patient is still having trouble. The answer is this: he either made a mistake in his diagnosis or there was other additional trouble or pathology present which he did not find at the time. It is not always an easy matter to make a differential diagnosis between an appendix (chronic), gall-bladder, or stomach trouble. Often a diseased condition in one will give symptoms in the other. This appears logical enough, when we look at it from an embryological standpoint, as we know that the stomach, gall-bladder, and appendix are all derived from the same groove or primitive alimentary tract and so, of course, are all more or less in direct sympathy with one another. I have often seen cases in which an operation was done for an appendicitis, and after a practically normal appendix had been removed and a further examination had been made, gallstones were found. And again I have seen appendix trouble mistaken for a gastric or duodenal ulcer, salpingitis, etc., and *vice versa*. McCarthy in an examination of 2,000 appendices found 8.7 per cent. associated with cholecystitis. Also 52 per cent. of 175 cases of cholecystitis with and without stones, gave histories of pain in the region of the appendix.

Out of 1,244 women operated on by the Mayo brothers for uterine myomota, 7.1 per cent. had gallstones. Statistics also show that 25 per cent. of all women over 60 years of age have gallstones. In 5 per cent. of autopsies gallstones are found, and in adults alone 10 per cent.

Another condition that is not uncommonly found is a Lane's kink. This condition is usually found in the ileum, although not always. As a rule one sees the ileum rotated on its long axis and fixed upon the mesentery in such a way as to lessen its lumen. This condition may be inflammatory or congenital in origin and is often the cause of chronic constipation, etc. Now, it can be readily seen that it would be impossible to find and correct these conditions if one were working through a small incision, and yet if they exist and have not been corrected, injustice has been done the patient, for he has not been cured and in all probability will be subjected to a second operation.

2. Another mistake, and probably the most important of all, is in removing ovarian cysts through small incisions. In olden days the operator took great pride in removing these cysts, no matter what size, through very small openings; first tapping the tumor and then drawing off all the fluid and pulling the collapsed affair through the tiny opening.

We know now that this is a very dangerous procedure. Statistics show that 16⅔ per cent. of these cysts are malignant. So one can readily see the danger of opening these tumors before removing, because it is practically impossible to keep the fluid from escaping back into the peritoneal cavity or contaminating the edges of the incision through the abdominal wall. If this does happen, we are sure to get a recurrence (implantation, carcinoma, or sarcoma). Now, there is only one way to avoid this and that is to remove the tumor *en masse*, even if it is necessary to extend the incision from ensiform to symphysis pubis. Of course, in certain "selected" cases, especially in young women, a surgeon might be justified in operating through a small incision.

The most common reasons given against the large incision are: (1) Prolonged recovery; (2) liability of hernia.

The answer to the first is that, with the present day aseptic technique and a proper care in closure of the wound, the patient should be up in 14 days.

In answer to the second it may be said that hernias are very rare; in fact the best men say that they never see one following a clean case. It is not necessary for the patient to wear an abdominal binder or supporter after getting up.

Now, the reasons why the large incision should be used are:

1. Safety.
2. Speed.
3. Surety (of diagnosis).
4. Success.

1112 MEMPHIS TRUST BUILDING.

May, 1912.

Postinfluenzal Paralysis of the Soft Palate.—A. Wylie reports the case of a male, aged 30, who had always been a healthy man. In the second week of December he was laid up for ten days with an influenzal cold, congested throat, and fever. He returned to work before Christmas time, feeling weak, but otherwise well. A few days later fluids regurgitated through his nose; solids he could swallow quite easily. By January 7 his speech became nasal or cleft palate in character and he found that he had to hold his nose in order to make himself heard. No specific history. No diphtheritic symptoms and, although a culture had been taken, no Klebs-Loeffler bacilli had been diagnosed. On examination a bilateral paralysis of the soft palate was seen; sensibility was to a slight degree diminished. Except for a congestion and enlargement of the posterior end of the right inferior turbinal the nasopharynx appeared normal. The movements of the tongue, larynx and sternomastoid muscle were normal. Tonics of iron and strychnine improved the condition. The author considers it a case of postinfluenzal neuritis simulating the condition more commonly found as a sequela of diphtheria. —*Proceedings of the Royal Society of Medicine.*

MEDICAL RECORD.

A Weekly Journal of Medicine and Surgery.

THOMAS L. STEDMAN, A.M., M.D., EDITOR.

PUBLISHERS

WM. WOOD & CO., 51 FIFTH AVENUE.

See fourth page following reading matter for Rates of Subscription and Information for Contributors and Subscribers.

New York, July 20, 1912.

THE MENACE OF POLIOMYELITIS.

For the past five years the increasing prevalence of poliomyelitis during the months of July, August, and September directs attention to the probability of the recrudescence of this disease during the present summer. One of the most significant and ominous facts about poliomyelitis has been its extraordinary increase and wide diffusion in the United States, to an extent far greater than in any other part of the world. From 1881 to 1900 there were reported in this country 200 cases of the epidemic form of the disease; from 1900 to 1904 there were reported 100 cases; from 1905 to 1909, the number of cases rose to 5,400; and in the single year 1910, the appalling figure of 9,000 represented the newer victims of this insidious scourge. The wide diffusion of the latter was shown in its presence in 43 States of the Union during the last-mentioned year. The rapid evolution of poliomyelitis presents a sharp contrast to the growth of this disease in Europe, in which at no time have there been reported more than 2,000 cases in one year, as in the Swedish epidemic of 1905. The phenomenal spread of poliomyelitis demands now more than ever the most energetic action on the part of public health authorities in enforcing the necessary quarantine and in studying the laws governing the diffusion of this disease. As a model of this work may be mentioned the investigation conducted by the Massachusetts State Board of Health* as to the prevalence of poliomyelitis in that State during 1910, and as to its etiology and mode of transmission. The report of this investigation includes a careful epidemiological survey of the cities of Fall River and Springfield, which were marked epidemic centers.

One of the most important parts of this report is the analysis of poliomyelitis with special reference to its occurrence in Massachusetts from 1907 to 1910, by R. W. Lovett and M. W. Richardson. The incidence of the cases indicates an apparent two-year periodicity, which corresponds to a similar behavior in other parts of the world. Small towns and cities seem to be the ones most affected by the disease, which attacks, however, all classes, rich and poor, in the cities and in the country, in tenements and in detached houses. There is no longer any doubt as to the transmissibility, which may be by direct contact with the sick individual, through the intermediation of the healthy human carrier, or by means of dust, fomites, insect parasites, or domestic animals. The relative transmissibility of poliomyelitis, when compared with other infectious diseases in the same territory, was investigated by Hill in the State of Minnesota. This observer found that of persons known to have been exposed to various infections the percentage contracting the disease was as follows: scarlet fever, 22; diphtheria, 17; infantile paralysis, 6. Where one case existed in a family other cases were found in the same family to the following extent: scarlet fever, 40 per cent.; typhoid fever, 30 per cent.; diphtheria, 29 per cent., and poliomyelitis, 17 per cent. These figures indicate that the danger of contagion, while less than in the case of the other infectious diseases, is nevertheless a real one, and demands, as in the latter, the institution of an efficient quarantine. The undoubted existence of abortive cases, *i. e.* those in which paralysis does not supervene, renders impossible the determination of the exact degree of communicability of this disease.

The most important advance that has been made in the recent study of poliomyelitis, apart from its experimental production in monkeys, has been the demonstration that these abortive types can be recognized clinically, and that even the ordinary cases can be diagnosed during the preparalytic stage. Forming a fitting complement to the epidemiological and experimental studies of this disease, the clinical study now occupies the center of the stage. Exceptional opportunities for this study presented themselves during the summer of 1911 at the Hospital of the Rockefeller Institute at which seventy-one cases were under close observation, in addition to ninety cases that were treated in the dispensary. The interesting results of this study are set forth in an elaborate monograph by F. W. Peabody, G. Draper, and A. R. Dochez.* One of the first points attacked was that of the efficacy of the "neutralization test," which is based upon the discovery by Levaditi and Landsteiner, Römer and Joseph, and Flexner and Lewis that the serum of recovered monkeys is able to protect normal animals against fatal doses of the virus; and the further discovery by Netter and Levaditi, Flexner and Lewis, and Anderson and Frost that the serum of recovered human cases possesses the same protective property. The investigators of the Hospital of the Rockefeller Institute employed this test in the case of normal, suspected, and poliomyelitic sera. The results showed that the test could not be considered to give specific evidence as to whether a given individual has or has not suffered from a previous attack of poliomyelitis. In typical instances of poliomyelitis the serum of the infected individual probably always contains, after a certain interval, protective bodies. In spite

*"Infantile Paralysis in Massachusetts during 1910, together with reports of special investigations made in 1911 bearing upon the etiology of the disease and the method of its transmission." Reprinted from the Monthly Bulletins of the Massachusetts State Board of Health for 1911. Boston: 1912.

*"A Clinical Study of Acute Poliomyelitis," by Francis W. Peabody, M.D., George Draper, M.D., and A. R. Dochez, M. D. "Monographs of the Rockefeller Institute for Medical Research," No. 4.

of the irregular results obtained with normal sera, the specificity of the test cannot as yet be ruled out. In the case of an apparently normal person whose serum protects, the possibility is suggested that he may have suffered from an unrecognized abortive attack of the disease.

Peabody, Draper, and Dochez suggest a new and simpler classification of poliomyelitis. The generally accepted classification is that of Wickman, who recognizes the following eight forms: the spinal form, the form resembling Landry's paralysis, the bulbar or pontine form, the encephalitic form, the ataxic form, the neuritic form, the meningeal form, and the abortive cases. It is pointed out that this classification is based neither on pathological anatomy nor on clinical symptomatology, but on a mixture of the two; the spinal, bulbar, and encephalitic forms being anatomical forms, while the neuritic, the meningeal, and the ataxic forms are essentially symptomatic forms. The authors would substitute for this classification one in which three groups of cases are recognized: the first consists of the abortive cases, in which paralysis does not occur; the second is the cerebral group, containing the rare cases with involvement of the upper motor neurons and a resulting spastic paralysis as the chief manifestation; the third or bulbospinal group is the largest and includes all the cases in which lesions are present in the lower motor neurons and in which flaccid paralysis occurs.

The fact is emphasized that poliomyelitis is not synonymous with paralysis, and that the rôle played by this secondary symptom in the clinical history of the disease is becoming relatively less important. This conception is based upon the modern knowledge that poliomyelitis is a general infectious disease, in which the entire organism is affected, although in most instances, as far as we are at present aware, paralysis is the most prominent manifestation. At any rate the recognition of abortive cases is strengthened by this conception. Wickman believed that the abortive cases represented from 25 to 56 per cent. of the total incidence of the disease, while Müller has regarded the unparalyzed cases as even outnumbering the paralyzed ones.

The recognition of the abortive cases is a matter of eminent practical importance from the viewpoint of maintaining an efficient prophylaxis. Wickman classified these cases into those which run the course of a general infection, those in which meningeal irritation is especially marked, those in which pain is a pronounced symptom, and those with gastrointestinal irritation. A few of the abortive cases have been studied at the Hospital of the Rockefeller Institute. These show some degree of transient muscular weakness, which in two instances was most pronounced about the pelvis. Irritability and drowsiness are frequently present. Pain is a very common symptom and may be muscular or neuritic, often in the neck or back, or in the form of headache. The abortive cases closely resemble influenza. Blood and spinal fluid may show characteristic changes. Such cases occurring during the summer, and particularly if there are cases of poliomyelitis in the neighborhood, should be regarded with suspicion and quarantined.

As regards the blood changes in this disease, the authors have noted a constant and marked leucocytosis with an increase of polymorphonuclears of 10 to 15 per cent. and diminution of lymphocytes of 15 to 20 per cent. Examination of the cerebrospinal fluid reveals the following changes: During the early days of the disease and before the onset of paralysis, there is an increased cell count with a low or normal globulin content. During this stage the polymorphonuclear cells may amount to 90 per cent. of the total, but most fluids show almost exclusively lymphocytes and large mononuclear cells. After the first two weeks the cell count usually drops to normal or nearly so, and there is frequently an increase in the globulin content. The spinal fluid reduces Fehling's solution. These changes while not specific are of considerable value as an aid to diagnosis in the preparalytic stage and in abortive cases.

Of eminent importance to the general practitioner is the ability to recognize poliomyelitis during the prodromal stage, for it is only during this stage that the institution of proper measures may serve to arrest the progress and prevent some of the dire consequences of the disease. While the symptoms preceding the onset of paralysis are generally not different from those found in other infectious diseases, there are certain specific symptoms that should put one on guard. Müller, who studied the epidemic in Hesse-Nassau, found that the majority of cases had symptoms referable to the respiratory tract, and that profuse sweating was one of the cardinal symptoms of the early stage of the disease. Peabody, Draper, and Dochez could not confirm this observation except to the extent that sweating is a common accompaniment of fever in children. They emphasize, however, the importance of drowsiness which is associated with the fever. Frequently irritability replaces the drowsiness, and is closely related to the hyperesthesia which Müller regards as one of the three cardinal symptoms of the prodromal period. Pain, both spontaneous and that produced by passive motion, is also a prominent symptom of this stage. Muscular weakness is frequently observed. Muscular twitchings and tremors were present in several of the authors' cases. Respiratory symptoms were found in a few of these cases, but not to the extent of 50 per cent. as reported in the Hesse-Nassau epidemic. Gastric symptoms, such as anorexia and nausea, were very frequently observed. Of all the prodromal symptoms hyperesthesia was the most characteristic.

The Rockefeller Institute report represents one of the most valuable recent studies of the clinical manifestations of poliomyelitis, and merits careful study by all practitioners who will unfortunately be called upon more and more during coming years to cope with this grim enemy of early childhood.

THE MARINE HOSPITAL SERVICE SALARIES.

In the MEDICAL RECORD of March 23, 1912, attention was drawn to Senate Bill No. 2117, known as the Personnel Bill, designed to equalize the salaries of the Public Health and Marine Hospital Service with those of the army and navy medical corps.

The merits of this bill were pointed out and its passage by the House of Representatives was strongly urged. In 1889 substantial advances were made in the salaries of the commissioned officers of the army, navy, and revenue cutter service. The officers of the Public Health and Marine Hospital Service constituting only 1.5 per cent. of all the commissioned officers of the United States alone received no advance.

The essential features of the present personnel bill were included in a bill (S. 6101) passed by the Senate in the first session of the 60th Congress, but it failed in the House. In the third session of the 61st Congress a similar measure (H. R. 30,292) passed the House, but died in the Senate. In the same session the Senate adopted an amendment to the Sundry Civil Bill, containing the same features and salary advances, but it was stricken out in conference. Thus the Senate and House have both passed favorably upon the provisions of this measure, but at different times, and the Public Health Service has been buffeted back and forth, and suffered a great injustice.

Physicians least of all need any argument to prove that the Public Health and Marine Hospital Service abundantly deserves hearty support and intelligent cooperation from the public, and especially from Congress. It operates all quarantine stations with few exceptions, and should operate all, and is our chief bulwark against plague, cholera, and yellow fever. In the yellow fever epidemic in New Orleans in 1905, the service saved the nation over a hundred million dollars, as compared with the similar condition in 1878, when the Mississippi Valley sustained a loss of more than a hundred millions from yellow fever. The salaries of the service officers to date since the reorganization of 1870 have totaled under $8,000,000. The expenditure of several millions for a single new battleship is an extravagant and problematic advantage compared to the appropriation of $100,000 to increase the efficiency of the only national defence we have against epidemic disease and the only national agency concerned primarily with improving public health and sanitation in this country. It is scarcely necessary to mention the 23 marine hospitals and 120 other relief stations maintained by the service for the benefit of American seamen. The Hygienic Laboratory at Washington has made great advances in our knowledge of epidemic diseases and in the solution of numerous hygienic problems. The demonstration of the identity of Brill's disease and typhus fever, and the experimental transmission of measles to monkeys are very recent contributions from this laboratory. The service has given the Philippines the best health protection they ever had. The medical examination of all immigrants is likewise conducted by officers of this service.

The report of the Committee on Public Health and National Quarantine to the Senate when that body passed the Personnel Bill stated that the present salaries were believed inadequate to preserve the efficiency of the service or to attract desirable men to it as vacancies occurred. Especially is this true because of the greater inducements offered in the army and navy medical corps, for service no more responsible or onerous, and scarcely so hazardous.

The Personnel Bill in no way affects any other public health legislation, nor does it in the remotest degree have any bearing on the creation of a national department of health. It simply does tardy justice to the officers of the Public Health Service in the matter of a salary commensurate with the importance and dignity of the duties they perform and the responsibilities they assume. The bill as it passed the Senate has been reported favorably to the House by the Committee on Interstate and Foreign Commerce. A few weeks ago it was brought up in the House on the "unanimous consent" calendar, but objection to its passage was made by Mr. Mann. Now as Congress draws nearer to adjournment, there is danger that the bill will not be passed, in spite of the fact that a majority of the congressmen undoubtedly favor its passage. For the continued efficiency of the Public Health Service it is imperative that the House of Representatives pass this bill. Every consideration of justice and national honor, as well as of regard for public health and hygiene, urges that it be passed. Politics must no longer stand in the way. The Personnel Bill should be adopted by the House before the adjournment of Congress.

THE YOUNG AND SEXUAL HYGIENE.

The question of the necessity for education of the young in sexual hygiene has absolutely forced itself upon the attention of the community. For years it has been well known that there was crying need for such education, but owing to the prudery, inbred and instinctive, of the so-called Anglo-Saxon race, the matter has been blinked at and shelved. Of recent years, however, a new spirit appears to be animating the English speaking peoples in this respect, and now it is generally allowed that it is strongly advisable to instruct the young in sexual hygiene, and that the subject should no longer be taboo. Also, it is to be noted, even the conservative British physicians are taking up the matter and arguing that the time is ripe for theories in this direction to be put into practice. Dr. Eric Pritchard writes in the *Medical Press and Circular*, June 5, 1912, in favor of the instruction of the young in sexual hygiene. He points out that the reason why children should be taught sexual morality is connected partly with their own individual interests, and partly with the wider interests of race preservation. For the child's own sake it is desirable that it should have an intelligent comprehension of the physiological processes of life, including that of reproduction, in order that at the time of puberty it may understand the significance of those radical changes which herald its physico-sexual maturity. Such knowledge is necessary in order that the psychological shock of a too rude awakening may be avoided at this crisis in the child's life, and in order that it may be armed at a somewhat later period against the consequences of venereal diseases, and of physical and moral corruption.

With regard to a most important point, that of the best time to begin sexual instruction, Pritchard thinks that it would be advisable to confine our energies to the instruction of children who are about to leave school and are going out into the world with all its dangers and temptations. Possibly Brit-

ish children leave school at an earlier age than they do in this country, or else they must be much more innocent than American children. Here, it is safe to say, school children who do not know the broad facts of sex life and reproduction long before their school life is ended are few indeed, and Pritchard would be too late with his instruction; he would find the field already grown up in weeds with little room for the seeds of morality he might sow to take root. We do not mean to say all children of this age are corrupt—indeed, few are, but if those few are to be saved by knowledge their instruction must be begun at an early age; the end of school life is too late. More emphatic is his opinion that it is of equal importance that teachers and parents should likewise be taught many of the strange manifestations of the sexual instinct of which at the present time they are in complete ignorance. They do not know what to expect, what to anticipate, or how to recognize the symptoms when they appear, and are consequently ill-adapted to train the children under their direction. In conclusion, Pritchard suggests that we should all make an effort to face the difficulties of the situation and free ourselves of that shamed-faced self-consciousness which has in the past enveiled the whole question with an atmosphere of unnatural and artificial indecency—indecency which does not exist except in the imagination. Teachers, parents, and physicians should divest themselves of this false conception and attempt to arrive at some satisfactory solution of the problem.

The Role of Bulbar Compression in the Production of Syringomyelia.

That the phenomena of excavation of the gray matter of the spinal cord may result from a slowly developing neoplasm pressing upon the cord is clearly demonstrated in a case reported by J. Lhermitte and P. Boveri in *La Riforma Medica,* June 8, 1912. The clinical history was as follows: A man thirty-four years of age began to develop at the age of thirty a progressive paresis of the lower limbs, an atrophy of the right side of the tongue, and a slight atrophy of the thenar and hypothenar eminences. Sensation was not affected, the reflexes of the lower limbs were greatly exaggerated, and Babinsky's sign was positive on both sides. The pulse was normal, but cyanosis of the face and a slight dyspnea were present. Death occurred suddenly as the result of respiratory failure. Autopsy revealed an exostosis that had developed from the basilar process of the occipital bone, and that had pressed deeply into the posteromedian portion of the medulla oblongata. This pressure had resulted in the formation of a spinal cavity which had extended as far down as the level of the third cervical vertebra. The mechanism of the production of this form of slowly developing syringomyela was studied experimentally in the dog. It was found that the introduction, following laminectomy, of a bit of laminaria at the level of the seventh dorsal segment caused an excavation of the spinal gray matter similar to that observed in the case reported. The authors conclude that compression of the median and dorsal portion of the medulla may result in the production of a myelomalacia limited to the central and posterior portions of the gray matter, and accompanied by the elimination of the necrotic products.

Preserved Human Milk.

In this country the wet nurse is not a widely recognized institution in child conservation, nor perhaps is she likely to be such. Hence the problem of preserving her milk may strike American readers as somewhat novel. But in various European lands where she has always been regarded as a vital necessity, and where domestic economy is much more exploited than in wasteful America, it is not strange that there should always have been some effort, even if sporadic and episodical, to economize in breast milk, as in any other essential commodity. This subject was debated at a very recent session of the Verein für innere Medizin und Kinderheilkunde, Berlin (*Berliner klinische Wochenschrift,* June 17). It would appear that the prevalent custom in foundling asylums and maternities has simply been to place the excess of breast milk, as obtained by the breast pump, upon ice. Dr. Peiser, the reader of the paper, called attention to the fact that in institutions a superabundance of breast milk may alternate with a famine in the same. He advocated the addition to the milk of a few drops of hydrogen peroxide, the idea having been borrowed from the Budde method used for the conservation of cow's milk. In reply to the objection that simple conservation in the icebox would answer all requirements, Dr. Peiser says breast milk may be kept for six days with ice alone, but with the addition of the chemical preservative it will keep considerably longer.

News of the Week.

School Hygiene Bureau.—A delegation of physicians headed by Dr. James A. Miller appeared before the Committee on Elementary Schools of the New York Board of Education on July 9, and asked that the Board establish a Bureau of Hygiene. Dr. Miller, who is secretary of the Committee on Public Health of the Academy of Medicine, stated that the committee had found that the supervision of matters pertaining to the sanitary condition of the schools and the health of the children was divided between the committees on buildings, on the care of buildings and on supplies, and the city superintendent, and that it was their belief that there should be a direct localization of responsibility. He therefore advocated a bureau of hygiene with a physician at its head. Although ably supported in his arguments by the other members of the delegation, Dr. Miller's suggestions did not appear to meet with the approval of the committee, which considered that the establishment of such a bureau was unnecessary. The committee and the physicians did agree, however, that there should be a larger force of physicians for the examination of defective children and the committee declared its intention of asking for the appointment of at least six in addition to the present corps.

New Volunteer Hospital.—A site on the corner of Beekman and Water streets, New York, has been purchased for the erection of a new home for the Volunteer Hospital which for some time has been very much cramped in its old quarters on Gold street. The new building will be five stories high, and will have a roof garden. It is expected that it will be ready for occupancy on January 1, 1913.

Goldfish vs. Mosquito.—Acting on the theory that minnows destroy the larvæ of mosquitos the Illinois Central Railroad has announced its intention of stocking every stagnant pool on its lines with

goldfish, the only minnow which can live in stagnant water. It is hoped that in a short time the mosquitos will have been entirely eradicated by the hardy minnows. The railroad has asked the cooperation of the various State hatcheries along its lines and of the Federal hatcheries, but if this is not given it will establish its own hatcheries and stock the pools itself.

Experiment in Municipal Ownership.—The City of St. Louis will shortly undertake an experiment of interest to laboratory workers when it will establish on the grounds of the City Infirmary a farm for raising guinea-pigs and rabbits for the use of the various medical institutions of the city. It is believed that the cost of raising the animals will be less than the cost of purchasing them and that a more plentiful and satisfactory supply will be available than under the present conditions of dependence upon dealers.

Kunitzer Injunction Ended.—Justice Gerard of New York recently denied the application of Dr. Robert Kunitzer for a permanent injunction restraining the New York County Medical Society from taking a second vote on the charges brought against him, and on which the Society some time ago ordered his expulsion. Justice Gérard had had the application before him since May 29, when he heard the argument of counsel. This leaves the Society free for the present to act on the charges, but it is thought that Dr. Kunitzer will probably carry the matter to a higher court.

Maxims for Mothers.—The New York Diet Kitchen Association on July 8 opened a new branch milk station, to be known as the Tuck kitchen, where milk for infants and invalids will be supplied. In the milk stations throughout the tenement districts the following maxims for mothers have been posted: "Take your baby to a milk station and you won't have to take it to an undertaker. Don't wait until baby is sick; the milk station keeps baby well. Don't feed baby every time he cries; learn to read baby's cry at the milk station. Good air is baby's cheapest medicine; at the milk station you can learn how to get it in the easiest way. The milk station doesn't sell patent babies' foods; don't use them except when the doctor tells you to. Keep baby cool, clean and quiet; if you won't, the milk station can't help you."

Infant Mortality.—It is stated that during the first week of this July there were in New York 207 deaths of infants under one year of age, or 80 less than during the same week of last year, and that for the past six months the number of deaths has been 416 less than for the same period of 1911.

Col. William C. Gorgas, chief sanitary officer of the Isthmian Canal Commission, has refused an offer of the chairmanship of the Boston Board of Health, with the statement that while his work on the Isthmus is nearly over he feels that it is his duty to remain until the actual completion of the canal. The Mayor had previously offered the appointment to Dr. Wiley, who declined. Why not draw upon home talent? Boston has many good sanitarians, some one of whom might be induced to look after the health of his fellow-citizens for $5,000 a year.

Harvard Medical School.—The Board of Overseers of Harvard College have announced the following appointments to the Harvard Medical School faculty, to take effect on September 1: Dr. Howard Augustus Lothrop to be assistant professor of surgery; Dr. John Lewis Bremer to be assistant professor of histology; Dr. Marshall Fabyan to be instructor of comparative pathology; and Dr. Herman Frank Vickery to be instructor in clinical medicine, the last being a reappointment.

No Extra Pay for City Officers.—The Appellate Division of the Supreme Court of New York recently handed down a decision reversing a judgment for $2,140 awarded by a jury to Coroner's Physician Otto H. Schultze of New York, who had testified as a pathological expert in the Patrick murder trial and other criminal cases. The court held that by accepting the appointment as coroner's physician Dr. Schultze became a city officer and was prohibited from recovering for any services to the city or county while holding such position.

Centenarian Dead.—The oldest resident of Massachusetts, Mrs. Catherine Snay, died at Oxford in that State on July 10, from heat prostration, aged 106 years. She retained her mental faculties until the end, in spite or because of the fact that she was an inveterate pipe smoker.

New Coroner for Bronx.—Governor Dix on July 10 appointed Jerome F. Healy as coroner for the Borough of the Bronx, New York, to succeed Coroner Albert Schwannecke who died a short time ago from injuries received in the performance of his duties. Coroner Healy ran against Coroner Schwannecke at the time the latter was elected to office three years ago.

Repeat Carrel's Experiment.—The French Academy of Medicine, which has appeared to be rather sceptical of the reports made before it as to the work of Dr. Carrel of the Rockefeller Institute in the prolongation of life in animal tissues outside of the body, has recently received confirmation of his work in experiments conducted along the same lines by Professor Harinesco and Dr. Mirea of Bucharest. They reported success in artificially preserving alive cultures of nervous tissue consisting of fragments of ganglia of various mammals which were immersed in the plasma of the animal and at the end of twenty to twenty-seven days began to develop cell structures. It is believed that the Academy will now abandon its previous attitude and accept the statements which aroused so much controversy a few weeks ago.

Babies to Save Rent.—In Paris where workingmen with large families find it difficult to obtain living quarters, a condition to which some at least of the fall in the birth rate has been attributed, an experiment is being tried in the erection of four blocks of flats which will be rented to workingmen at a reasonable yearly sum, with the proviso that the birth of a child will free the tenant from the payment of rent for the following quarter.

In Smallpox Quarantine.—The steamship *Haverford*, which reached Philadelphia on July 8, was detained at Quarantine and her 431 steerage passengers were removed to the Marine Hospital at Lewes, Del., for observation. The last time the *Haverford* docked in Philadelphia the ship's surgeon failed to report that there had been one death from smallpox and several suspicious cases during the voyage, with the result that within three weeks smallpox cases had been reported all through the surrounding country and more than 200 cases were traced to that source of infection. It was therefore decided that on her next arrival the vessel and her passengers would be closely observed.

Homeless Consumptives.—The Tuberculosis Committee of the Charity Organization Society of

New York has gathered statistics for the purpose of showing the need of a reception hospital for the treatment of consumptives in this city. They state that of 29,460 cases of tuberculosis registered in New York, 5,053 were "homeless." Of these, 1,004 were actually without any homes, 2,099 were reported as "not found," and 1,346 lived in lodging houses, and 544 in furnished rooms. The Department of Health is directing its work principally toward reaching those who are in the early stages of the disease, and by continued care preventing its development. This is impossible, however, in the "homeless" cases, and only by providing suitable hospital facilities can the death rate in tuberculosis be largely decreased.

Gifts to Charities.—By the will of the late Mr. George Strauss of New York bequests of $250 each are made to the following institutions: Lebanon Hospital, Mt. Sinai Hospital, Montefiore Home, and Hebrew Infant Asylum.

Red Cross Building.—The Committee on Building and Grounds of the House of Representatives has voted to recommend the appropriation of $400,000 toward the construction in Washington of a building to be used as the permanent headquarters of the American National Red Cross. The building, half of the cost of which is to be raised by public subscription, is to "commemorate the services and sacrifices of the loyal women of the United States during the Civil War."

The Floating Hospital.—On July 5 the Floating Hospital of St. John's Guild, New York, made its first trip down to the Lower Bay, and will continue to make six weekly trips throughout the summer. On July 11, 1,600 mothers with their sick and ailing babies were taken for a day on the water.

New York at the Hygienic Congress.—New York City will have a large exhibit at the Congress of Hygiene to be held in Washington next September, Dr. Schereschewsky, the director of the exhibit, having applied for 500 square feet of floor space and 4,000 square feet of wall space. The exhibit will include a model tuberculosis clinic, a tuberculosis registration office, an infants' milk station, models of the Otisville and other department buildings, and a subexhibit showing the general method of handling and controlling the milk in New York.

An International Extension Course in Psychiatry at Fordham.—In September, 1912, there will be given at Fordham University a three weeks' International Extension Course in nervous and mental diseases. Dr. Jung of Zurich aided by Dr. Smith Ely Jelliffe of New York and Dr. W. A. White of Washington will expound the principles of the Freudian psychology, and Dr. Knauer of the Kraepelin Clinic, Munich, assisted by Dr. J. W. Maloney of New York, will teach the direct experimental method. This course, which in addition to these features will be made up of a complete survey of nervous and mental diseases by eminent European and American specialists, will, it is hoped, prove to be an abiding stimulus to the progress of neurology and psychiatry in America.

Health Activities in Philadelphia.—Plans are under consideration by the Department of Public Works and the Department of Public Health of the city of Philadelphia looking to the inauguration of a campaign aimed at the extermination of mosquitos and rats.

More than 8,450 pounds of fish were recently destroyed on one day by the Chief Meat and Cattle Inspector of the Department of Health. Inspection trips are made daily among wholesale dealers in fish during the heated term.

The 484 steerage passengers arriving from Liverpool on the steamship *Haverford* at the Delaware Breakwater on July 8 were taken to the United States Marine Hospital at Lewes, Del., and vaccinated, and they will be detained for two weeks for observation. The ship and the passengers' effects were disinfected. It is thought that the steamship on its previous passage brought several cases of smallpox into the city.

Obituary Notes.—Dr. Daniel H. Smith of New York a graduate of the College of Physicians and Surgeons, New York, in 1873, a member of the Greater New York and Physicians' Mutual Aid Societies, and for nineteen years a police surgeon of New York City, died at his home, on July 10, aged 60 years.

Dr. Edwin Taylor Davis of Ellington, Conn., a graduate of the University of Vermont College of Medicine, Burlington, in 1888, and a member of the American Medical Association and the Connecticut State and Tolland County Medical Societies, died at his home of pneumonia on June 27, aged 49 years.

Dr. James H. Hutchins of Hampton, Ia., a graduate of Rush Medical College, Chicago, in 1870, and of the New York University Medical College in 1881, a member of the Iowa State and Franklin County Medical Societies, and a veteran of the Civil War, died at his home after a short illness on June 23, aged 6 years.

Dr. Edward Joseph Shanahan of Taunton, Mass., a graduate of the College of Physicians and Surgeons, Baltimore, a member of the American Medical Association and of the Massachusetts State and Bristol County Medical Societies, and formerly city physician of Taunton, died at his home on June 27.

Dr. George W. Henry of Camden, N. J., a graduate of the Jefferson Medical College, Philadelphia, in 1885, a member of the New Jersey State and Camden County Medical Societies, and formerly coroner of Camden and a member of the New Jersey State Legislature, died at his home on July 2, aged 53 years.

Dr. William DeKalb Wiley of Richburg, S. C., a graduate of the New York University Medical College in 1888, and a member of the American Medical Association, the South Carolina State and Chester County Medical Societies, and the State Board of Medical Examiners, died at Eureka Springs, Ark., where he had gone for his health, on June 25, aged 46 years.

Dr. David Hudnal Connally of Tyler, Texas, a graduate of the Atlanta Medical College, Ga., in 1860, and city physician of Tyler, died at his home on June 23, aged 74 years.

Dr. John Patten Wales died at Wilmington, Del., on June 27 at the age of 38 years. He was graduated from the medical department of the University of Pennsylvania in the class of 1898. He was a grandson of Major Patten of Revolutionary War fame, and president of the Delaware Society of the Cincinnati. He was at one time mayor of the city of Wilmington. He was a member of his local county Society; of the Delaware State Medical Society and of the American Medical Association.

Dr. Edmund Enquist Hill of Nome, Alaska, a graduate of the Cooper Medical College, San Francisco, in 1895, formerly coroner of San Francisco County, and more recently mayor of Nome, died at his home on June 22, aged 44 years.

Correspondence.

OUR LONDON LETTER.

(From Our Regular Correspondent.)

ROYAL FÊTE DAY FOR HOSPITALS—3 DAYS DEBATE AT R. S. M.—HEALTH EXHIBITION AND CONFERENCE—PATENT MEDICINES—INSURANCE ACT—OBITUARIES.

London, June 28, 1912.

On Wednesday London presented an unusually festive appearance. It was the day fixed for inaugurating the fête day of Queen Alexander and supporting the hospitals in which she is most interested. The idea had been to carry a rose as a sign of approval and nearly everyone you met displayed the emblem in some form. Ladies of title sold the flowers at every corner or place of vantage. The money thus collected is to go to the hospitals and they are expected to profit by as much as £25,000.

Another way of benefiting hospitals may be mentioned here. It is announced to-day that an anoymous donor has sent £20,000 to St. Thomas' Hospital for the new out-patient department.

The set discussion on syphilis at the R. S. M. extended over three meetings and was concluded on Monday last. Obviously various aspects of the subject were presented, though more or less distributed through the debate. Dr. Norman Moore took up the history of the disease, starting with the publication in 1530 of the poem of Hieronymus Fracastorius, which indicated that it had been recently introduced. Freind's suggestion that it was imported from America by those who accompanied the Columbus expedition though often repeated had no evidence to support it and recently the examination of skeletons from American tombs dating before Columbus shows no evidence, while after that event there is ample proof that the natives suffered severely. Galen's works contain nothing to indicate he had seen locomotor ataxia or G. P. I. and he would not be likely to overlook them. The same may be said of Hippocrates.

Mr. Hutchison suggested that Shakespeare was a victim of the disease, as his writings display intimate knowledge of its symptoms and mental and moral disquietude when he wrote *Timon of Athens*. He suggested that if Shakespeare was the father of Sir Wm. Davenant, as some hold, the portraits of the latter show the physiognomy of congenital syphilis and so supports his suggestion.

Dr. S. Pernet said he had no doubt at all that the Columbus expedition brought the disease from America.

The relation of the disease to the public health was taken up by Dr. Mott, who repudiated the too common belief that it is less prevalent than formerly. It might be assuming latent forms which should be expected in a people syphilized for generations. Latency was more likely when the *locus minoris resistentiæ* was the nervous system, and in this age many neuroses evidently thus originate, including a large proportion of cases of congenital idiocy.

Mr. McDonagh said in no other country was there so great reluctance to discuss this subject and he insisted that instruction should be given about it to soldiers, to school-boys, and to college students. He would even have notification extended to venereal diseases, but in this he was opposed by Dr. Pernet, who objected to placing more power in the hands of the police.

The therapeutic aspect was opened by Mr. D'Arcy Power, who dated modern treatment from 1905, when Schaudinn discovered the spirochete. In 1907 Wassermann published his test. In 1909 Ehrlich issued his "606." Thus it is too early for final conclusions and for years to come results will have to be reconsidered. At first he confessed he was skeptical of the Wassermann test, but he is now satisfied of its great value though it has limitations. We now know that mercury will destroy the causal microorganism in a way that its substitutes or adjuvants cannot. Intramuscular injections of the creams of calomel and metallic mercury as devised by the late Col. Lambkin have given excellent results and were less painful than other formulæ and in no case in Mr. Power's wards were they followed by troublesome symptoms. Of course care was taken to avoid nerves and vessels. It was found better to have the creams dispensed in single doses, in hermetically sealed tubes and to sterilize the syringe by boiling in olive oil immediately before use; the cream and oil mix well, but when water is used for sterilizing bubbles will form. Col. Lambkin's method marked a distinct advance and was followed in detail as to dosage, time of giving, intermitting, etc. Mr. Power regarded the mercury as curative; it was well adapted for army, navy, and hospital practice, but some private patients refused to be injected and then he had recourse to the old perchloride with potassium iodide.

Salvarsan had been largely employed in his wards and he thought highly of it as a remedy for manifestations but had always used it in conjunction with mercury. It arrests the symptoms sooner than mercury and can be used as a test. It must be used methodically, injections once every two or four weeks. Time has to be allowed for the elimination of the large amount of arsenic. The salvarsan was given by intravenous injection, the patient being kept in bed for twelve or fourteen hours previously and every point in the operation was carefully described. As to contraindications some twenty-three fatalities have been recorded, some due to faulty technique, others to the moribund state of the patients or to unfitness for the remedy. The method seemed safe with reasonable caution. Mr. Power concluded with a description of the combined method of treatment from the first stage onwards to the cure, employing the scientific test to determine the intermissions of the mercury from time to time so as to avoid continuing it longer than absolutely necessary. Still he had to admit that Wassermann's test is not absolute, as it remains negative in a certain percentage of cases.

Mr. Ernest Lane agreed that salvarsan was a valuable remedy, though having treated 300 cases its effects seemed less striking than some had alleged. Mercury would cure if given long enough; the two years commonly advised was not enough—he had recommended seven years. Salvarsan must be given with great care to prevent accident. In one case the needle was passed through the distal wall of the vein, resulting in edema of the whole arm for a fortnight. Fatal cases had been recorded. He had treated seventeen cases with neo-salvarsan, which is very soluble in water and causes a slighter reaction, but it caused the symptoms to disappear in the same way as salvarsan. Another preparation—Joha—was introduced as a mode of giving salvarsan intramuscularly and said not to cause necrosis, pain, or toxic symptoms. But one case was in bed three weeks after it with pain in both legs.

Mr. Hutchinson said salvarsan ought to be given

in distilled water. In a fatal case an acid solution was used—much more dangerous than an alkaline. Mercury cured 70 per cent. in two years, according to the Wassermann test. It did not much matter in what form it was given, if the patient were only kept under the influence long enough. Salvarsan acted more speedily, and seeing the possibilities ahead one needed rapidity. Bone pains and cephalalgia disappeared quickly. It was valuable in malignant cases, but disappointed him in deafness and keratitis.

Mr. McDonagh agreed to the necessity of distilled water, but further insisted it should be redistilled immediately before using. He had given neo-salvarsan in 200 cases and preferred it, but its effects should be reinforced by mercury.

Mr. Yearsley found in the deaf schools of the County Council that 39 cases out of 576 cases of acquired deafness were those of congenital syphilis. General treatment seemed useless against that symptom. Repeated blistering seemed of some use.

Mr. C. F. Marshall in a written contribution (read by Mr. Power) expressed satisfaction with the treatment by mercury and potassium iodide, to which well established method he had so far adhered.

The Biennial Health Exhibition and Conference has been held during the last four days. A number of interesting exhibits connected with hygiene were on view, among them quite a collection illustrating the care of infants (the subject of the first day's conference), recumbent invalid lifting methods, useful cheaply made carrying chairs, a model of a shelter for consumptives, etc. The first paper was on "Infant Consultations," and the discussion or conference on this rather equivocal expression was a strong condemnation of artificial feeding. One speaker said a mixed feeding was unmitigated nonsense. Tuberculosis, Dr. Kelynade urged, was best attacked in the child when the chief opportunity of preventive measures was available. So with deafness, which Mr. Yearsley urged was to a large extent preventable. Professor Kenwood had a paper on "Rural Housing," and the health promoting agencies in metropolitan areas were also passed in review. The subjects dealt with yesterday, the concluding conference, included "Need for a Hospital for the Middle Classes at Moderate Fees," and the care and control of the feeble-minded.

The select committee of the House of Commons on the sale and advertisement of patent medicines was occupied during the whole of one day in the examination of Dr. Alfred Cox, secretary of the British Medical Association. He has not held that position very long and may possibly have overlooked some things which have attracted the attention of others. I am certainly surprised at some of his testimony, although as a whole it was correct and straightforward. He said it had been estimated that in 1908 the money spent on advertised remedies amounted to £2,500,000, a sum sufficient to maintain 40,000 hospital or sanatorium beds. He submitted a memorandum on behalf of the association which proposes that the name and quantity of the constituents shall be placed on the label of every packet of proprietary medicines, which shall be also subject to the Food and Drugs Act. Advertisements or labels with false description would be an offense and the Home Secretary would be required to prosecute.

Yesterday Mr. E. F. Harrison, expert analyst, gave evidence as to the composition of these advertised medicines, which ought to be an eye-opener to the public. In one of which was sold at £2 10s, the value of the constituents did not exceed 2 pence halfpenny. Another which would cost perhaps 3 pence to make up was sold at 13 shillings.

The insurance dispute has made no further progress. Other interests besides the doctors are making protests. Last night the Albert Hall was packed with ladies and domestic servants and an overflow meeting had to be held. The strongest expressions were employed and resolutions of resistance carried by acclamation. The Government continues its course. A chief medical officer to the commissioners has been appointed. An independent accountant has undertaken to investigate the conditions and remuneration of practitioners in half a dozen towns. On its completion possibly better terms may be offered. Meantime it is hinted that in default of agreement Mr. Lloyd George will be unmoved and will give to insured persons the money assigned for medical benefits, and let them make their own terms.

Sir John Logan Campbell, M.D., F. R. P. S. Edl., popularly known as the "Father of New Zealand," died at Auckland on June 21 in his ninety-fifth year. He was one of the founders of Auckland, born at Edinburgh, where he graduated, and then entered the E. I. Co.'s service, remaining in it until 1839. In 1840 he went to New Zealand, and in 1855 became superintendent of Auckland Province, and in the next year was a minister without portfolio. He organized the New Zealand Rifle Corps, maintained the Free School of Art at his own expense, was chairman of the Education Board, and a founder of the New Zealand Bank. He was mayor of Auckland the year of the royal visit and presented it with a park. The next year he was knighted.

The death in his eighty-first year of Deputy Surgeon General William Watson, I.M.S., retired, on June 16, recalls the story of his heroic action during the Indian mutiny. In a retreat on account of failure of ammunition a soldier fell wounded in a position where there was no conveyance available. Watson retraced his steps alone, picked up the wounded man and carried him on his back. He received a wound himself on the scalp and suffered from brain fever. On recovering consciousness his first inquiry was for the rescued soldier.

Dr. W. L. Reid, who formerly served in the Light Dragoons, has died at Ealing, aged 91.

OUR LETTER FROM CUBA.

(From Our Regular Correspondent.)

THE BUBONIC PLAGUE—THE NEGRO UPRISING—EFFECT OF ANTITYPHOID INNOCULATION.

HAVANA, July 7, 1912.

SHORTLY following the announcement of the existence of bubonic plague in the neighboring Island of Porto Rico, several suspicious cases have been discovered in this city. On July 6 the National Commission of Infectious Diseases, to which Agramonte and Guiteras belong, diagnosed a case in a Spanish laborer as positive. This is, so far, the only positive case yet found, but there are reasons to think that three previous fatal cases had the same origin. Two of the cases had been diagnosed as pneumonic in type, and another one as septicemic in character. The fact that these patients were of the same social class and that they lived in the near vicinity of the man in whom the plague was diagnosed, as well as the evidence attained by their living in the maritime district, go far to make us sus-

pect the bubonic plague nature of all four cases.

The Health Department has taken strong measures to eradicate all rats and to completely clean up the entire city. Fumigation has been carried on in an extensive area and even the presidential residence and several large newspaper buildings have been included in this measure.

Five cents is paid for each dead rat, and large squads of sanitary employees under the command of Dr. A. G. Dominguez, are employed in order to carry on with great energy the rat destruction. Word has just been received in sanitary circles that Dr. von Esdorf of the Marine Hospital Service and an old friend of Cuba, has been sent by the United States authorities to help us in the fight against bubonic plague.

Yersin's serum has been injected in the case of Mendez Guerra, the Spanish patient now under treatment, and our sanitary authorities, under the command of Dr. Varona Suarez, secretary of health, seem to have the situation well in hand. Reports of the whole island are satisfactory, as no case has been reported from any of the cities and small towns.

Our impression is that the dreaded disease will not gain foothold in Cuba, as a strict quarantine has been established and the prophylactic campaign is being energetically carried out.

The negro revolution which broke out on May 20 in Oriente Province, has been greatly exaggerated. Over 5,000 negroes took to the woods and the Government sent against them about 6,000 regular soldiers and rural guards. Less than twenty of these died as a result of gunshot wounds, the casualties on the negro side being conservatively estimated as over 3,000.

The fact that no cases of typhoid occurred in the army goes well to prove the efficiency of the antityphoid immunizing serum which had been used in a large number of soldiers several months before the revolution broke out.

OUR BERLIN LETTER.

(From our Regular Correspondent.)

THE PROPOSED UNIVERSITY OF FRANKFORT-ON-THE-MAIN—TRUANCY AND NOCTURNAL VAGABONDAGE—CONGRESS ON ORTHOPEDIC SURGERY—POLIOMYELITIS—TENDON TRANSPLANTATION.

BERLIN, April 20, 1912.

THERE has recently arisen in the organization of universities in Germany an idea that is entirely new in German scientific circles. For the first time a city steps forward as the founder of a university. Frankfort-on-the-Main is seeking to accomplish in this line what the State has already done. A large number of scientific institutions and hospitals will be united into one university, which will include the Academy of Social and Industrial Sciences; the city of Frankfort; the Institute of Common Welfare; various foundations, including that established by Speyer; the Senkenberg Society of Naturalists, and various medical institutions. The university will give collegiate as well as postgraduate courses. It is planned that professors in their research work will be unhampered by the needs of administrative supervision and of conducting examinations. There will be five faculties: those of law, medicine, philosophy, natural science, and social and industrial science. The government of the university will consist of two bodies, composed of 32 and 16 members, respectively, and consisting of representatives of the city, of the constituent bodies, and of the various faculties. The consent of the municipal council is the only step that remains before there is established the twenty-second German university.

Truancy and nocturnal vagabondage was the subject of an interesting discourse by Dr. Stier before the Society for the Care of Weakminded Children. Truancy and night wandering are very common in Berlin. The frequent consequences of these practices are in boys criminality and in girls prostitution. The treatment of the evil depends upon the determination of its causes. In the milder cases the cause is the love for adventure; in the more pronounced cases it is an inherited psychopathic constitution. A thorough study of these cases is being conducted in the psychiatric division of the Charitée under the direction of Ziehen. Frequently a stay of two or three weeks in the Charitée is sufficient to cure these cases. In other instances special schools, in which the children are given individual attention, are of value. In all cases the children should get sufficient sleep, including rest in bed during the daytime after the school exercises. Bad cases must be sent to correctional institutions.

The season of the big congresses is past. The number of papers keeps on increasing, so that a brief summary of the proceedings is extremely difficult. At the eleventh congress of the German Society of Orthopedic Surgery the subject for discussion was poliomyelitis and the speakers were Krause of Bonn and Lange of Munich. The former had the opportunity of observing the recent epidemic of this disease in the Rhine provinces. The disease broke out during the late summer and early fall among groups of children chiefly from two to three years of age, after an incubation period of from five to ten days. Only 20 per cent. of the cases recovered completely. Among 800 cases there were 150 abortive cases. Professor Lange discussed the orthopedic treatment. In the early stage the enforcement of rest to the paralyzed parts, preferably with the aid of plaster-of-Paris, is indicated. This serves to afford an early relief to the pain. At a later stage electricity, massage, and the application of warmth are indicated. For the prevention of contractures celluloid splints should be used. For the treatment of contractures the measure recommended is tendon-transplantation, which, however, should not be employed in children under four years of age. Of exceptional value is the union in continuity of the transplanted with the paralyzed muscle. Early motion is necessary. Paraffin sublimate silk and oxycyanide silk are efficient in the prevention of stitch abscesses. The knots of the stitches should be flattened out in order to avoid the effects of pressure. The after treatment requires immobilization for six weeks by means of plaster-of-Paris. Tendon-transplantation has produced such good results as to be ranked among the greatest achievements of modern orthopedic surgery.

The Subcutaneous Cellular Tissue in the Defense of the Organism of the Child.—F. Maillot states that the subcutaneous cellular tissue plays an important part in the general nutrition and defense of the organism of the child. This part may be disturbed by hypertrophy or atrophy of its anatomical elements, coupled with obesity, lymphatism, or cachexia. Lymphatism causes localizations of infections; atrophy and cachexia predispose to generalization of the infection and septicemia. Dystrophies of this cellular tissue explain the gravity of infections of cutaneous origin in the child. This shows the necessity of avoiding infections in children especially in the atrophic and cachectic.—*Le Progrès Médical.*

Progress of Medical Science.

Boston Medical and Surgical Journal.

July 4, 1912

1. Remote Metastases Following Cancer of the Breast. J. C. Hubbard.
2. Blood and Stool Examinations in a Company of Philippine Scouts. E. S. Tenney.
3. Theories as to the Causation of Monsters. C. J. Kickham.
   On Suppurations of the Urinary Tract.
4. Suppurations of the Urethra, Prostate and Seminal Vesicles. H. Terry.
5. Suppurations of the Urinary Bladder. H. C. Pitts.
6. Suppurative Lesions of the Kidney and Ureter. O. C. Smith.
7. Three Unusual Cases of Appendicitis. G. W. Morse.
8. The Operative Treatment of Spina Bifida, with Report of a Case. L. G. Paul.

1. Remote Metastases Following Mammary Cancer.—J. C. Hubbard has collected from the literature the reports of 1,052 cases of mammary cancer with a secondary growth in the opposite breast in a little over 0 per cent. of the cases. The thoracic organs, as one would naturally expect, are frequently involved. In 28 cases occurring in the years 1909 and 1910, there were 22 cases in which the thoracic organs were affected. Of the abdominal organs, the liver is by far the one most frequently involved. The kidney, however, is least frequently involved. The relative frequency of the involvement of the different organs is often quite unreliable when determined clinically. The figures made from autopsy findings should alone be accepted. The following statistics demonstrate this clearly. Campiche, Lazarus, and Barlow collected from 1858 to 1903, 1,110 cases in which no autopsy was made. From these cases there was said to be a metastasis of the liver recognized during life in nine cases, and in the kidney in but one. In a series of 410 cases with a post-mortem examination, the liver was involved in 202 cases, and the kidney in 1—a vastly higher percentage. The same difficulty occurs when one tries to consider the figures of secondary growth in the skeleton. The skeleton is scarcely ever examined unless there are clinical evidences drawing particular attention to a definite bone. In these same 1,110 cases the vertebræ were involved but three times, and the femur was involved but nine times clinically, while in the 470 cases examined with the microscope the vertebræ were involved 32 times and the femur was involved 28 times. Ribbert states that bone metastases in females most commonly follow cancer of the breast, while in the male they are secondary to cancer of the prostate, and the cellular type more often involves the bone secondarily than the scirrhous form. The bone metastasis may be the only one present in the body, the other organs being free. With a bone metastasis, spontaneous fracture is of course liable to occur, and is often the first symptom of any trouble. Metastases of the brain occur in 15 per cent. of all cases.

2. Blood and Stool Examinations in Philippine Scouts.—E. S. Tenney has noted the prevalence of intestinal parasitic infection in a very large percentage of Filipinos, even when living under the favorable conditions of the soldier. The average Filipino can harbor a variety of intestinal parasites without any apparent detriment to his general health. Uncinariasis is common, but seldom causes any definite symptoms. Filariasis is not of frequent occurrence.

3. Causation of Monstrosities.—C. J. Kickham states that the causation of monstrosities by supernatural means (as understood by the ancients) is without foundation. Maternal impressions such as trauma or nervous shock may have much weight. Hybridity need not be considered. Pressure exerted by adhesive bands on the funis, or as the result of trauma, are no doubt the cause of some deformities. Changes in the amnion, no matter what the reason, are acknowledged to be a most certain cause of many types. Some of the minor abnormalities may be the result of disturbances in the fetal period; but the majority of monstrosities can be accounted for only by morbid influences acting on the embryo itself or the germinal cells.

4. Suppurations of the Urethra, Prostate, and Seminal Vesicles.—H. Terry states that pus may mingle with the urine because of urethritis, acute or chronic, due to the gonococcus or other irritant, prostatitis, seminal vesiculitis, stone in the prostatic urethra, neoplasms or ulcers in the urethra; or because of inflammation under a long foreskin. Stone in the prostatic urethra is not common. Inflammations of the prostate and seminal vesicles are the most frequent and important causes of pus in the urine originating in the genital tract. The possibility of tuberculous inflammations of the organs should be thought of.

5. Suppurations of the Urinary Bladder.—H. C. Pitts states that in considering the source of pus found in urine drawn from the bladder, it is necessary to eliminate the kidneys and ureters and the deep urethra. This done one has, first, the bladder wall itself to look to and, second, some pus cavity in the surrounding tissues or in a neighboring organ, emptying into the bladder. Pus from the bladder wall itself is the direct result of an infection, and an infection of the bladder wall is always accompanied by pus. The immediate cause of an infection is the presence of one or more varieties of bacteria; the predisposing cause, an insult to the bladder mucosa. Many infections take place as a direct extension downward from the upper urinary tract, or as an extension upward from the deep urethra. Organisms may be carried to the bladder directly on dirty instruments, or from an infected urethra by instruments, and the instrument that carries the infection may produce the insult that makes its spread possible. Bacteria excreted through the kidneys may find lodgment in the bladder, and again there may be an infection of the bladder by organisms passing through the tissues from the bowel. A hematogenous infection of the bladder is conceivable and probably does occur at times.

8. Operative Treatment of Spina Bifida.—L. G. Paul emphasizes the following points in regard to the treatment of spina bifida: (1) Do not operate if the patient is mentally defective, or if marked paralysis exists. (2) Do not operate on very young babies unless rupture has occurred, or is imminent. (3) Raise the foot of the operating table so that the patient's head will be low, and intracranial pressure maintained. (4) See that the sac is free from nerve elements before ligating the pedicle. (5) A small, temporary drain, down to the lumbar fascia, is advisable.

New York Medical Journal.

July 6, 1912.

1. The Rotation Treatment of Scoliosis. A. M. Forbes.
2. The Gastric Crisis of Tabes. I. Friedenwald and T. F. Leitz.
3. Neurasthenia in the United States. J. M. Taylor.
4. Facial Paralysis Complicating Suppurative Otitis Media; Atypical Mastoid Operation. E. Amberg.
5. American and European Medical Schools. A. L. Soresi.
6. Acute Anterior Poliomyelitis. F. E. Butler.
7. Maternal Nursings. W. M. Hartshorn.
8. Treatment of Chancroids. R. M. Toll.

1. Rotation Treatment of Scaliosis.—A. Mackenzie Forbes presents this as a new method for the treatment of structural scoliosis. Treatment by torsion, according to this method, aims at the unfolding of the deformity with the production of physiological scoliosis on the side reverse to that of the greatest deformity. By means of torsion there may be obtained a correction of the deformity without that lateral pressure which, theoretically, at least, is so greatly to be deplored in the treatment of a compound deformity, of which a crushing, or a narrowing of the thorax is a most important part. The author states that treatment by this method has

been successful. Brilliant results are not claimed, but such cannot be expected in the treatment of an organic deformity which has baffled the wisdom of ages. The application of the first jacket is often followed by an increase in height of one or more inches. On the removal of the first and subsequent jackets, a decided improvement is often noticed. The routine treatment is to change the jacket every six weeks.

2. **Gastric Crises of Tabes.**—J. Friedenwald and T. F. Leitz report their observations in a series of forty-two cases of tabes in which attacks of gastric crises occurred. The patients were all males, whose ages ranged from twenty-nine to sixty-four years. The attacks of gastric crises were noted five times as an initial symptom. Severe pain was noted in eleven cases, was moderate in nine cases, and severe and sometimes moderate, in twenty-two instances. Severe attacks of vomiting were observed in twenty-three instances, moderate in twelve, and severe and again moderate in seven cases. The general health of the patient was affected as a result of the crises in twenty-five instances in the series; the general health was not affected in seventeen. The gastric secretion was examined both during the crises and in the interval. The secretion was obtained during the crises of thirty-five patients; it contained a normal amount of acid in six cases, while hyperchlorhydria existed in thirteen; hypochlorhydria was present in ten, and the gastric secretion was variable in its acidity in six cases. The gastric secretion was secured during the interval of the attacks in thirty-six cases. There was a normal acidity in fourteen instances, hyperchlorhydria in twelve, and hypochlorhydria in ten. If the cases are classified according to the plan of Sainton and Trenc, six cases would fall in the mild variety, that form accompanied by pain, but with little vomiting. Of the abortive variety, there were nine cases of the vomiting form and five of the gastralgic. Of the severe variety there were three cases; this is the form accompanied by extreme pain and collapse. In the complicated variety there was one with hematemesis, and there were four with hypersecretion. In the abnormal variety, that form with very frequent repetition of attacks, there were three cases, and in the variety alternating or associated with the other symptoms, eleven.

3. **Neurasthenia in the United States.**—J. Madison Taylor states that in the United States there is a widespread evidence of constitutional susceptibility to factors of exhaustion. The fundamental agency in the production of nervous irritability, or subversion of vital energies, is to be found in peculiarities of climate not adequately reckoned with, and their corollary, careless omissions to observe economic modes of life, whereby the hurtfulness of local climatic conditions can be escaped. While this holds true for all types of people, it is of special consequence for blonds. Among blonds, especially in the third and fourth generations, are notable instances of neurasthenia to be found in tropical and subtropical countries. Lombroso's tables, showing the monthly genesis of insanity in Europe, bring out the fact that by far the largest number of instances (nearly double) occur from April to August inclusive; least in January and February. Suicide is vastly more common from April to August (most in June and July) with a marked increase on hot days, and especially humid ones. Conscience becomes dulled, loss of temper explosive and extreme, during protracted heat, constituting a gradual debasement by environment. Such effects are especially noticeable in the very young and very old, and more so in women than in men. All these facts are related by numerous and competent observers. If the foregoing postlulates can be sustained, then the remedial measures appear to be obvious and urgent. Methods of life should be adopted designed to meet these and similar exigencies. As soon as the summer solstice is established, hours for work should be changed, beginning earlier by an hour, with an extra hour or more at midday devoted to rest—*siesta*. This is especially urgent for those who work in the sun. For all, the hours of work in midsummer ought to be fewer.

5. **Medical Education in Europe and America.**—A. L. Soresi states that in Austria, France, and Germany, education is exclusively a governmental institution. The government pays for the maintenance of every school, including medical colleges. Every position on the teaching staff is open to the widest competition. In every city of a certain size there is a medical college, but only one, no matter how large the population. In Berlin, Paris, and Vienna there is one medical college, representing in this way all that those cities and the government are able to do in the line of medical education. The hospitals belong to the city, and by special agreement with the medical faculties the different professors are enabled to pick up whatever clinical material they require for teaching purposes. Each official professor has special hospital accommodations, by which patients are kept under his care for teaching purposes, and patients are very anxious to be under such care, because they know that they have the very best of treatment and assistance. Every professor is appointed through the widest competition, after having been for some years assistant to some other professor or *privat dozent* or *professeur agrégé*.

8. **Treatment of Chancroids.**—R. M. Toll recommends the following treatment: Wash the ulcer with a 1 to 1,000 bichloride solution and dry thoroughly with a cotton swab. Apply a drop of 4 per cent. cocaine solution. After a minute touch up the raw surface with pure phenol and follow in ten seconds with alcohol. That is all. No powders or dressings of any kind are required. Instruct the patient to return in three days. It is astonishing how much improved the ulcer will be. The raw area will be smaller and shallower and surrounded by sloping, healthy skin—giving it the appearance of a miniature crater at the top of a minature volcano. Repeat the same treatment to the raw surface remaining, and continue so every three days until the ulcer is entirely healed. This will occur after five or six treatments, without leaving a sign of any previous infection.

Journal of the American Medical Association.

July 6, 1912.

1. **The Functions of the Large Intestine.**—By W. B. Cannon. (See MEDICAL RECORD, June 29, 1912, page 1248.)

2. **New Method of Suturing Blood Vessels.**—By J. S. Horsley. (See MEDICAL RECORD, June 29, 1912, page 1250.)

3. **Prostatectomy.**—G. Kolischer, after referring to the work of Zuckerkandl and Tandler on the anatomy of the prostate gland, says that considering that the hypertrophied part of the prostate is always that which is closest to the bladder, it is obvious that the suprapubic

method ought to be the one chosen. The fact that the "surgical capsule" is composed of compressed and atrophied glandular tissue furnishes a point as to the way access should be gained to the tumor to be enucleated. It emphasizes even more the rule that the covering of the prostate, the vesical mucosa, and the "surgical capsule" should not be perforated by boring with the finger but by incision with the knife. The author is convinced that operating in the dark has something to do with postoperative hemorrhage. The operator deprives himself of the opportunity of seeing and attending to the small spurting arteries. The digging out of the prostate in the dark, with a good deal of force as a rule, may be a source of still more dangerous hemorrhage. The forcible pulling inside the bladder may lead to the detaching of the anterior part of the viscus from its connections and to the rupturing of the big vein located thereabouts. The preservation of the verumontanum and of the ejaculatory ducts which the author claims in his operation can be proven clinically and by ocular evidence. Some patients experience marked increase of sexual power and the author has at his disposal seven urethroscopic findings after suprapubic enucleation in which the verumontanum and the openings of the ducts could be seen through the urethroscope.

4. **Pityriasis Rubra (Hebra).**—H. J. F. Wallhauser reports a case of pityriasis ruba with a discussion of the pathological findings. Hebra emphasized the fatality of the disease though some writers have since mentioned cases that recovered. A thorough microscopic examinnation after death was made in this case. The most important condition calling attention to the grave character of the disease was the degeneration found in the vessel walls. Comparing the general findings and clinical course of the disease, one can assume that the process primarily involved the capillaries, as is evidenced by the early hyperemia gradually involving the vessel walls in an obstructive hyperplasia followed by degeneration; thus accounting for the gradually deepening color of the hyperemia due to the deposit of blood pigment in the corium. The atrophic changes are also accounted for as the result of the hardening of the vessels and consequent malnutrition. The peculiar progressive character of the ulceration was explained as follows: The primary pea-sized ulcer developed as the result of the obliteration of a small arteriole, apparently remaining quiescent until several neighboring branches shared in the process of occlusion, then coalesced and finally extended down through the underlying tissues as the deeper vessels became involved. From the microscopic findings one can assume that in pityriasis ruba one has a condition producing changes in the histological structure of the skin of a permanent character, and until some remedy is found or the etiological factor is isolated and controlled these cases will nearly, if not always, substantiate the prognosis as advanced by Hebra.

5. **Cancerous Degeneration in Chronic Leg Ulcer.**—W. S. Gottheil reports three cases of cancerous degeneration of a chronic leg ulcer. He finds the literature of such cases very scanty though some textbooks mention the subject in a casual way. In spite of the constant irritation and other unfavorable conditions which suggest that cancer might develop from such ulcerations, cancer seems to be one of the rarest of their consequences.

6. **Cowpox Vaccination.**—J. Rosenfeld has found, in confirmation of the results obtained by von Pirquet, that the papilla formation in cowpox vaccination is a local phenomenon. The independent development of each infected point as evidenced by the time of onset, the duration, and other local manifestations bear out this point. It is a local reaction, however, only until the maximum of development is attained. Involution begins simultaneously in all points in whatever stage of local development they may happen to be. Therefore, the involution may be regarded as due to a general reaction or change in the organism. The area formation is undoubtedly a general reaction on the part of the organism. This is clearly protrayed in the simultaneous formation of area in all points in successive vaccinations at the same time with a rise in body temperature and other signs of constitutional disturbances which are in general corresponding in degree to the extent and intensity of the area formation.

7. **Transplantation of Human Cornea.**—A. Magitot states that the proof of the vital condition of the preserved and transplanted cornea lies in the fact that although a pterygium returned after removal it grew only to the edges of the graft, whose tissues must have had sufficient vitality to defend themselves. It must, finally, be noticed that the eye which furnished the graft was in a state of hypertension, the cornea being anesthetized and cloudy. The cloudiness disappeared after being a few hours in the preserving liquid. Eyeballs affected by absolute glaucoma may, therefore, be utilized for this operation. As far as the technique of the operation is concerned, the author still believes that partial keratoplasty is the best method and that it is not necessary to make a large opening in the opaque cornea. No suture is necessary; the operation must be performed at the center of the cornea and one need not have the incisions extend into the conjunctiva.

9. **Reading a Book Page Instantaneously.**—G. M. Gould reports a case of unique vision in which an individual was able to read at one glance the entire page of a book. The ability began to show itself in middle life, becoming more perfect as age advanced. The mental functions were unusually well developed. The man was exceptionally learned, his memory almost faultless. The case is explained by the author as follows: Some time during the middle years of the individual's life the macular region of the retina of the right eye was destroyed by choroiditis due to eyestrain. The fixing part of the retina was obliterated. The left eye was not diseased and continued the perfection of macular or central vision. By long, unconscious and forced exercise the healthy zone of the right retina was educated to such a degree as to be able to receive and transmit to the brain the image of the entire page except that part falling on the destroyed central portion. This was naturally supplied in perfection by the macular region of the left eye. The central visual center thus received the entire photograph of the object seen made complete by the complementing action of the two eyes. It seems impossible to the author that, with retained macular function of both eyes, such a marvelous extension of synchronous peripheral vision could be acquired.

10. **Factors of Safety in Operations for Exophthalmic Goiter.**—C. H. Mayo notes that these operations were formerly attended with a large mortality, but the recognition of these factors of safety is shown today by the lessened mortality of from 1 to 4 per cent. The estimated proportion of cures is about 75 per cent., though some of the symptoms may persist to a minor degree but not enough to affect the working ability or general health. Within the past year the Mayos have operated on a consecutive series of 278 cases without a single death which the author believes is due to taking advantage of the so-called "factors of safety." These are given as follows: (1) As regards operating during periods of exacerbation or excessive activity of the disease; the mortality in these cases is frequently high; one should employ in these cases only the medical treatment, *i.e.* rest, *x*-rays, etc., with attention to the heart, stomach and intestines according to the indications pre-

sented by the individual case, until the exacerbation of symptoms subsides. (2) Gastric crises and acute delirium are serious manifestations and operations should not be done until the conditions have subsided. (3) Dilatation of the heart which exceeds 1 inch is a serious condition, while that of 1½ inches will give a percentage of unavoidable mortality for the radical operation of thyroidectomy. (4) Ligation as a method of surgical treatment has an accredited position in the treatment, and in the early stages patients are sometimes wonderfully improved by simple double ligation. (5) Serious risks are treated by a single ligation of the vessels at the upper left pole. The reaction is about three-quarters as severe as from a double ligation, but the missing one-fourth is an element of safety. If the reaction be very severe a second ligation of the right upper pole is made a week later and the reaction following this is slighter. If it is not severe at this second operation the right lobe, isthmus, and possibly a portion of the left lobe are removed. In some cases of extreme emaciation, yet with a temporary fair or improved condition, a double ligation is made at the one operation. In several hundred patients the average gain of weight after ligation was twenty-two pounds within four months. At this time a thyroidectomy of one-half or three-fourths of the gland can be done with small risk. Ligation of vessels should be made close to or including some of the pole itself to prevent reversal of circulation through anastomoses of the inferior artery. Thyroidectomy of three-fifths or more of the gland is indicated in most chronic cases in which dilatation of the heart does not exceed one inch and in which there are no complications. The small percentage of relapses within one or more years after partial thyroidectomy should have the benefit of further operation. The primary procedure should be ligation of the vessels at the superior pole. If this is not successful a part of the gland can be excised later with but little risk. Ether preceded by atropine and morphine is the anesthetic of choice, but if there is extreme nervousness scopolamine is used, and the worst type of cases with heart and kidney disease are operated on with local anesthesia or have the benefit of Crile's preparation—injecting a local anesthetic into the operative field in addition to the other preparations before ether is given.

11. **Catharsis.**—E. P. Quain states that the function of peristalsis is not limited to the propulsion of intestinal contents but also aids in causing circulatory changes aiding absorption and a more rapid assimilation of absorbed products. Hence, if pathological products exist in the intestines, increased peristalsis may aggravate the symptoms and in acute inflammations within the abdomen, nature's effort is to subdue peristalsis about the infected region. Hence nothing should be done to increase it. The author criticises the common use of salines as tending to destroy the bactericidal properties of the intestinal secretions, and calomel comes under similar condemnation to some extent. When a cathartic is necessary oil is probably the least harmful to the mucosa. All of the author's fatal cases of acute appendicitis, with or without surgical intervention, had, without exception, received and retained some active cathartic at the beginning of the disease, while abdominal inflammations similarly unpromising that recovered had not suffered from the factor of purgation. Patients coming for abdominal operation in emergency without previous preparation suffer less from gas distention than those that have been carefully prepared beforehand, and this is attributed to the use of cathartics in the preliminary treatment.

12. **Intraabdominal Pressure.**—J. Riddle Goffe directs attention to one new feature in the discussion of intraabdominal pressure, namely, that of the reflecting and deflecting planes which determine the direction that shall be taken by the resultant of all the component forces. For many years the author has been teaching the action of the posterior wall of the uterus and the broad ligaments as a deflecting plane of intraabdominal pressure, as it enters the pelvis. The purpose and the physiological function of the many muscular ligaments which the uterus possesses had long been a conundrum, but in the light of their function in regulating the angle of the deflecting plane of the uterus and its broad ligaments, the whole subject becomes clear. The uterus is successively lifted up by the bladder and twisted about on its longitudinal axis by a full sigmoid either to the right or left and, therefore, keeps its ligaments busy maintaining a proper face or plane to intraabdominal pressure which expands itself on this surface, not only in extreme effort, but with the frequency and force of every respiration. In all operations for the restoration of the uterus to its normal position, in cases of displacement, attention must be given at all times to the restoration of this deflecting plane in order to restore physiological function and thereby permanency of result. This is best accomplished by utilizing both the round and the uterosacral ligaments. In the use of the pessary the same principle is involved; the retroversion pessary, in order to be efficient, must reach up sufficiently high above the cervix to take in the slack in the uterosacral ligaments as well as the posterior fornix vaginæ. At the same time, it must not be so long that it cannot yield to intraabdominal pressure sufficiently to permit the uterus to tilt up and deflect the pressure back into the axis of the pelvic outlet. The importance of restoring this physiological deflecting plane of the uterus and broad ligaments is most conspicuous in operations for the relief of procidentia with its accompanying complications of rectocele and cystocele.

Case of Paralysis of the Left Third Cranial Nerve Associated with Left-sided Headache.—D. Hall reports the case of a zinc worker, aged 30; family history good; previous health good; married over three years; one healthy child, aged 2½; one miscarriage one year ago; no history of venereal disease. Present illness: On January 17, 1909, "a pain caught him right across the head." The pain lasted for six weeks and was more severe on the left side. After this gradual paralysis of the left third nerve set in: first diplopia, then complete ptosis; later the ptosis cleared up and the diplopia became troublesome again, and has not left him. He then began to have attacks of left-sided headache with nausea without any of the usual phenomena, and the third nerve paralysis became complete. Present state: The ptosis is now clearing up under mercury and iodine. There are no physical signs of disease other than the left third palsy. Wassermann tests in the blood and cerebrospinal fluid were both negative.—*Proceedings of the Royal Society of Medicine.*

Reactions of the Blood in Carcinoma.—J. A. Shaw-Mackenzie notes that the serum of the blood taken from cases of carcinoma manifests two important properties: (a) an increased antitryptic value; (b) a power to accelerate the action of pancreatic lipase which is far in excess of what is found in normal serum. These two reactions when present together furnish a valuable aid in the diagnosis of malignant disease, and their absence excludes the diagnosis of cancer. After recovery or improvement, or during a period of quiescence, the accelerating power of the serum on lipase remains high, or may be even higher than when the disease is manifest. But under the same conditions the antitryptic value falls to normal. Such reactions serve, therefore, to control treatment and to indicate progress towards recovery or otherwise. The lipoclastic acceleration is a possible and natural factor in resistance to disease, in carcinoma and in other conditions. If this suggestion is admitted, serum and substances which increase this action or protective mechanism are indicated in treatment. Already, although the cases in mice and men are too few to yield decisive results, the author has observed a beneficial influence on malignant disease treated on these lines.—*Proceedings of the Royal Society of Medicine.*

Insurance Medicine.

A PROJECT OF STATE INSURANCE MONOPOLY IN ITALY.

The principle of State Insurance has developed very rapidly since the first modest beginnings were made in the end of the last century. Germany now possesses a most complicated State insurance system, including provisions for indemnifying for injury from accident, disease, etc. The recently proposed scheme in England, with its old age pensions, medical attendance provided by the State, etc., is still the chief topic of political discussion in that country. Much broader, however, than these is the scheme of State insurance embodied in the program of legislation of the present Italian ministry. It proposes nothing more or less than a State monopoly in all kinds of life insurance, thus doing away completely with private enterprise in this branch of commercial activity.

The reasons brought forward by the ministry in favoring the project were as follows: (1) Life insurance business could be carried on by the State without much difficulty. There is no necessity of investing much capital in such industry, no need of expensive plants or machinery, no constant changes in organization. The industry depends most upon the stability of the organization and the confidence of the people in its honesty and good intentions. The ministry claims that in these respects the State surely enjoys marked advantages over any private companies. (2) Competition among private companies is a detriment to the insured. Such competition merely means increase of expenses for advertisement and for agents, and the introduction of various conditions and clauses in the policy merely meant to attract "customers" and not to increase the value of the insurance protection. (3) Life insurance monopoly should prove of great benefit to the government, for it provides a constant source of income, and may thus be used as a means of diminishing other taxes that fall more heavily upon the populace.

The project of the ministry met with much opposition in the Italian House of Representatives. It was pointed out that State agents could not be as effective as agents of private companies in spreading the "gospel of insurance" among the people; that uniformity in policies, which will be almost a necessity under a State monopoly, will not answer the needs of the various classes of population, which are now served by different private companies; that competition among the companies has been of ultimate advantage to the people, reducing rates and developing new and favorable conditions in the policies. Finally, that the State has no moral right to take over a flourishing private industry, just because that industry may help it over its fiscal embarrassment.

These objections have led to a modification of the project, which originally was very radical in form, providing for an immediate transfer of all private insurance business into the hands of the State. The ministry is now willing to allow ten years to the private concerns for winding up their business and also to provide for proper reimbursements of the companies for the loss of their incomes. The project is at present a subject of very lively discussion in the political and business circles of Italy especially as in its changed form it has finally been accepted by both chambers of the Italian Congress. Though in America the agitation for the participation of the State in insurance industry, beyond mere supervision, has not been very strong, the question is of such wide interest that attention of insurance men is called to this new venture in State monopolies. An article by Dr. Rocca in the *Zeitschrift für die gesammte Versicherungs-Wissenschaft* (Vol. XII, No. 3) contains an able discussion of the subject and to it we are indebted for many of the data cited.

What the Life Insurance Companies Can Do to Increase the Physical Welfare of Their Policyholders.—Preventive medicine or measures calculated to prevent disease and preserve health are rapidly rising in public esteem. Of course, it is now well recognized by the medical profession that in preventive rather than in remedial or curative measures the future of medicine lies. This fact is also becoming appreciated by the general public, and Dr. Eugene L. Fisk emphasized this feature of the situation in an address he delivered before the American Association of Life Insurance Examiners at Atlantic City, on June 3, 1912. He is of the opinion that in the direction of health conservation the life insurance companies have a large field in which to work and that their power to prevent much of the needless misery that affects generation after generation of mankind not only affords these companies a magnificent opportunity, but imposes on them a solemn obligation. A start has been made along these lines by the Postal Life Insurance Company, of which Dr. Fisk is medical director. Dr. Burnside Foster of St. Paul suggested some three years ago that the periodic medical examination of policyholders would be a step in the right direction and this suggestion modified to the extent of granting examinations annually instead of quinquennially was adopted and incorporated into the Health Bureau scheme of the Postal Insurance Company. Health conservation in some form is now practised by five out of 231 old-line companies and, of course, the Health Bureau established in the Association of Life Insurance Presidents, in 1910, is doing valuable work, but, as Fisk points out, that bureau is engaged chiefly in accumulating information regarding health legislation, health conditions in certain localities, etc., and the operations are necessarily restricted. It exerts no systematic, direct influence upon policyholders. Moreover, it is hampered in the scope of its activities by lack of funds, as a yearly appropriation of $5,000 cannot go very far in the protection of 20,000,000 people.

Fisk rightly insists that the work of conservation of health by the insurance companies must be definite and practical, and in offering a scientific and practical reason for health conservation in life insurance, he believes that the following questions must be answered: 1. Is the present death-rate among insured lives necessarily a fixed quantity? 2. If not, how can the death-rate among insured lives be lowered? 3. What will it cost? 4. What will be the saving in dollars and cents? 5. What will be the influence upon life-insurance medicine? 6. What public service will be rendered? As for the first question, although some people doubt whether the present very favorable rate of mortality among insured lives can be lowered, Fisk holds the view that the mortality in the average well-managed company is far higher than it need be, and he illustrates this by a chart, derived from the experience of the United Kingdom Temperance and General Provident Institution of London, in which it is

demonstrated that abstainers show a much lower mortality rate than moderate drinkers. Other companies record like results. Therefore, Fisk argues that if one hygienic factor alone can lower the mortality in a large body of insured lives, then we are forced to the conclusion that the death-rate in the general section of these companies and in all other companies in which there is an exposure of average risks, is not a necessity, but could be materially lowered by superior living-habits. With regard to question 2, over and above the periodic examination of policyholders already referred to the author chiefly pins his faith on the education of the public in matters hygienic.

The cost would be heavy. In five leading companies, with about 2,230,000 policyholders, the cost of an educational campaign would be about $150,000 annually. The cost of periodic medical examinations would be a much more serious matter. However, the ordinary examination, urinary analyses being made at the home office, can be procured at $2.00 each. Physicians who are members of societies that will not permit them to make examinations for insurance for less than $5.00 are perfectly willing to make these Health Bureau examinations for $2.00, as they do not present the peculiar difficulties that are involved in an examination for new insurance. It must be clearly understood that the object of the system is not alone to detect disease in time to check or cure it, but to encourage a closer relationship between policyholders and the medical profession, thus shielding them from the pernicious influence of quacks, charlatans, neighbors, patent-medicine vendors, and temporizing home treatment. The results of these examinations are, as a rule, made known to the family physician, with the consent of the policyholder. Probably not more than ten per cent. of the policyholders would avail themselves of the privilege, at least for a number of years, although many would be influenced to undergo regular medical examination by their own physicians. The aggregate cost of periodic medical examinations in five companies with a total of 2,230,000 policyholders would be about $520,000 annually, assuming that only 10 per cent. availed themselves of the examinations. The total annual cost, therefore, of a comprehensive system of conservation in such a group of companies would be about $670,000 The saving through conservation would be to some extent problematical, although Fisk adduces some interesting computations. By efficient conservation work a company may reasonably expect to reduce the mortality on 10 per cent. of the risks to the rate experienced by the abstainers. Now, the net premium or actual cost of insurance for the non-abstainers, assuming that 75 per cent. of the risks were insured under the whole life policies and 25 per cent. under endowments, would be $25.98 at the age of 35, while the net premium for the abstainers would be $22.95, a difference of $3.03 in favor of the abstainers. Applying this factor to the insurance at risk in five leading companies during 1910, which amounted to $5,588,794,093, and the results, assuming that 10 per cent. of the business was favorably influenced by health-conservation, would be as follows: Mortality savings from conservation $1,692,496, deducting cost of Educational Health Bureau will leave $1,542,496, deducting cost of examining 10 per cent. of policyholders $520,000, will leave a net saving of $1,022,496. Fisk thinks that the ultimate meaning to the medical profession and to society will be for the good of both. As regards the medical profession, a comprehensive system of prevention of disease will reduce the need for treatment and this will curtail the revenues derived by physicians from diseased individuals. However, that is the highest aim of scientific medicine to-day which absolutely disregards the unfavorable financial reaction upon the profession from such endeavors. The author holds that the attitude of scientific medicine may well put to scorn those who cry, "A medical trust," while deriving their own revenue from the credulity of the sick and suffering. Let the people who are back of this cry do something to prevent disease and reduce their revenues from the afflicted and they will avoid the countercharge of constituting "a misery trust." The public service rendered will be the dissipation of ignorance. An educational campaign which persistently and systematically reaches directly or indirectly, perhaps, 60,000,000 people, will do much toward dispelling the gross superstition and ignorance that is still so widespread, regarding matters of bodily health. By demonstrating that those who neglect or abuse their bodies are not only poor animals, but bad business assets, that communities without efficient and sufficient health protection are likewise bad national assets and a drag upon the country's progress, there will result a more positive response to the efforts of agencies for social reform and uplift, and health conservation in life insurance will become a powerful civilizing force.

Relations of Lesions of the Liver and Gall-Bladder to Life Insurance.—C. W. Pierce says that a large number of policyholders die each year from diseases of the liver or gall-bladder, males developing cirrhosis, and females gallstones, cholecystitis, and cancer. He thinks that tight lacing is in women one of the causative factors of liver disease, because of production of "corset liver." Quincke thinks that gallstones, gallstone colic, inflammation of the gall-bladder, cancer, perihepatitis may be frequently due to this condition. Moreover, tight lacing and even tight clothing outside of corsets may cause disturbances in other organs, favoring the production of movable kidney on the right side, ptosis of the stomach, stasis in the portal circulation, intestinal catarrh, hemorrhoids, constipation because of this stasis. Stasis of bile predisposes to the formation of gallstones and such stasis takes place in women with "corset livers," the frequency of which in autopsies has been shown to exceed 25 per cent. Pregnancy and abdominal tumors are the two other predisposing factors in the development of gallstones in women. Cancer and gallstones are very frequently present together in women, the irritation of the stones predisposing to carcinoma of the gall-bladder. Courvoisier found this coexistence of stones and cancer in 90 per cent. of cases.

About one-third of all cases of hepatic cirrhosis are due to immoderate use of alcohol and three cases of this disease are found in men to one in women. Of course, individual resistance to alcohol plays a very important rôle in deciding the character of the effect it may produce. Examiners should accordingly be on the lookout for such conditions of the gall-bladder or of the liver. Moreover, as practitioners they should teach prophylaxis by advising against tight lacing in women and excess in alcoholic beverages in men. Pierce thinks that policyholders should be reexamined at stated intervals and such as are degenerating because of drink should be eliminated.—*Southern California Practitioner*, May, 1912.

Book Reviews.

SOME RECENTLY DISCOVERED LETTERS OF WILLIAM HARVEY, WITH OTHER MISCELLANEA. By S. WEIR MITCHELL, M.D., LL.D., F.R.S. With a Bibliography of Harvey's Works by Charles Perry Fisher, Librarian of the College. Transactions of the College of Physicians of Philadelphia, 1912.

THIS is a small volume, but it is one of great interest. Dr. Weir Mitchell here gives us some of Harvey's letters which have only recently been discovered, and which, but for this charming brochure, some of us might never have an opportunity of reading. To every one interested in the history of medicine and science, and particularly in the details of the life of the great physiologist this pamphlet will be found entertaining and instructive. The book includes a useful bibliography of Harvey's works compiled by the well-known librarian of the College of Physicians of Philadelphia. The pamphlet concludes with an estimate of Harvey's character, from which we quote two sentences: "Concerning scientific differences and hostile comment on his discovery, he was charitable, magnanimous, and well-mannered in his replies, a model for those men of science who bitterly resent opinions contrary to their own." . . . "That he was a reverently religious man is written in many a page of his works—surely, taking him for all in all, a model of what is best in the physician and the gentleman."

STUDIES IN PSYCHIATRY. Vol. I. By Members of the New York Psychiatrical Society. Price $2.00. New York: The Journal of Nervous and Mental Disease Publishing Company, 1912.

THIS volume is the ninth of the series of monographs on nervous and mental disease, edited by Smith Ely Jelliffe and Wm. A. White. Several articles of the fifteen making up its table of contents have interest for the specialist alone; many others, however, should claim general attention. Of the latter, the following may be named: The Curability of Early Paresis, by Dr. Charles L. Dana; the Diagnosis of General Paresis, by C. Macfie Campbell, who gives a résumé of histories and pathological findings in several illustrative cases: Clinical Varieties of Periodic Drinking, by Dr. Pearce Bailey; A Study in Race Psychopathology, by Dr. George H. Kirby; Ocular Reactions Among the Insane by Drs. Diefendorf and Dodge, etc., etc.

The papers are well and entertainingly written and are more ambitious than those usually heard in society meetings. It is therefore quite proper that they should appear in their present permanent form. We recommend the monographs of which this is one to the attention of physicians; their acquisition should form quite a nucleus of a library of modern thought in the study of nervous and mental disease.

THE FRIENDS OF THE INSANE. The Soul of Medical Education, and Other Essays. By BAYARD HOLMES, M.D., Chicago. Cincinnati: The Lancet-Clinic Publishing Company, 1911.

DR. HOLMES has a mission, and that mission consists in telling the medical fraternity about the shortcomings and even the crimes in the modern treatment of the insane. He thinks that the insane are looked upon too much as a source of danger to the community, and too little as patients whose disease should be scientifically studied. In other words, research of insanity has been subordinated to mere restraint of the insane, and thus prevention and cure of insanity become impossible because of the lack of knowledge of its etiology.

Dr. Holmes wields a ready and a sharp pen, and these short essays of his are recommended to those, whether lay or professional, who are interested in the subject.

DIFFERENTIAL DIAGNOSIS. Presented Through an Analysis of 385 Cases. By RICHARD C. CABOT, M.D., Assistant Professor of Clinical Medicine, Harvard University Medical School, Boston. Second Edition, Revised. Profusely Illustrated. Price $5.50. Philadelphia and London: W. B. Saunders Company, 1912.

IN this book Dr. Cabot takes the reader into his confidence, so to say, and tells him the course of his thoughts when at the bedside of a patient. That patient is made an actuality to the reader, as he was an actuality to Dr. Cabot, by the recital of the history, the physical findings and such other matters as would clear up the situation. These data set up a certain train of thought in the reader, which he can then compare with the train of thought that has passed through Dr. Cabot's mind, and is put down by him in the discussion of the differential diagnosis. The author, then, acts as a consultant, pointing out what facts should have been learned in each case and what logical inferences can be made from them. The various cases are grounded according to the "presenting symptom" or chief complaint heard from the patient, such as headache, lumbar pain, general abdominal pain, epigastric pain, etc., etc. Each chapter is introduced by a discussion of these symptoms, and a statistical study of them.

The book is not only a most practical guide for a practitioner, giving him the opportunity of learning from the actual cases seen by such a busy consultant as Dr. Cabot, but is also extremely stimulating, this quality being derived as much from the originality of its method as from the frequent quaintness and charm and the constant honesty of Dr. Cabot's discussions.

We do not recommend the book to students; it is not a textbook and many cases of diseases discussed are either too rare or too atypical to be profitable for the undergraduate. On the other hand, we know of no better book for the practicing physician, and especially for the man who is just through his hospital course and is entering practice. To them Dr. Cabot's book should prove invaluable.

SEX HYGIENE FOR THE MALE AND WHAT TO SAY TO THE BOY. By G. FRANK LYDSTON, M.D., Professor of the Surgical Diseases of the Genitourinary Organs and Syphilology, Medical Department State University of Illinois; Member of the American Medical Association; Member of the American Urological Association; Member of the Society of Authors of London, England; Author of Diseases of Society, the Blood of the Fathers, Etc.; Delegate from the U. S. Government to the Congress for the Prevention of Infectious Diseases, Brussels, Belgium, etc., etc. Price $2.25. Illustrated with 24 Engravings. Chicago; The Riverton Press, 1912.

THIS volume is aimed to fill the demand for a book that would serve as a popular treatise on sexual hygiene. This is a subject the importance of which has gained universal recognition within recent years, particularly among sanitarians and educators. The book is designed for pupils of the high school age and older, for their parents, and for their teachers. The scope of its subject matter may be adequately indicated by an enumeration of some of the topics discussed as follows: the lie of the wild oats; the social evil; physical training; methods of muscle building, forms of athletics, bathing, and massage; general principles of sexual hygiene and maintenance of health; suggestive literature; suggestive theatricals; marriage; nonvenereal diseases; diseases of the procreative function; the venereal diseases, and a word to teachers and parents and what to say to the boy. The book is written in plain, unequivocal, and elegant language, by one who has authority to speak on this subject to the youth of the land.

MILK AND THE PUBLIC HEALTH. By WILLIAM G. SAVAGE, B.Sc., M.D. (Lond.), D.P.H., County Medical Officer of Health, Somerset; Late Medical Officer of Health and Public Analyst, Colchester; Lecturer in Bacteriology, University College, Cardiff; Assistant in Charge of the Bacteriological Department, University College, London. Price, $3.25. London: Macmillan & Co., Limited, 1912.

THE increasing recognition of the importance of municipal regulation and supervision of the milk supply, imparts particular value to an authoritative treatise that deals with the many phases of this vast subject. The present volume admirably fills the demand for such a work. Its subject matter is presented in three parts: Part I takes up the bacteriology of milk and the relation of milk to human diseases; Part II deals with the bacteriological examination of milk; Part III discusses the public health control of the milk supply. The first part presents an exhaustive summary of the scientific knowledge with reference to milk and its relationship to disease. The second part is matter for the laboratory worker and the third part deals with the administrative aspect of the subject, describing the existing conditions of the milk supply, the reforms in these conditions; the legal powers in England applicable to milk, the prevention of human tuberculosis of bovine origin; the special methods to obtain a pure milk supply, artificial methods for the preservation of milk, and machinery and procedures to obtain a pure milk supply. There are also appended the Manchester tuberculosis milk clauses, the tuberculosis order (1909) of the Board of Agriculture, the Danish (1904) tuberculosis act, the milk and dairy bill of Mr. John Burns, the New Jersey Certified Milk Act of 1909, and the reports required and rules enforced by an English Milk Company.

Society Reports.

NEW YORK PSYCHIATRIC SOCIETY.

Stated Meeting, Held March 6, 1912.

CHARLES L. DANA, M.D., PRESIDENT, IN THE CHAIR.

Bleuler's Schizophrenia.—Dr. AUGUST HOCH read a review of this subject, in which he said Bleuler was of the opinion that dementia præcox constituted a very large group of cases or a set of groups. According to him it comprised much more than was ordinarily included. In spite of suggesting the possibility of subgroups, he looked upon the disease as due to a definite disease process, probably an intoxication which he admitted we do not as yet know but which produced certain fundamental symptoms, notably a disorder of the associations consisting in a general loosening of their affinity, and certain physical symptoms. It was a disease which varied much in course and in outcome, though every case showed some defect after the acute symptoms had disappeared. Latent cases also occurred, that is, conditions which did not lead to commitment and which showed no active symptoms. The marked symptoms or syndromes, however, were not the direct outcome of the disease process, but were due to the influence of emotions exerted through mechanisms which Freud had taught us and which could not be understood without a thorough appreciation of the unconscious mentation—studied therefore by means of psychoanalysis. These mechanisms produced in dementia præcox such marked and lasting influences because the fundamental association disorder furnished a basis upon which this was possible. Therefore a great deal of the symptom picture in dementia præcox was explained on the ground of psychogenesis. Owing to the many objections which had been raised against the term dementia præcox, Bleuler introduced the term schizophrenia instead, the most marked characteristic of the symptom picture being dissociation, produced on the one hand by the fundamental disorder, and on the other hand through Freudian mechanisms. In criticism Hoch said that while Bleuler's book contained an excellent description of symptoms and the most valuable and fruitful suggestions, it seemed difficult to prove the existence of the fundamental association disorder because psychogenic mechanisms produced the same results. Psychogenesis, therefore, seemed applicable in a wider sense than Bleuler was willing to admit. This was, however, only possible if we accepted the existence of congenital tendencies to abnormal makup, which allowed the psychogenic mechanisms to become fixed and to show themselves in special ways. But of course if dementia præcox was essentially a disorder of instincts, there must be a physical side to the disease, be it in the form of abnormal internal secretions or other metabolism disorders, or what not. But this physical side evidently stood in a different relation to the abnormal functions than was the case in general paralysis, for example. When we spoke of psychogenesis, we did not mean to exclude this physical side, but since we knew so little about it and since we could describe a good deal in the clinical picture and development of dementia præcox psychologically, we preferred for the present to deal with that which we knew and which we could express in mental terms. Finally it must be stated that in the realm of the more functional psychoses, viz., dementia præcox, manic-depressive insanity, paranoia, the psychoses of degenerates, etc., we were dealing with disorders which grew out of the personality, which were therefore not apt to be circumscribed diseases as were the organic disorders, but must be looked upon as mental reactions, between which transitions occurred. For this reason a one-word diagnosis often expressed inadequately the real situation. It was from this point of view that a widening of the conception of dementia præcox was not indicated.

Dr. A. ROSS DIEFENDORF said he was interested in Dr. Hoch's criticism of Bleuler's contribution to the psychogenesis of dementia præcox. Dementia præcox had become a very large group statistically, so that it now included practically everything outside of the organic psychoses and typical cases of manic-depressive insanity. That being true, the speaker thought Bleuler's comprehensive grouping indicated a step backward.

Dr. STEWART PATON wshed to refer to one point in connection with the psychogenesis of symptoms. Clinicians were apt to forget how complicated were the phenomena of consciousness. The study of comparative physiology emphasized this complexity. Consciousness was not, as some clinicians affirmed, an isolated phenomenon. There was clearly a great field in psychoanalysis, and the possibilities were clearly outlined in Dr. Hoch's paper.

Dr. GEORGE H. KIRBY said Bleuler's work interested him particularly because of the excellent analysis of clinical symptoms which the author gave. The arguments which were brought forward to support the hypothesis that in these cases we were dealing with a special disease process, were, however, far from convincing. Bleuler had picked out a few symptoms which he considered to be fundamental, but which after all were extremely widespread, shading off on the one hand into simple constitutional abnormality, and on the other hand, according to the author, appearing in the well circumscribed toxic and organic conditions, such as the alcoholic psychoses and general paralysis. Such a conception certainly tended to obscure many important issues and instead of helping us to narrow down the dementia præcox group, or at least to make various smaller subgroups, the whole problem became at once tremendously diffuse, and dementia præcox would comprise an even more unwieldly and heterogeneous mass of cases than ever before.

Dr. L. PIERCE CLARK said that while Bleuler's conception was a masterly presentation of the functional psychoses by and large, it seemed to give us no special help in understanding and dealing with specific cases or groups of cases, the essential need of the present state of the subject. It was interesting to see that Bleuler would make schizophrenia embrace not only the crazy episodes of the precocious dement, but the entire defects of makeup of the case from birth as well. Although this position might be the true psychobiological one for these mental disorders, it furnished little that was essentially new. Dr. Hoch's excellent critical review of the work in itself was a distinct and unique contribution to our knowledge of the functional psychoses and neuroses.

Dr. FREDERICK PETERSON had found this description of Bleuler's work very interesting. He had great respect and admiration for Bleuler because he was an especially clear and original thinker, but he did not think we should enlarge the scope of dementia præcox too much, otherwise dementia præcox would become synonymous with insanity.

Dr. SWEPSON J. BROOKS said we had all suffered from too large a classification and the desire to label our cases in accordance therewith. The more one delved into that sort of thing, the more it seemed to show that most of the psychoses depended upon the fundamental defect which Bleuler seemed to have found in so many of the cases examined and analyzed by him.

Dr. C. MACFIE CAMPBELL said Bleuler had made a valuable contribution to the analysis of a large percentage of cases of mental disorders, but the very largeness of the percentage indicated a certain weakness in his method. It showed that the psychopathological principles with which he dealt were of wide validity, but at the same time were too wide to be used as a sufficiently discriminating basis of classification. The stress laid on the mechanisms had led to the comparative neglect of wider considerations as to general symptomatology and course. As the mechanisms referred to were also met with in other disorders as well as in normal life, it was not surprising to find that there are all transitions from a marked schizophrenia through latent forms to practically normal individuals. With such a conception the introduction of a hypothetical morbid process would strike one as rather artificial. Bleuler would lead us from Kraepelin's dogmatic dementia præcox to another equally dogmatic presentation with a still stranger name.

Dr. HOCH, in closing, said the book of Bleuler was one which every one who worked in psychiatry must read, because it was of the greatest importance, and from what had just been said the other members of the society seemed to agree essentially with what he had expressed. He perhaps had not made it sufficiently clear that in our studies of pyschiatry we were not so much concerned with classification as with the sizing of the different factors which entered into the clinical picture. In regard to Dr. Paton's remarks he would simply state that he was well aware that a great deal entered into mental phenomena which could not be expressed in mental terms, but this should not detract from an attempt at present to describe as much as we could, in the sequence of events, psychologically.

The Mental Hygiene Movement.—Dr. WILLIAM L. RUSSELL of White Plains, N. Y., read this paper. (See page 111.

The President, Dr. CHARLES L. DANA, said that it seemed to him the Psychiatric Society was to some extent under obligation to consider this problem, and perhaps take some action in regard to it as well as discuss it. He

hoped in the discussion the question as to what we might do would be brought up.

Dr. KNAPP said that, while a movement of this sort if kept strictly under intelligent control might be capable of considerable assistance, it might also be attended with very serious danger. The "social service" movement, for example, was at times useful, but the "social worker" might often become so imbued with the sense of her omniscience that she would assume the authority of the physician, as in a case recently reported to the speaker in which a "social worker" set aside the recommendations of a neurologist and urged the patient to go to the Emmanuel healers. Any question having to do with mental disease and its treatment had a certain attraction for a large number of psychopathic, unbalanced individuals, who, if they could obtain control of some organization, might cause very great harm. Although the intelligent cooperation and assistance of the general public was desirable, our first aim should be to instil a little psychiatrical knowledge into the minds of the medical profession. He had just discharged from his service a patient with the gastric crises of tabes—a typical case with absent kneejerks, Argyll-Robertson pupils, etc. Three surgeons in three different hospitals had opened this man's abdomen and found nothing. The ignorance of the profession, great as it was in regard to nervous diseases, was even greater in regard to mental diseases. If the profession could be enlightened it would be vastly more helpful than to encourage the cooperation of the laity.

Dr. HENRY A. COTTON said he had been very much interested in hearing of the work of the National Committee, and was inclined to think good results would come from the work as planned by them. It was a significant fact, as explained by Dr. Russell, that the fund had been given for the express purpose of investigating the present condition of the insane. All knew that the care and treatment of the insane was not uniform throughout the country, or even in some cases throughout the hospitals in one State. Some States had made progress while other States were caring for their insane patients in much the same way as they did twenty-five years ago. The speaker did not want to be put in the position of criticising other institutions, realizing that he had plenty of serious faults in his own hospital. But he thought the work of the National Committee could be carried on in a quiet manner, without undue publicity and without criticising unjustly, and so produce excellent results. In a recent discussion with several institutional men the question was brought up whether it would not be a good policy to score the various State institutions according to their merits. Undoubtedly there should be some method of comparison. There should be some standard and an effort made to bring up all hospitals as far as possible toward this standard. There should be judicious inquiries into the conditions of the various hospitals, not for the fact of publicity, but to find out the real state of affairs. The Board of Managers of the insane hospitals, as a rule, entirely ignorant of what was being done in other hospitals throughout the country, frequently were ignorant of the progress that was being made, not only in the care and treatment of the insane, but in work along scientific lines. In many cases superintendents were anxious to inaugurate modern methods and to install new apparatus but were unable to do so because of the question of expense. If, on the other hand, lack of development and lack of progress were due to the superintendents, the committee would act as an efficient aid to spur them on to more activities along modern lines. There was no doubt that great progress had been made in our State hospitals, and the speaker appreciated the good work which had been done in New York and other States in the East, as well as in some of the Western States, but he thought all would agree that there was very much more to be done before we could say that there was any uniformity in the work of the hospitals.

Dr. CARLOS F. MACDONALD said the subject was one of great importance, but there might well be a difference of opinion as to the best method of carrying out the proposed reform. It seemed to him it involved a work that should be largely done, or at least participated in, by the laity, especially those who were interested or engaged in philanthropic work, aided and assisted by the general practitioner, the family physician. In other words, the public and the general profession should be supplied with a practical knowledge of the causes, the nature, and the forms of insanity, and particularly as to its early manifestations, to the end that they might be able to recognize its onset, in order that means might be taken for its arrest before the disease had become fully established. This suggested the field of operation for the alienist and the one in which he could best promote the propaganda, namely, by leading the general practitioner into the realm of psychiatry. But in order to do this successfully the subject would have to be simplified far more than it was to-day. He agreed with Dr. Knapp in what he had said relative to the importance of diffusing among the general profession a working knowledge of mental diseases. Even under the old classifications and terms the general practitioner was prone to stand aloof from the study of psychiatry and to regard the subject as something beyond his ken, to which the alienists alone possessed the key. But, under the new dispensation, with its new nomenclature, its new theories, and its involved, complicated, and tedious methods of case-taking, the subject was rendered still more mysterious and difficult of comprehension to the busy general practitioner. Every physician in general practice should possess a knowledge of insanity sufficient to enable him to recognize cases when he met them, to determine the form of the disease, and to care for them properly until such time as they might be committed or otherwise disposed of. The speaker could not subscribe to the suggestion that in our present methods of caring for the insane we were proceeding along substantially the same lines that were in vogue forty years ago. During the more than forty years that he had been engaged in the care and treatment of the insane and the management of the institutions therefor he had witnessed very marked improvement, both in the methods and in the provisions for the care of this class of diseases, improvements that had generally been adopted and put into operation throughout the entire civilized world. So that the modern hospital for the insane of to-day represented everything that medical science had suggested, whether for the cure of the curable or the amelioration of the incurable. And yet, despite all that had been done, it was a lamentable fact that the recovery rate had not appreciably increased. This movement, as outlined by Dr. Russell, was certainly a most worthy one and one which called for the best effort of every alienist, individually and collectively, for the prevention of insanity.

The President, Dr. DANA, said the main question was whether the society should take some action in connection with this movement; whether the members should put themselves on record as offering their cooperation.

Dr. HOCH said, in regard to Dr. Dana's proposition, that it seemed eminently fitting that this Society should give its cooperation to this movement. It had been a very difficult task to formulate the plans for the National Society, and the whole question of prevention of insanity, in which such factors as the medical education, school hygiene, the spreading of knowledge in regard to the causes of mental disease, and greater attention to the mental development in childhood and infancy must be taken into consideration, was particularly difficult to formulate. But there was no other way to begin than to launch this movement somehow, and it seemed to the speaker rather wise that the National Committee should start with a survey of the present treatment of the insane.

Dr. DANA asked whether it would not be well to keep track of the movements of this committee and act as a conservative factor. He had heard many express the opinion that if this committee was going to work to investigate medical colleges they were opposed to it; if it would be antagonistic to many alienists and Boards of managers it would not be a wise movement. We did not want to do that.

Dr. A. ROSS DIEFENDORF, speaking for the work in Connecticut, said he had been in touch with it there since its inception, and could report a healthy growth. The duties of the "social worker" were increasing monthly. This included the investigation of special and needy cases, after-care work, and visits to a dozen or more institutions. There were many visitors and inquiries from all parts of the State asking for a variety of information. Indeed, it was evident that the society had established for itself a definite place in the care of the insane in Connecticut.

Dr. WILLIAM L. RUSSELL said Dr. Salmon had had considerable experience. He was two years at one of our State hospitals and for several years was employed on Ellis Island examining immigrants in regard to their mental state. He organized there a small hospital for cases under detention. He had also done some statistical work for the State Commission in Lunacy and had been chairman of the Bureau of Alienists concerned with the deportation of the alien insane. He had, in fact, devoted a lot of time to mental diseases for a number of years. He would like to say that one remark in his paper was that the plan was not with a view to making statistics for to publicity, though what he had stated was not to be looked upon as an authorized statement for the committee. It was based on his own information as far as it went. The

object of making an investigation in several States was to bring about some organized effort for the improvement of conditions in these States. While the speaker was willing to accept all criticisms that had been made and realized the dangers fully, he did think there was something more to be done in bringing about better conditions in the care of the insane than simply educating the medical profession, although he thought that was the most important thing that could be done. If a promising movement was started to bring this about he would leave the present movement and go into that. The questions at issue involved, however, other than purely medical considerations. Legislative and administrative methods went far in accomplishing results that were effective, and in that he thought the laity must have a hand. The people paid the bills. In any case this movement was not one that was waiting for the medical profession to start; it had been started already, and to a considerable extent had been started by laymen. If we had any duty in the matter, and Dr. Russell thought we had, we should try to support it and guide it along rational and proper lines.

State Medical Licensing Boards.

STATE BOARD EXAMINATION QUESTIONS.

BOARD OF MEDICAL EXAMINERS, STATE OF FLORIDA.

Jacksonville, May 6 and 7, 1912.

ANATOMY.

1. Locate the fascia lata.
2. Name the bones of the wrist.
3. Name the bones of the larynx.
4. Describe the portal circulation.
5. Describe the chambers of the eye.
6. Name all the organs in the peritoneal cavity.
7. Define articulation; symphysis synchondrosis.
8. Name and locate the ductless glands of the body.
9. What is the prostate gland, Cowper's gland, Bartholin's gland, carunculæ myrtiformes?
10. What structures would be divided in a cross section of the body at the seventh cervical vertebra? At the sacrococcygeal juncture?

PHYSIOLOGY.

1. What is the difference between anabolic metabolism and catabolic metabolism?
2. What are fats and how are they digested and carried into the circulation of the blood?
3. What are the chief constituents of normal fresh urine?
4. Describe the locations at which the different sounds of the heart can be heard the plainest, and what produces each sound.
5. What is meant by normal blood pressure and how is it ascertained?
6. Why does the normal temperature of the body remain the same in hot weather as it does in cold weather?
7. What are the functions of the liver?
8. What are proteins, and which of the digestive ferments act upon them?
9. Describe respiration and what keeps it going?
10. What are leucocytes; their composition, and describe their functions and actions in the living body?

CHEMISTRY.

1. What use is made of the syllables *ous* and *ic, ite* and *ate* in distinguishing compounds from each other?
2. Express the chemical equation resulting from a mixture, in solution, of sodium carbonate and calcium chloride.
3. Describe the flame test for potassium, sodium, and cuprum (except cupric and cuprous compounds).
4. Give treatment, in detail, for acute carbolic acid poisoning.
5. Describe symptoms of acute belladonna poisoning, and give treatment.
6. Describe symptoms of acute cocaine poisoning, and give treatment.
7. Describe chyluria and how recognized.
8. Describe the metallic copper test for arsenic.
9. What are the physical properties of phosphorus?

MATERIA MEDICA AND THERAPEUTICS.

1. Mention three classes of evils which may result from chemical incompatibilities in prescriptions. Write such a prescription.
2. How does cold reduce temperature, and how best applied?
3. Name four classes of medicines, with an example of each class, and give dose of example.
4. Name five antiseptics and tell in what proportion each should be diluted for surgical purposes.
5. Name the mineral tonics. Write a prescription containing the most useful.
6. An anesthetic being indicated, state the conditions that render ether preferable and those that render chloroform preferable.
7. Mention some of the indications and contraindications in your use of ergot.
8. Where is the habitat and what are the physiological effects of digitalis?
9. Name three drugs used in the treatment of malarial fever. State how each controls this disease.
10. Give the theory of the alkaloid treatment of rheumatism.

OBSTETRICS.

1. Give diagnosis of pregnancy.
2. Describe the fetal circulation.
3. Describe pelvimetry and give the normal pelvic measurements.
4. How would you treat a case of placenta prævia?
5. Give etiology, pathology, and treatment of puerperal eclampsia.
6. Give etiology, prophylaxis, and treatment of ophthalmia neonatorum.
7. Describe the care of a new-born babe.
8. Give treatment of post-partum hemorrhage.
9. Define involution and give causes for sub-involution.
10. Describe the menopause and give some conditions peculiar to that period.

GYNECOLOGY.

1. Describe the Sims' position.
2. What is meant by the term menstruation, and what are the two theories as to its relationship to ovulation?
3. Name the two general classes of amenorrhea, and give some of the causes under each class.
4. Give causes, symptoms, and treatment of metrorrhagia.
5. Give symptoms and treatment of vaginismus.
6. Name the most frequent of the uterine displacements. Give treatment of such displacement.
7. Give diagnostic points in small uterine fibroids.
8. What three lines of investigation must be considered in making diagnosis of uterine cancer.
9. Give causes, diagnosis, and treatment of cystitis.
10. Give symptoms and treatment of movable kidney.

SURGERY.

1. Give etiology, symptoms, and treatment of cholelithiasis.
2. Give etiology, diagnosis, symptoms, and treatment of abscess of liver.
3. Differential diagnosis of carcinoma from sarcoma of mammary gland.
4. Symptoms and treatment of laceration from the middle meningeal artery.
5. Give etiology and treatment of torticollis.
6. Give varieties of hip-joint dislocation.
7. Give classification and treatment of fistula-in-ano.
8. Give symptoms of floating kidney and describe *in toto* the radical operation.
9. What is known as fracture by "contre coup"?
10. Give symptoms and treatment of floating semilunar cartilage of the knee joint.

ANSWERS TO STATE BOARD EXAMINATION QUESTIONS.

BOARD OF MEDICAL EXAMINERS, STATE OF FLORIDA.

Jacksonville, May 6 and 7, 1912.

ANATOMY.

1. The *fascia lata* is the deep fascia of the thigh, and invests the whole of the thigh.
2. The bones of the wrist are arranged in two rows: the upper row, from the radial to the ulnar side, consists of the scaphoid, semilunar, cuneiform, and pisiform; the lower row, from the radial to the ulnar side, consists of the trapezium, trapezoid, os magnum, and unciform.
3. There are no *bones of the larynx.*
4. *Portal circulation:* "The hepatic artery and the portal vein convey blood to the liver. The artery carries arterial blood, and the vein food-laden venous blood from the walls of the alimentary canal, and from the spleen and pancreas. Both vessels enter the liver at the transverse fissure, and they ramify in its interior, breaking up into small terminal branches which run between the lobules and send fine capillary branches into their substance; from these latter branches the blood passes into the capillary

tributaries of the intralobular veins, thence to the sublobular veins, and from the sublobular veins to the hepatic veins, which terminate on the posterior surface of the liver in the inferior vena cava."—(Bain's *Medical Practice.*)

5. CHAMBERS OF THE EYE: The *aqueous chamber* is a lymph space containing the aqueous humor and situated between the cornea in front and the lens, suspensory ligament, and ciliary body behind. The iris partially divides this chamber into an *anterior* and a *posterior* chamber, which are continuous through the pupil. The *anterior* chamber is bounded in front by the cornea and behind by the iris; the *posterior* chamber is a narrow chink between the iris, ciliary processes, and the lens.

6. *Organs in the peritoneal cavity:* Liver, stomach, spleen, part of duodenum, jejunum, ileum, transverse colon, sigmoid flexure, upper part of rectum, part of bladder, uterus, and ovaries.

7. *Articulation* is a joint, or connection between contiguous parts of the recent human skeleton.

Symphysis is a joint in which there is only very slight movement, and in which the contiguous bones are connected by a broad disc of fibrocartilage.

Synchondrosis is an immovable joint in which the contiguous bones are connected by hyaline cartilage.

8. *The ductless glands* are: Spleen, thyroid, parathyroids, thymus, suprarenals, carotid and coccygeal glands, and pituitary body. The *spleen* is situated in the back part of the left hypochondriac and epigastric regions. The *thyroid* is situated on the sides and in front of the upper part of the trachea, and extending upwards on each side of the larynx. The *parathyroids* are near (and behind) the thyroid. The *thymus* is (in early life) in the superior mediastinum and neck, reaching from the fourth costal cartilage to the lower border of the thyroid. The *suprarenals* are in the back part of the abdominal cavity, behind the peritoneum, one on the upper extremity of each kidney, and slightly also on the inner and anterior surfaces. The *carotid gland* is situated generally in the carotid bifurcation. The *coccygeal gland* lies near the tip of the coccyx, and in connection with the middle sacral artery. The *pituitary body* lies at the base of the brain, in the sella turcica of the sphenoid bone.

9. The *prostate gland* is a glandular structure surrounding the neck of the bladder and the first part of the penis. *Cowper's glands* are situated between the two layers of the deep perineal fascia, on either side of the membranous urethra. *Bartholin's glands* are small glands situated one on each side of the entrance to the vagina; it is analogous to Cowper's gland in the male. *Carunculæ myrtiformes* are the remains of the hymen after rupture of the latter structure.

10. *In a cross section of the body at the seventh cervical vertebra,* the following structures would be divided: Cricoid cartilage, lateral lobes of the thyroid body, trachea, esophagus, common carotid artery, internal jugular vein, pneumogastric nerve, sympathetic nerve, phrenic nerve, platysma myoides, longus colli, sternomastoid, vertebral vessels, trapezius, splenius, complexus, levator anguli scapulæ, scalenus anticus and medius, sternohyoid and sternothyroid.

At the sacro-coccygeal juncture: Rectum, small intestine, bladder.

PHYSIOLOGY.

1. *Metabolism* is the name given to the sum of the chemical changes which take place in the body and the tissues during life. Such changes as are constructive are called *anabolic;* such as are disruptive or destructive are called *catabolic.*

2. *Fats* are neutral bodies, consisting of triolein, tripalmitin, and tristearin. They all have glycerin for a base in combination with oleic, palmitic or stearic acid. They are derived from both animal and vegetable foods.

Fats are digested by the gastric juice dissolving the connective tissue and setting free the fat, which latter is emulsified in the small intestine by the steapsin of the pancreatic juice, and then enters the lacteals. It is also believed that fat is not absorbed as fat, but as glycerine and fatty acid or soap. From the lacteals it is conveyed to the thoracic duct, thence to the venous circulation. A little is also saponified and enters the portal vein.

3. *Normal fresh urine* consists of: Water, urea, uric acid, urates, hippuric acid, xanthin, hypoxanthin, creatin, creatinin, extractives; sulphates, chlorides, and phosphates of sodium and potassium; phosphates of magnesium and calcium; nitrogen and carbon dioxide.

4. The *first sound* of the heart is heard best at the site of the apex beat; its cause is not settled, but the following are supposed to be causatory factors: (1) The vibration and closure of the auriculoventricular valves, (2) the muscular sound produced by the contraction of the ventricles, and (3) the cardiac impulse against the chest wall. The *second sound* is heard best at the junction of the third right costal cartilage with the sternum; it is caused by the vibration due to the closure of the semilunar valves.

5. By *normal blood pressure* is meant the pressure that the blood exerts (during health) against the wall of the vessel in which it is contained. It is ascertained by a manometer.

6. The normal temperature of the body is *maintained* by the thermotactic center in the brain and cord keeping an equilibrium between the heat gained or produced in the body and the heat lost. Heat is *gained* to the body by (1) the muscles, during contraction; (2) the secreting glands; (3) the brain, during mental activity; and (4) by the ingestion of food and hot liquids.

Heat is *lost* to the body by (1) the skin, through evaporation, radiation, and conduction; (2) the lungs; and (3) the excretions (feces and urine).

7. The *functions of the liver* are: (1) The secretion of bile; (2) the formation of glycogen; (3) the formation of urea and uric acid; (4) the manufacture of heat; (5) the conversion of poisonous and harmful substances into inert material.

8. Proteins are nitrogenous organic substances, very complex, of unknown constitution, made up of carbon, hydrogen, oxygen, nitrogen, and generally sulphur; they may also contain iron, phosphorus, or some other element. They are acted upon by the pepsin of the gastric juice and the trypsin of the pancreatic juice.

9. *Respiration* is the process by which an interchange of gases takes place in the lungs; so that oxygen is introduced and carried to the tissues, and carbon dioxide is expelled.

The changes produced in the *air* by respiration are:

	INSPIRED AIR.	EXPIRED AIR.
Oxygen	21 per cent.	16.6 per cent.
Nitrogen	79 per cent.	79 per cent.
Carbon dioxide ..	0.04 per cent.	4.4 per cent.
Other gases	Rare.	Often present.
Watery vapor.....	Variable.	Saturated.
Temperature	Variable.	That of the body.
Volume	Varies.	Diminished.
Bacteria	Always present.	None.
Dust	Always present.	None.

"Respiration is carried on under ordinary circumstances by the diaphragm and external intercostals enlarging the chest and sucking air into the lungs, followed almost immediately by the recoil of the elastic lungs and ribs forcing out the air so inspired. But when there is a more than ordinary venous condition of blood in the system greater efforts must be made to supply the lungs with oxygen, and muscles not ordinarily employed in the effort must be brought into play. The arms and scapulæ are fixed by seizing hold of some object, and by bringing into action the trapezius, levator anguli scapulæ and rhomboidei, so as to make firm attachments for serratus magnus, pectorales, and latissimus in their efforts to raise the ribs. Labored expiration in like manner brings extra muscles into play. In labored respiration the nostrils are expanded by the dilatores naris during inspiration, and resume their original size during expiration. The glottis is widely open during inspiration, while it is narrowed during expiration. These movements of the glottis occur during ordinary breathing, but are exaggerated during difficult breathing."

"Breathing is a reflex act, capable of being modified by the will. The nerve-center is situated in the medulla, the *afferent* nerves are the vagi; the *efferent* nerves are the phrenics, intercostals, etc. Respiration continues in the absence of consciousness and after the removal of the brain about the medulla; but destruction of a certain small portion of the medulla below the vasomotor center causes the movements at once to cease. This spot is called *nœud vital.* The center is influenced by impulses from without or within—a dash of cold water in the face, a cold bath, an emotion, venous blood in the pulmonary vessels, all call it into action. The center is probably automatic as well as reflex, section of the vagi, thereby interrupting the channel by which the afferent impulses reach it from the lungs, while interfering with the respiratory act does not stop its action. Automatic impulses descend from the center along the efferent nerves. Probably the venous blood circulating through the center itself supplies the stimulus. (Ashby's *Physiology.*)

10. *Leucocytes* are the colorless blood corpuscles. They are *composed* of water and solids (proteids, leuconuclein, lecithin, histon, etc.). They differ much in appearance,

and are divided into (1) small mononuclear leucocytes, or lymphocytes, (2) large mononuclear, (3) transitional, (4) polynuclear, or polymorphonuclear, or neutrophile, and (5) eosinophile. They are all more or less granular, particularly the last two varieties named. They are probably formed in the spleen, lymphatic glands, and lymphoid tissues. Their fate is uncertain; it has been asserted that they are converted into red blood cells; they play a part in the formation of fibrin ferment; they are sometimes converted into pus cells. Their *functions* are (1) to serve as a protection to the body from the incursions of pathogenic microorganisms; (2) they take some part in the process of the coagulation of the blood; (3) they aid in the absorption of fats and peptones from the intestine, and (4) they help to maintain the proper proteid content of the blood plasma.

CHEMISTRY.

1. The syllables *ous* and *ic* are used: (1) In naming acids, the one containing the more oxygen ending in *ic;* and the one containing less oxygen ending in *ous.* (2) In binary compounds *ous* denotes the compound containing relatively less of the more electronegative element than is found in the *ic* compound.

The syllables *ate* and *ite* denote salts; *ate* salts are derived from *ic* acids, and *ite* salts from *ous* acids.

2. $Na_2CO_3 + CaCl_2 = 2NaCl + CaCO_3$.

3. *Potassium* colors the Bunsen flame violet; *sodium* colors the Bunsen flame yellow; *copper* salts give a green color to the Bunsen flame (except the chloride, which gives a blue color).

4. *Treatment of carbolic acid poisoning:* Administer white of egg in water, or milk, or sodium sulphate in solution, or alcohol and water; follow by lavage.

5. *Symptoms of poisoning by belladonna:* "In the first stage, that of delirium, there are dryness of the throat, thirst, difficulty of deglutition and spasms upon swallowing liquids, face at first pale, afterwards highly reddened, pulse extremely rapid, eyes prominent; brilliant, with widely dilated pupils, complete paralysis of accommodation, disturbances of vision, attacks of giddiness and vertigo, with severe headache, followed by delirium, occasionally silent or muttering, but usually violent, noisy, and destructive, accompanied by the most fantastic delusions and hallucinations. Usually the urine is retained, and the body temperature is above the normal. The delirium gradually subsides, and the second stage, that of coma, is established, with slow, stertorous respiration, and gradually failing pulse, until death occurs from respiratory or cardiac paralysis, or sometimes in an attack of syncope during apparent amelioration."

Treatment: "Lavage of the stomach; morphine may be given cautiously during the period of violent excitement. Maintain respiration; strong coffee by the mouth or rectum is beneficial. Pilocarpine may be given, in not too large doses, to stimulate the secretion of saliva."—From Witthaus' *Essentials of Chemistry.*

6. *Symptoms of poisoning by cocaine:* Pain and fullness in the head, pulse at first quick but later feeble and slow; extremities cold. The symptoms are not constant.

Treatment consists in the administration of ammonia or coffee; morphine, strychnine, chloroform, and ether have all been suggested; artificial respiration may be necessary. The safest plan is to treat whatever symptoms are present.

7. In *chyluria,* the urine contains chyle, and is milky in appearance, or it may have a reddish tinge due to the admixture of a little blood. The milky appearance is due to an emulsion of fat. The condition is generally due to *filaria;* there is also a non-parasitic chyluria of unknown etiology and pathology.

"Under the microscope chylous urine shows no fat globules, or only a few, whereas urine containing milk is crowded with them. When chylous urine is shaken with ether the fat is extracted and the urine is left clear, or nearly so; when urine to which milk has been added is dealt with in the same way it is scarcely altered." (Mann's *Physiology and Pathology of the Urine.*)

8. *Reinsch's test for arsenic* is as follows: To the suspected fluid add a little pure HCl; suspend in the fluid a small strip of bright copper foil, and boil. If a deposit forms on the copper, remove the copper, wash it with pure water, dry on filter paper, but be careful not to rub off the deposit. Coil up the copper, and put it into a clean, dry glass tube, open at both ends, and apply heat at the part where the copper is. If arsenic is present there will appear in the cold part of the tube a mirror, which will be found on microscopical examination to consist of octahedral crystals of arsenic trioxide.

9. *Physical properties of phosphorus: Yellow* phosphorus is a yellowish translucent solid of the consistency of wax; below 32° F. it is brittle; at about 112° F. it fuses; at about 550° F. it boils; its vapor is colorless; exposed to air it gives off white fumes and produces ozone; it is luminous in the dark; it is insoluble in water, slightly soluble in alcohol, soluble in carbon disulphide and in the fixed and volatile oils. The *red* variety is not soluble in the solvents of the yellow variety, and is not luminous at ordinary temperature.

MATERIA MEDICA AND THERAPEUTICS.

1. *Chemical incompatibility* may result in: (1) Production of a poison; (2) explosion; (3) double decomposition. In the following prescription double decomposition takes place, lead sulphate being precipitated, and zinc acetate remaining in solution:

℞. Plumbi acetatis ʒss
Zinci sulphatis gr. xv
Aquæ qs. ad ʒiv. Misce
Sig.: Use as an injection.

2. Cold reduces temperature by abstracting heat. It is best applied in the form of a bath, cold sponging, or ice-cap.

3.

CLASS.	EXAMPLE.	DOSE.
1. Emetic	Apomorphine hydrochloride	⅛ grain
2. Antispasmodic	Spiritus ætheris compositus	ʒj
3. Hypnotic	Choral hydrate	gr. xv
4. Expectorant	Syrup of squill	ʒss to ʒj

4. *Five antiseptics:* (1) Corrosive sublimate, 1:3,000 to 1:100; (2) carbolic acid, 1:40 to 1:20; (3) alcohol, 70 per cent., (4) lysol, 1 to 3 per cent.; (5) iodine, 1 per cent.

5. *Mineral tonics:* Iron, arsenic, mercury, calcium.

℞. Tincture ferri chloridi
Acidi phosphorici diluti *aa* ʒss
Syrupi simplicis q.s. ad ʒiij. Misce
Signa: One teaspoonful three times a day.

6. As a general rule, ether would be the anesthetic of choice. But chloroform may be used: (1) in hot climates; (2) when large numbers of persons have to be rapidly anesthetized; (3) in brain surgery; (4) in labor; (5) in patients who are known to take ether badly; and (6) in the conditions mentioned below, in which ether is contraindicated.

The following contraindications for ether and chloroform are from Hare's *Practical Therapeutics: "Ether* should not be used by inhalation in bronchitis or acute nephritis because of its irritant properties; in peritonitis or gastritis, because it is apt to induce vomiting; in aneurysm or in the presence of marked vascular atheroma, because it may rupture a blood-vessel by raising arterial pressure; nor in diabetes, lest it produce diabetic coma; and if anemia is present and an examination of the blood shows that the hemoglobin is below 50 per cent., the use of the drug should be avoided if possible.

"*Chloroform* is not to be used in cases of fatty heart or dilatation of the heart, in those with a known idiosyncrasy, nor in the so-called lymphatic persons with overgrowth of lymphoid tissues, as, for example, adenoids. In the latter case it is particularly apt to cause sudden death. In valvular disease of the heart chloroform may be used with caution, although ether is preferable. Given a case of valvular disease that must be subjected to operation, the chances are bettered with an anesthetic than without it, as the pain and mental shock are worse for the heart than is the anesthetic."

7. ERGOT. *Therapeutic indications:* To promote uterine contractions during third stage of labor; fibroids, menorrhagia, postpartum hemorrhage. Some forms of amenorrhea and dysmenorrhea, dysentery, arterial hemorrhage, congestive headache, laxity of sphincters, of bladder or rectum, hemorrhoids, aneurysm, diabetes, urinary incontinence, direct paralysis of the sphincter vesicæ, atonic spermatorrhea.

Contraindications: During the first stage of labor, and in anemia of the brain or spinal cord.

8. DIGITALIS. *Habitat:* Southern and central Europe. *Physiological effects:* It is a gastrointestinal irritant; it slows the rate of the heart, prolongs diastole, increases the force of the heart, contracts the blood-vessels, and causes a rise in blood pressure; it also acts as a diuretic.

9. IN MALARIA: (1) *Quinine* destroys the plasmodium malariæ. (2) *Warburg's tincture* acts by virtue of the quinine which it contains. (3) *Methylene blue* is believed by some to destroy the malarial parasite.

10. The *alkaline method in the treatment of rheumatism* consists in: The internal administration of sufficiently large doses of alkaline salts to render the urine quickly alkaline; in maintaining this alkaline reaction as long as

the rheumatic symptoms continue; and in gradually allowing a neutral or acid reaction to return by gradually diminishing the alkalies as the symptoms decline. It is claimed for this method that, as the alkalies begin to exhibit their action on the system, the whole aspect of the case becomes more favorable, the general distress being alleviated, the temperature falling, and the local symptoms relieved; that these favorable effects continue to become more and more marked, until the rheumatic condition has disappeared; that the average duration of the attack is greatly shortened; and that the proportion of visceral affections is much reduced. (From Quain's *Dictionary of Medicine.*)

OBSTETRICS.

1. *Positive signs of pregnancy:* (1) Hearing the fetal heart sound; (2) active movement of the fetus; (3) ballottement; (4) outlining the fetus in whole or part by palpation; and (5) the umbilical or funic souffle.

Doubtful signs of pregnancy: (1) Progressive enlargement of the uterus; (2) Hegar's sign; (3) Braxton Hicks' sign; (4) uterine murmur; (5) cessation of menstruation; (6) changes in the breasts; (7) discoloration of the vagina and cervix; (8) pigmentation and striæ; (9) morning sickness.

Subjective signs of pregnancy, in the order of their appearance, are: Cessation of menstruation, morning sickness, increased frequency of urination, active fetal movements.

Objective signs of pregnancy, in the order of their appearance, are: Softening of the cervix, changes in the mammary glands, discoloration of the vulva and vagina, pulsation in the vaginal vault, Hegar's sign, active fetal movements, ballottement, palpation of the fetus, intermittent uterine contractions, hearing the fetal heartbeat, rate of growth of the uterine tumor.

2. *The fetal circulation:* "The arterial blood coming from the placenta to the fetus travels along the umbilical vein to the liver. After giving off several branches to the left lobe it divides into two streams, the larger joining the portal vein and thus entering the liver, the smaller passing directly into the inferior vena cava through the *ductus venosus.* In the inferior vena cava the blood carried by the hepatic veins and ductus venosus mixes with the blood which has circulated through the lower extremities. On entering the right auricle the blood of the inferior vena cava is directed by the Eustachian valve, through the foramen ovale into the left auricle, and from thence into the left ventricle. The left ventricle forces it into the aorta, and it is then distributed to the head and upper extremities, a small quantity only passing into the descending aorta. The blood which has circulated through the head and upper extremities returns to the heart along the superior vena cava, the blood then passing into the right ventricle and pulmonary artery. A small part of the blood in the pulmonary artery is conveyed to the lungs, but the major part passes through the ductus arteriosus into the aorta at the commencement of the descending portion. This blood is distributed to the lower extremities, a certain portion of it entering the hypogastric arteries and being conveyed to the placenta." (Ashby's *Physiology.*)

3. *Pelvimetry* means measuring the pelvis. For external pelvimetry some modification of Baudelocque's pelvimeter is generally used. In external pelvimetry four measurements are generally taken: (1) between the anterior superior spines of the ileum, normally about ten and a quarter inches; (2) between the external edges of the iliac crests, normally about eleven inches; (3) between the heads of the two great trochanters, normally about twelve and a quarter inches; and (4) between the spinous process of the last lumbar vertebra and the upper margin of the anterior surface of the symphysis pubis, normally about eight inches.

The diameters and measurements of the female pelvis are easily remembered from the following table:

	ANTERO-POSTERIOR.	OBLIQUE.	TRANSVERSE.
Brim	4 inches.	4½ inches.	5 inches.
Mid-plane	4½ inches.	4½ inches.	4½ inches.
Outlet	5 inches.	4½ inches.	4 inches.

4. *Treatment of placenta prævia:* Stop the hemorrhage by a vaginal tampon; this must be tight and thorough. *Accouchement forcé* is indicated; this consists of dilatation of the cervix, version, and immediate extraction of the child.

5. PUERPERAL ECLAMPSIA is an acute morbid condition occurring during pregnancy, labor, or the puerperal state, and is characterized by tonic and clonic convulsions, which affect first the voluntary and then the involuntary muscles; there is total loss of consciousness, which tends either to coma or to sleep, and the condition may terminate in recovery or death. *Etiology:* Uremia, albuminuria, imperfect elimination of carbon dioxide by the lungs, medicinal poisons, septic infection; predisposing causes are renal disease and imperfect elimination by the skin, bowels, and kidneys. *Symptoms:* Headache, nausea, and vomiting, epigastric pain, vertigo, ringing in the ears, flashes of light or darkness, double vision, blindness, deafness, mental disturbance, defective memory, somnolence; symptoms easily explained by the circulation of toxic blood through the nerve centers. These may be preceded by lassitude, and accompanied by constipation, or by diarrhea. Headache is perhaps the most significant and common warning symptom. In bad cases the urine is reduced in quantity (almost suppressed), very dark in color, its albumin greatly increased, so that it becomes solid on boiling. Next comes the final catastrophe of convulsions. The convulsive fit begins with twitching of the facial muscles, rolling and fixation of the eyeballs, puckering of the lips, fixation of the jaws, protrusion of the tongue, etc., soon followed by violent spasms of the muscles of the trunk and limbs, including those of respiration; hence lividity of the face and stertorous breathing, biting of the tongue, opisthotonos, etc. The fit lasts fifteen or twenty seconds, ending in partial or complete coma, possibly death; or consciousness may return, to be followed by other convulsions. For *preventive treatment:* (1) The amount of nitrogeneous food should be diminished to a minimum; (2) the production and absorption of poisonous materials in the intestines and body tissues should be limited and their elimination should be aided by improving the action of the bowels, the kidneys, the liver, the skin, and the lungs; (3) the source of the fetal metabolic products and the peripheral irritation in the uterus should, if necessary, be removed by evacuating that organ. The *curative treatment includes:* (1) Controlling the convulsions (by chloroform, veratrum, or chloral); (2) elimination of the poison or poisons which are presumed to cause the convulsions; (3) emptying the uterus under deep anesthesia, by some method that is rapid and that will cause as little injury to the woman as possible.

6. OPHTHALMIA NEONATORUM.—*Causes:* The gonococcus or some other pyogenic microorganism; the secretions of the mother contain the infecting agent, and transmission may occur directly during parturition, or indirectly by the fingers of physician or nurse, cloths, instruments, etc. *Symptoms:* Swollen eyelids, with copious purulent discharge; ulceration of the cornea may ensue. *Prophylaxis:* Whenever there is the possibility of infection, or in every case, wash the eyelids of the newborn child with clean warm water, and drop on the cornea of each eye one drop of a 1 per cent. solution of nitrate of silver, immediately after birth. *Treatment:* Wash the eyes carefully every half hour with a saturated solution of boric acid; pus must not be allowed to accumulate. Two drops of a 2 per cent. solution of nitrate of silver must also be dropped on to the cornea every night and morning. The eyes must be covered with a light, cold, wet compress. The patient must be isolated, and all cloths and compresses used must be burnt.

7. *Care of New-born Babe.*—"After the cord has been ligated and cut, the eyes should be cleansed with a saturated solution of boric acid, after which, if there is any vaginal discharge from the mother, 1 or 2 drops of a 1% solution of silver nitrate should be instilled in each eye. The mouth should also be gently cleansed, for which may be used a soft cloth and boiled water. The vernix caseosa should be removed by means of some oily substance. The baby should be bathed in water at 100° F., carefully dried, and the cord dusted with some antiseptic powder. Sponging should be practised for 10 days, after which a full tub-bath at 98° F. should be given daily for 6 months. The temperature may then be reduced to 95° F., and at the end of a year to 90° F. The binder and clothing should be woolen. If the infant's extremities are blue or cold, external heat should be applied. The diapers should be made of flannel, and dusting-powders should be used to prevent chafing. An infant may be taken out-of-doors in summer when 1 week old, and in winter on pleasant days at 3 months of age. The new-born infant should sleep about 22 hours out of a possible 24, gradually diminishing this until at 2 years the child should sleep at least 12 hours of the day, and at 3 years not less than 11. The sleeping-room should be well ventilated.

In the care of premature or feeble infants there should be secured a temperature of 95° F., or slightly lower about the child, rigorous bathing should be avoided, and but little clothing applied. If the mother is unable properly to

nourish the child at the breast, artificial feeding must be commenced almost immediately."—(Gould and Pyle's *Pocket-Cyclopedia.*)

8. *Treatment of Postpartum Hemorrhage.*—Grasp the uterus at once, through the abdominal wall, and massage it firmly. Anything in the uterus should at once be cleaned out. Pass one hand into the uterus, and with the other on the outside make firm pressure. A hypodermic of ergotin, or ergot can be given by an assistant. An intrauterine douche of hot sterilized water (about 115° F.) may be given. Sometimes a very thorough packing and plugging of gauze of uterus and vagina may be necessary. Whatever is done must be done promptly; and everything likely to be needed for this emergency should be prepared beforehand in every labor.

9. *Involution* is the process by which the uterus, after labor, returns as far as possible to its original size.

Causes for Subinvolution.—Lacerations of the cervix; absorption of septic products; mismanagement of the convalescent stage of the puerperium, chiefly too early rising; tedious labor; misplacement of the uterus; retained clots or membranes; tumors of the uterus.

10. The *menopause* is the period when menstruation ceases. The symptoms of the menopause are referable to two stages; a stage of menstrual irregularity preceding the cessation of the menses, and a post-cessation stage of variable systemic disturbances. In normal or nearly normal cases the irregularities are not excessive; the systemic disturbances are slight. There is a period of unstable equilibrium. The woman may at times be unusually capricious and emotional; yet she passes through this physiological crisis with only a few minor disturbances. She may have the characteristic vasomotor flushes, perspiration, vertigo, somnolence, numbness, and faintness. The menstrual function ceases as it began, and other psychic disturbances are common in the abnormal cases, and may be exaggerated. The menstrual deviations vary in wide limits. The flow may gradually decrease and come at lengthening intervals until it altogether ceases; it may occur at short intervals or become continuous; it may become so excessive as almost to amount to dangerous hemorrhage; or life may be jeopardized by a slow, continuous drain. There is an increased tendency to malignant disease of the uterus and breasts during this period. The excessive fear of this may prey injuriously on the mind of the woman.—(From Dudley's *Gynecology.*)

GYNECOLOGY.

1. In *Sims' position*, the patient lies on her left side, with her head on a low pillow and turned on the left cheek. The hips should be at the left hand corner of the table. The knees are drawn up to the chest, the right one more so than the left. The left arm hangs down behind the body. The foot of the table should be a little higher than the head.

2. *Menstruation* is a periodic disturbance in the female, characterized by a bloody discharge from the uterine cavity; it occurs periodically during the time of the woman's sexual activity, but is temporarily suspended during pregnancy and early lactation. The relation existing between ovulation and menstruation is not known. The two processes are usually coexistent, but they may be independent of each other. The following theories have been held: (1) Menstruation is dependent upon ovulation; (2) ovulation is dependent upon menstruation; (3) they are independent of each other; (4) they both depend upon some other (at present unknown) cause.

3. Amenorrhea is the absence of menstruation. It is *physiological:* Before puberty, during pregnancy and early lactation, and after the menopause. Otherwise, it is *pathological*, and may be due to: Absence or imperfect development of the generative organs; also to stenosis, obstructions, or atresia of the genital tract; also to operative removal of the uterus or its appendages. Other causative factors are: Acute infectious diseases, anemia, chlorosis, obesity, drug habits, alcoholism, overstudy, lack of exercise, exposure to cold and various emotional causes. When due to anemia, chlorosis, etc., it is said to be *constitutional.* Amenorrhea is also called *primary* when the flow has never been established; *secondary*, when it is suppressed.

4. Metrorrhagia. *Causes.*—General diseases (such as scorbutus, hemophilia, acute fevers, nephritis, hepatic cirrhosis, heart disease); salpingitis, ovaritis, ovarian tumors, endometritis, endocervicitis, metritis; fibroids, sarcoma, carcinoma or polyps of uterus; prolapsed, retroflexed, or retroverted uterus; subinvolution. *Symptoms:* Hemorrhage from the uterus at other times than the menstrual period. *Treatment:* Ascertain and remove the cause if possible. Hot vaginal douches, ergot, astringents, and tampons have all been recommended. In case of malignant disease, hysterectomy may be necessary.

5. *Vaginismus* is a condition of painful and spasmodic contraction of the vaginal orifice, which renders coitus either painful or altogether impossible. The slightest touch causes painful spasms, and examination may be impossible without an anesthetic. Its *causes* are irritable hymen, ulcer, or fissure anywhere in the immediate vicinity, urethral caruncle, carunculæ myrtiformes, a long perineum with vaginal orifice placed too anteriorly. The *treatment* consists in removing the cause when possible, tonics and general constitutional treatment, dilatation of the vaginal orifice; local application of a 5 per cent. solution of cocaine will relieve the hyperesthesia and allow coitus. The condition is sometimes incurable.

6. The most frequent of the uterine displacements are retroflexion and retroversion.

Retroflexion. *Treatment:* If there are no adhesions, the flexion should be corrected by digital manipulation and a pessary introduced; hysteropexy may be necessary.

Retroversion. *Treatment:* Remove the cause, if possible; replace the uterus and keep it in position by pessaries, tampons, and knee-chest position; pelvic massage and vaginal douches; proper hygiene, particular attention being paid to the bowels, clothing, and exercise. *Curative treatment:* The choice lies between ventral suspension of the uterus and shortening of the round ligaments.

7. *Diagnostic points in small uterine fibroids.*—Menorrhagia or metrorrhagia; often dilating the cervical canal and exploring the uterus is the only way of proving or disproving the existence of a fibroid. Pain, discomfort, leucorrhea, and lengthening of the cervical canal may also be present.

8. Hemorrhage, leucorrhea, and pain are nearly always present. Later on there may be an offensive odor.

9. Acute Cystitis.—(*a*) *Etiology:* Various pathogenic bacteria, foreign bodies, traumatism, retention of urine, unclean catheters, cold.

(*b*) *Symptoms:* Frequent urination, with tenesmus and a burning sensation in the urethra, later on pain in the bladder, hematuria, and the urine contains pus and epithelial cells. Chills, rapid pulse, fever, and headache may also be present.

(*c*) *Treatment* includes: Rest, administration of plenty of cold water or milk, diuretics, bland and mild food, laxatives, hot sitz baths or vaginal douches, irrigation of the bladder with antiseptic solution followed by solution of nitrate of silver.

10. Movable kidneys. *Symptoms:* (1) Pain.—Uncomfortable sense of weight or movement in the loin. Dragging pain in the abdomen and back, worse during the menstrual periods. Occasional crisis of acute agony if the pedicle becomes twisted. (2) Gastrointestinal symptoms.—Dyspepsia and dilatation of the stomach possibly due to a kinking of the duodenum. Colic with constipation, or rarely diarrhea, from a dragging on the colon. Violent gastric crises of colic and vomiting from a dragging on a renal pedicle. Transient jaundice. (3) Urinary symptoms.—Slight albuminuria, pyuria, or hematuria from pyelitis or congestion. Polyuria, with ardent desire to micturate. Pain and scanty micturition, alternating with cessation of pain and polyuria, points to kinking of the ureter and hydronephrosis. Acute pain, passage of albumin, blood, and casts, point to torsion of the renal pedicle. (4) Nerve symptoms.—Hysteria, neurasthenia, melancholia, and hypochondriasis. Often worse during menstruation.

Treatment: (1) Palliative.—Indicated in: (1) Mild cases; (2) cases associated with hysteria or hypochondriasis; (3) general enteroptosis. Consists of: Rest, fattening diet. Belt with pad over kidney region; must be applied when the kidney is replaced.

(2) Radical.—(1) Nephropexy: When symptoms are severe and not relieved by rest and belts. When hydronephrosis is present. When renal crises occur. Result: 1-2 per cent. die; 90 per cent. are cured of the pain; 50 per cent. are cured of gastrointestinal symptoms. (2) Nephrectomy: Only when the kidney is disorganized by hydronephrosis or other disease. (From Grove's *Synopsis of Surgery.*)

SURGERY.

1. Cholelithiasis.—*Etiology:* Sedentary habits, catarrh of stomach and duodenum, microorganisms (*Bacillus coli communis*), obstructions to outflow of bile. *Symptoms:* "While the calculus remains free in the gallbladder, usually there are no symptoms. Impaction of the stone in the common duct gives rise to intermittent jaundice, following sharp pain in the right hypochon-

driac or epigastric region, frequently radiating toward the right scapula, nausea, vomiting, sweating, depression, and often intermittent fever (Charcot's intermittent fever). When the stone is impacted in the cystic duct, jaundice is less common, but the hepatic colic is severe, and dropsy of the gall-bladder may occur. The diagnostic points are the age, sex, history of previous attack, with jaundice and intermittent fever, location of the pain, dark, amber-colored urine, containing bile, and sometimes the finding of the stone in the feces."

Treatment "includes the relief of pain by morphine (gr. ¼) and atropine (gr. 1/125), hypodermically, inhalations of chloroform, hot applications, and blisters over the seat of pain, and, later, a saline purgative. During the interval the diet should be largely liquid, and drugs such as sodium phosphate, sweet oil, chloroform, piperazin, and mineral waters should be administered. Constipation should be avoided by giving fluid extract of cascara (5½) and glycerin (5½) every night. Lavage and rectal irrigation may be practised. If the attacks become more frequent and severe and medical treatment fails, surgical interference (cholecystotomy) is indicated." (Gould and Pyle's *Pocket Cyclopedia.*)

3. "From carcinomata, sarcomata are to be differentiated by the absence, as a rule, of lymphatic involvement, fixation of the skin and retromammary tissues, and retraction of the nipple. The nipple, though often displaced, is never retracted as it is in carcinoma." (Rodman's *Diseases of the Breast.*)

4 *Laceration of the Middle Meningeal Artery—Symptoms.*—"When not obscured by some other cerebral lesion, the typical symptoms are—(1) temporary concussion; (2) a lucid interval of a few minutes to a few hours; (3) gradually increasing drowsiness ending in coma. If the hemorrhage is rapid or there is cerebral laceration as well, there may be no interval of consciousness. In addition there may be, from pressure on the motor area, twitching of the corresponding parts followed by paralysis. The pupil on the injured side becomes first fixed and dilated, the other following. When the coma is well marked the pulse is slow and full, and the breathing is stertorous. When the brain is lacerated there are alternating tonic contraction and relaxation of the muscles supplied from the injured area.

"*Treatment* consists in trephining, removing the blood-clot, and stopping the bleeding. A flap is turned down, and a trephine hole made over a spot 1½ inches above and behind the external angular process exposes the anterior branch. After the blood-clot is removed the bleeding-point is searched for and tied; if it is not seen, more bone must be clipped away. If the bleeding comes from a canal in the bone, it may be stopped with gauze, sponge, or aseptic wax. If the brain then expands, the bone may be replaced and the wound stitched up without drainage; if not, the bone must not be replaced, and the wound should be drained for twenty-four hours. The posterior branch can be reached by a hole made just below the parietal eminence."—(*Aids to Surgery.*)

5. Torticollis.—*Etiology:* Cold, rheumatism, cerebral irritation, intrauterine lesion, paralysis, hysteria. *Treatment:* Remove the cause, treat any neurosis, give antispasmodics; stretch or sever the spinal accessory nerve or posterior cervical nerves; massage, tenotomy of sternomastoid.

6. *Varieties of hip joint dislocation*—(1) Backward on to the dorsum ilii; (2) on to the sciatic notch; (3) on to the obturator foramen; (4) on to the pubis.

7. Fistula in Ano.—*Classification:* There are four varieties: (1) The *complete*, which opens into the rectum internally and on the perineum externally; (2) the *external incomplete*, or *blind external*, which opens on the perineum but not into the rectum; (3) the *internal incomplete* or *blind internal*, which opens into the rectum but not on the perineum; (4) the *horseshoe* fistula, which extends around the rectum and opens on each side. The internal opening is generally between the two sphincters, but may be above the internal sphincter and below the external sphincter. There may be several pockets or side tracts extending in different directions.

Treatment: This consists in "the conversion of the fistula into an open wound so that it may heal from the bottom. A grooved director is passed through the fistula into the rectum, and the overlying tissues severed with a bistoury. The sphincter should never be cut more than once, because of the danger of incontinence. All branching sinuses likewise should be opened, and all fibrous tissue, with undermined skin, cut away with scissors. The bleeding is then checked, and the wound packed with iodoform gauze. If the fistula is lined with mucous membrane it must be completely excised. A blind external fistula may be excised and the wound sutured. A blind internal fistula may be converted into a complete one and treated as above. The bowels are confined for the first three or four days, and the wound dressed after each defecation, being irrigated with creolin and repacked with iodoform gauze." (Stewart's *Surgery.*)

8. See above Gynecology, Question 10.

9. *Fracture by contre-coup* is a fracture of the skull on the opposite side of the head to that which receives the blow.

10. Floating Semilunar Cartilage of the Knee Joint.—*Symptoms:* "Violent pain in the knee joint, chiefly on the inner side over the lateral ligament. The knee is locked in a semi-flexed position. Synovial effusion with its usual signs appears within a few hours. Later, and in the absence of proper treatment, recurrent attacks of synovitis often occur in any action of flexion and rotation of the knee. Tenderness is most marked on pressure over the tibial attachment of the internal lateral ligament. Very rarely a lump or gap can be felt in the position of the cartilage."

Treatment: "Reduction by flexion and extension of the joint. Immobilization on a back-splint for six weeks, followed by firm bandaging for three months. This treatment should be adopted in all recent cases occurring for the first time. Operation (for all recurrent cases): If thorough immobilization has been neglected at first, it is useless later. Incision in a transverse direction over the edge of the affected cartilage. Open the joint. Remove completely all injured or displaced parts of the cartilage. Cut any tags of hypertrophied synovial membrane. Close without drainage. Retentive apparatus (when operation is refused or undesirable in chronic cases): The mechanism embraces the joint and while allowing flexion does not permit of any rotation." (Grove's *Synopsis of Surgery.*)

Books Received.

The Medical Record *is pleased to receive all new publications which may be sent to it, and an acknowledgment will promptly be made of their receipt under this heading, but it must be with the distinct understanding that it is under no obligation to notice or review any publication received by it which in the judgment of its editor will not be of interest to its readers.*

Harelip and Cleft Palate. By James Berry, B.S., F.R.C.S., and T. Percy Legg, M.S., F.R.C.S. 324 pages, with 242 figures; cloth; price $4.00. P. Blakiston's Son & Co., Publishers, Philadelphia.

Text Book of Microscopic Anatomy. By Albert Edward Schafer, LL.D., Sc.D., M.D., F.R.S. 739 pages; illustrated; cloth, with 1,001 engravings and 21 colored plates; price $7.50 net. Longmans, Green & Company, Publishers, New York.

Common Disorders and Diseases of Childhood. Second Edition. By George Frederic Still, M.A., M.D., F.R.C.P. 813 pages; illustrated; cloth; price $5.50. The Oxford University Press, Publishers, New York.

Studies of the Department of Pathology of the College of Physicians and Surgeons Columbia University, New York. Vol. XII. For the Collegiate Years 1909-1911. 209 pages; illustrated; paper.

Baby's Teeth to the Twelfth Year. By Albert Westlake, DD.S. 35 pages; cloth; Mitchell Kennerley, Publisher, New York and London.

Psychotherapy. By James J. Walsh, M.D., Ph.D. 806 pages; cloth. D. Appleton & Company, Publishers, New York.

Outlines of General and Surgical Nursing. By Winifred Frederick Lindsay. 114 pages; cloth. The College Press, Publishers, Loma Linda, Cal.

Traite International de Psychologie Pathologique. By Dr. A. Marie. 1038 pages; illustrated; paper; price 25 francs. Librairie Felix Alcan, Publishers, Paris.

The Healthy Baby. By Roger H. Dennett. 228 pages; cloth; price $1.00 net. The MacMillan Company, Publishers.

Aids to Histology. By Alexander Goodall, M.D., F.R.C.P. 133 pages; illustrated; cloth; price $1.00 net. William Wood & Company, Publishers, New York.

Aids to Ophthalmology. By N. Bishop Harman, M.A., M.B., F.R.C.S. Fifth Edition. 216 pages, with 100 illustrations; cloth; price $1.00 net. William Wood & Company, Publishers, New York.

Gynecological Nursing. By Arthur E. Giles, M.D., B.Sc., F.R.C.S., M.R.C.P. 187 pages, with 41 illustrations; cloth; price $1.50 net. William Wood & Company, Publishers, New York.

Medicolegal Notes.

Testifying as to Effect of Condition.—On the cross-examination of a medical expert witness it is permissible for the purpose of testing his skill and accuracy to ask the witness pertinent hypothetical questions, based on facts having no foundation in the evidence. A plaintiff in a street railway accident had testified that she had sustained certain nervous disorders. A physician who treated her was introduced as a witness by her, and on direct examination testified both to facts relating to her injuries within his knowledge and to matters of expert opinion. On cross-examination he was asked such questions as, assuming that the plaintiff had had fainting spells prior to the accident, and that she had had an attack, or had been suffering for some time before the accident from gallstones and that her complexion was very yellow, if he could tell as a physician whether or not that condition might in any way affect her nervous system. It was held that such cross-examination was admissible.—Conway v. Metropolitan Street Ry. Co., (Mo.) 142 S. W., 1101.

Physician Claiming Privilege Not to Answer.—In an action for a negligent death, a physician testifying for the defendant was asked to state what he had treated the decedent for some five or six years before the accident. He refused to answer, claiming that it would be improper to disclose information acquired by him in his professional capacity. The trial court declined to compel the witness to answer unless there was an express waiver by the plaintiff. No express waiver was made and the question remained unanswered. The New York Appellate Division held that while it was true that the privilege claimed by the physician did not belong to him, but to the patient, who could have waived it, and though technically the physician was claiming a right which he did not possess, yet the refusal of the court to compel him to answer was not reversible error where it did not appear that the evidence sought was material to the question to be determined.—Trieber v. N. Y. & Q. C. Ry. Co., 134 N. Y. Supp., 267.

Privileged Communications—Termination of Relation of Physician and Patient.—The physician who attended the plaintiff suing for injuries received in an accident was, while upon the witness stand, questioned by the defendant as to statements which he had heard the plaintiff make a short time before the trial in regard to his injuries. This was objected to as calling for a privileged communication, and the objection was sustained by the trial court. This ruling was complained of on appeal, for the reason that the relation of physician and patient had terminated a long time before the statements of plaintiff which it was sought to prove, and that, therefore, the question was not privileged. It appeared that two other physicians employed by the defendant were examining the plaintiff, and the plaintiff's former physician was called in by these others. The plaintiff still regarded him as his physician, and objected to his assisting the physicians employed by the defendant in obtaining evidence. The other two physicians testified to what took place upon their examination. It was held that it was not an abuse of discretion to exclude the evidence as privileged, the plaintiff's statements to his former physician being apparently still regarded by him as confidential. —Neice v. Farmers' Co.-op. Creamery Co., Nebraska Supreme Court, 133 N. W. 878.

Burden of Proof of Insanity.—A contestant of a will on the ground of mental incapacity has the burden of overcoming the presumption that everyone is sane. If he shows that the subject of the injury was habitually insane before the paper was attempted to be executed, the burden, it is said, then shifts to the proponent to show that the will was made during a lucid interval. But if habitual fixed insanity prior to the act in question is not shown by the contestant the burden does not pass to the proponent.—Johnston v. Johnston, Alabama Supreme Court, 57 So. 450.

City Hospital Charitable Institution Though Charging Fees.—A petition in a suit against a city alleged that the plaintiff was injured in consequence of being struck by an ambulance which was negligently driven against him while he was in the exercise of due care. It appeared from the remainder of the petition that the ambulance belonged to and was being operated for a public hospital of the city which was under its control through its board of officers. It was also averred that in the maintenance of the hospital the city "charged fees for patients entering therein." It was held that the petition was demurrable, the last averment not being tantamount to an allegation that the city maintained and operated the hospital for pecuniary gain and private profit.—Watson v. City of Atlanta, Georgia Supreme Court, 71 S. E. 684.

Medical Items.

Treatment and Prophylaxis of Scarlatina.—Rouéche states that there is no specific treatment for scarlatina at the present day. Serum treatment for curative or prophylactic purposes has as yet been unsatisfactory. It is necessary to use all hygienic measures to insure the resisting powers of the patient and to apply symptomatic treatment as heeded. The feeding should be a modified milk diet, absolute as long as the fever lasts, and then replaced by soft foods not containing proteids. The use of a salt-free diet, deprived of salt, consisting of potatoes, sugar, butter, and meat without salt, causes lessening of weight, with diuresis and regular elimination of chlorides and urea. If salt is allowed the loss of weight occurs later in the disease. With milk alone the loss of weight is less, and the elimination more regular. As to the treatment of symptoms, too much throat and nose treatment has often been given; this should be confined to mild antiseptic washes gently applied. No antithermic remedies should be used. The best prophylactic measure is absolute isolation in a separate box, if the case is in a hospital, it being found that in general contagious wards diseases are spread to uninfected cases. Everything used by the patient should be disinfected before it leaves the room, and less stress should be laid on the disinfection of the room itself. The length of the isolation should vary with each case. There are cases in which the disease is not contagious after a few weeks, and others in which the contagion remains in the throat and ears for more than forty days. There are carriers of germs who should be pursued and isolated to prevent the spread of the disease.—*Journal de Médecine de Paris.*

Health Reports.—The following cases of and deaths from smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine Hospital Service, during the week ended July 5, 1912:

Places	Date	Cases	Deaths
CHOLERA			
China: Amoy	June 1		..
Swatow	June 1		..
Sporadic cases, occurring in the port.			
India: Bombay	May 27–June 1	27	23
Madras	May 27–June 1	2	1
Indo-China: Saigon	May 14–28	92	68
Siam: Bangkok	Apr. 21–May 18		660
Straits Settlements: Singapore	May 12–18	3	3
YELLOW FEVER			
Brazil: Manaos	June 2–15		6
Pernambuco	Apr. 16–30		3
Mexico: San Juan Bautista	July 7	2	.
Venezuela: Caracas	May 1–31		4
PLAGUE			
Chile: Iquique	May 26–June 9	9	6
China: Amoy	May 20–June 1	46	40
Present in vicinity.			
Hongkong	May 12–18	208	179
Cuba: Habana	July 4	1	.
Egypt: Alexandria	June 5–16	3	1
India: Bombay	May 27–June 1	44	40
Karachi	May 2–June 1	10	12
Indo-China: Saigon	May 14–28	21	14
Java: Passoeroean Residency	May 12–25	16	15
Persia: Bushir	May 12–18	64	61
Porto Rico: San Juan	July 3–10	3	3
Santurce	July 3–8	2	1
Siam: Bangkok	Apr. 21–May 18	.	1
Straits Settlements: Singapore	May 12–18	4	3
Turkey in Asia: Basra	May 20	1	1
Jiddah	May 18	1	.
West Indies: Trinidad			.
Total Apr. 1–June 13: Cases, 11; deaths, 7, including report, p. 1060, Pt. I; 3 of these cases were in Tunapuna.			
SMALLPOX			
Algeria: Algiers	Jan. 1–Apr. 30	17	.
Constantine	Apr. 1–30	4	..
Austria-Hungary: Bohemia	May 12–18	1	..
Galicia	May 12–18	2	..
Brazil: Pernambuco	Apr. 16–30		39
Canada: Montreal	June 23–29	2	.
Quebec	June 16–22	2	..
Winnipeg	June 16–22	2	..
China: Amoy	May 21–27	.	..
Present in vicinity			
Chungking	May 12–18		Present
Hongkong	May 12–18	11	6
Egypt: Cairo	May 21–27	2	..
Germany			..
Total June 9–23: Cases, 8.			
India: Bombay	May 27–June 1	43	32
Madras	May 27–June 1	5	3
Moulmine	Jan. 1–Mar. 30		39
Moulmine	Mar. 31–May 4		46
Indo-China: Saigon	May 14–20	3	2
Italy: Leghorn	June 9–22	4	.
Naples	June 9–22	10	1
Java: Batavia	May 12–25	5	1
Mexico: Frontera	July 7	1	..
Mazatlan	June 19–25		1
Mexico	May 19–June 1	94	43
Portugal: Lisbon	June 7–13	7	..
From the Veroffentlichungen des Kaiserlichen Gesundheitsamtes, May 8 and June 19, 1912.			
Russia: Odessa	May 19–25	.	1
Odessa	June 2–8	1	1
St. Petersburg	May 27–June 8	18	5

Medical Record

A Weekly Journal of Medicine and Surgery

Vol. 82, No. 4.
Whole No. 2177.

NEW YORK, JULY 27, 1912.

$5.00 Per Annum.
Single Copies, 15c.

Original Articles.

THE EXTERNAL USE OF WATER FOR ENHANCING RESISTANCE IN TUBERCULOSIS.*

BY SIMON BARUCH, M.D.,

NEW YORK.

PROFESSOR OF HYDROTHERAPY, COLLEGE OF PHYSICIANS AND SURGEONS, COLUMBIA UNIVERSITY.

THE renaissance of tuberculosis management was initiated by Brehmer of Goerbersdorf, who, in the face of criticism, ridicule, and obloquy persisted in the claim that tuberculosis is curable by the physiological agencies—air, water, exercise, rest, and diet. These remedial agents are fully treated in every American work, and they have been the frequent theme of discussion in this society—*with the exception of water.* It is the purpose of this paper to rescue water from unmerited neglect and to show that the latter originates in unfamiliarity with the principles and practice of hydrotherapy. In 1892 I presented to the New York State Medical Society an address on "The Successful Management of Chronic Diseases," in which the value of the methodical application of remedies, and especially of water, was distinctly brought out. *Pulmonary tuberculosis* was selected as a striking illustration of my theme. The marvelous results from the methodical graduated, application of cold (below skin temperature) water in phthisis pulmonalis was demonstrated by clinical histories from the records of the Montefiore Home for Incurables (now called Home for Chronic Invalids and Hospital for Consumptives). I indulged in no generalizations but sustained every statement by bedside facts, citing cases in all stages of the disease in which the improvement in nutrition and gain in weight and general vigor was phenomenal, resulting in return to their vocation in some instances and even in remaining capable of work for several years.

These patients were under constant observation of some of the staff of eighteen physicians, their sputum was examined by Dr. Hodenpyl, pathologist to several hospitals; there was no possibility of error. In none of them, and I want particularly to emphasize this fact, did the open-air treatment, the most potent of all antituberculosis remedies, play a rôle. For despite the fact that in the planning of the building I had insisted upon a costly and perfectly equipped Liegehalle, heated in winter and opening to the South, it proved impossible to induce these desperate people to submit to discipline by reason of the mistaken kindliness of the directors, whose chief aim was claimed to be to soothe their dying days. Nor did I interfere with the medication even when it did not meet my approval. In view of these facts, it may be claimed that *the favorable results were chiefly due to the methodical application of water* and the good food for which they would have had no appetite without the tonic action of the latter. Moreover, they had, previous to admission, been treated secundem artem in our best hospitals and by competent private physicians and consultants, with the sole exception of water, which at that time was not systematically used by anyone in this country.

Seven years later our worthy colleague, Dr. Adolphus Knopf, published his excellent work on tuberculosis, in which he described several procedures and emphasized their importance. Since that time I have come across only three books on tuberculosis by American authors which make mention of the subject. One displays contempt and absolute ignorance of the uses of water despite the fact that its 300 pages are an otherwise good work. This author writes: "Well selected tonic medicine is worth incomparably more than baths. Unfortunately, most experimentations with baths have been done by specialists in hydrotherapy, a circumstance not conducive to unbiased reports." The absurdity of this comment would reveal itself to the author even if he would replace the word baths by tuberculin and hydrotherapy by tuberculosis. Compare this tirade of a man ignorant of hydrotherapy to the encomiums of a great teacher like Von Ziemmssen, of Brehmer, Dettweiler, Cornet, and others who gratefully commend these "specialists" and you will not regard my comment unwarranted.

A second more pretentious and in other respects able work does not mention hydrotherapy except to state that "dietetic and hydropathic means often suffice to cause disappearance of night sweats." This author's dread of water is amusing; he never advises it without adding vinegar, alcohol, chloral, or brandy, a practice which Von Ziemmssen very properly condemned long ago.

Another textbook on tuberculosis, consisting of contributions by American authors, dismisses water with a few vague lines on cold baths "for hardening and mustard foot baths and sponging for temperature reduction." None of these latest American works mention the principal action of water—improvement of nutrition and stamina. Contrast Knopf or Cornet or any complete work, or the views of Brehmer, the father of phthisiotherapy, with these authors and you will fall into sad reflections on the lack of knowledge of American tuberculosis authorities on the subject of hydrotherapy. The latter is also illustrated by the following incident—I cite it to sustain my contention. During a recent visit to a magnificent hospital for tuberculosis now in course of construction, I found that each floor of the six pavilions was supplied with a

*Read before the National Association for the Study and Treatment of Tuberculosis, at Washington, D. C., June, 1912.

complete douche room which, among other features proving ignorance of technique, was arranged so badly that the doucheur would receive water rebounding from the patient. There were twenty-four douche rooms for 600 patients! Expressing surprise at this lavish expenditure, the architect explained that he had been informed that a hydrotherapeutic plant was essential in every up-to-date tuberculosis hospital, and since he aimed to excel all other institutions, he placed a douche room in every ward so that the most helpless patients would not be deprived of the beneficent water treatment. He certainly is building an institution which is complete and praiseworthy in every other respect except in cost. My comment that one douche room would probably suffice for the entire institution, since it is intended for advanced cases, and would therefore present but a small percentage of ambulant cases fit for the douche, was met with the statement that none of the tuberculosis experts who had examined the plans and had inspected the hospital since the douche rooms were actually laid out had criticised the latter, though they had not spared him in other respects. Nor was he entirely satisfied until I had shown him the Riverside House Hydriatric Department, in which 100 to 150 treatments are sometimes given in ten hours in one douche room and the Vanderbilt Clinic Hydrotherapeutic Department, in which twenty-five patients are often disposed of in two hours. About $120,000 was the cost of this unnecessary douche room arrangement besides the valuable space wasted. This expenditure applied to incipient cases would restore many to health and earning capacity.*

Another mistake which will do much damage if this warning be not heeded and which I pointed out in vain to the architect was the instalment of an electric light cabinet in each douche room. This apparatus is useful chiefly for rapid production of diaphoresis and its suggestive effect. The former is exhausting and therefore injurious and the latter is unnecessary in the advanced stages of tuberculosis. It is hoped that the physicians who will take charge of this great hospital may study hydrotherapy in some good textbook before they venture to utilize the still abundant facilities for hydrotherapy.

Now for the other side of the picture. I was delighted to note that this society has not been altogether oblivious to the upbuilding action of water. True, this agent is rarely referred to in the transactions, but whenever Knopf, Pottenger, Meyer, and Barlow have spoken they have displayed a correct idea of its aims. At every meeting climate, exercise, diet, rest, tuberculin have been fully discussed. At only three meetings do I find water mentioned and then in the most casual manner.

I plead to-day for the restoration of this potent agent for enhancing resistance to the legitimate position assigned to it by Knopf, who wrote "hydrotherapy comes next to aerotherapy."

*The fallacious idea that a hydrotherapeutic plant is essential to an up-to-date hospital often comes under my notice, since I am frequently consulted on this subject. Only a few months ago the plan of an extensive Hydrotherapeutic Department for a hospital of 500 patients was submitted to me for revision and suggestions. I advised against it because there was no large outdoor department. In another costly hospital my advice to the same effect was disregarded; the apparatus has never been used.

†This paper was allowed twenty minutes, while most of the afternoon was devoted to three papers on tuberculin, the value of which was shown by excellent observers as dubious.

For forty years water below the skin temperature has been constantly a part of my therapeutics of pulmonary tuberculosis. Prior to 1880 a residence in Camden, S. C., brought a number of these cases under my observation; its proximity and climatic similarity to Aiken made this town quite a resort for consumptives. Not, however, until I became chief of the medical staff of the Montefiore Home for Incurables did an opportunity present itself to utilize water on an extensive scale and with intelligent cooperation. In 1886 a small appropriation was ironically granted me by the directors, who regarded the restoration of any of these incurables as chimerical. The astounding results obtained in phthisis and other intractable diseases brought a larger appropriation and contributed no little to the change of title from "Home for Incurables" to the present title. The records of this institution tell their own story. Some of them were published four years before I visited Goerbersdorf and Falkenstein. My faith in water for enhancing resistance was nurtured by Von Ziemmssen's classical lectures on Phthisis Pulmonalis. In the tenth lecture he said: "I cannot close this chapter on prophylaxis without mentioning hydrotherapy, which here as well as in developed tuberculosis plays an extravagantly important rôle. I recommend for your special study Winternitz's excellent monograph on this subject. My observations are in entire accord with those of Winternitz."

"Water is the most simple strengthening and hardening remedy; it may be used everywhere and by everyone. Even the most simple lukewarm rubbing down of the entire body on leaving bed (reduced as he describes later) exercises the nerves and muscular system and conduces to prompt reaction, refreshing and stimulating the nervous system and reflexly the respiration, circulation, and digestion. It may be used in the poorest families. There is no advantage in brandy and salt rubs. The shock-like action is demanded. The great advantage of cold rubbing is that it may be applied at home by even an inexperienced person and its good effect may be obtained for months and years by daily practice, especially among the less well-to-do, all of which give it extraordinary value."

The present generation of physicians cannot realize the high standing of Von Ziemmssen as a clinical teacher and observer; to my youthful mind his dictum was gospel, and I have had no cause to regret this faith. When I visited Brehmer's, Roempler's, and Dettweiler's Sanatoria in 1896, it appeared to me that the douche was given at too low a temperature (it was 47° F. at Falkenstein) and too strong from a large shower. I was informed in reply to this comment that only patients already improving were judiciously subjected to this douche, and that the reaction was cautiously guarded. In the Montefiore Home, on the contrary, which at that time received no incipient cases, almost all patients received mild neurovascular training; *i.e.* the graduated application of cold water. Thus was happily demonstrated the superiority of the mild procedures over the heroic douche method.

I have coined the term "Neurovascular Training" in order to emphasize the fact that there are few, if any, cases that may not be profitably subjected to a graduated, daily increase of cold water, reducing the temperature, and increasing the duration slowly and, in institutions, adding the pressure from the douche. By this method the capacity of the nerves and vessels of the skin and its muscular structures

which control the capillaries may be trained to respond with increased vigor just as the muscles of the arm may by slow and graduated accretion of weight be trained to lift heavier weights.

The following syllabus prepared for the students of my department, briefly describes Neurovascular Training:

VANDERBILT CLINIC.
DEPARTMENT OF HYDROTHERAPY.
TONIC HYDROTHERAPY.

Graduated Neurovascular Training. Cardinal rule.—All water applications below 90° F. must be made with friction.

First Stage—Ablution.—Avoid extremities below knee and elbow. (*a*) Begin with 90° with saturated linen cloth or gloved hand. (*b*) Pass rapidly over successive parts. (*c*) Dry thoroughly. (*d*) Dress and exercise in open air in ambulant cases. (*e*) Reduce temperature of water daily two or more degrees, until 60° is reached.

Second Stage—Affusion.—(*a*) Patient stands in water at 105°. (*b*) From a bucket of water at 85°, water is dipped and thrown over back, each shoulder and chest. (*c*) Dry, dress and exercise in open air. (*d*) Reduce water temperature daily 5° or more to 60° F. (*e*) If reaction is good, proceed to third stage.

Third Stage—Cold Rub.—(*a*) Patient stands in water at 105° F. (*b*) A linen sheet is wrung out with water at 80°, decreased daily. (*c*) Damp sheet is wrapped over body snugly. (*d*) Patient is actively rubbed over sheet until sheet is warm. (*e*) Dry, dress and exercise in open air. (*f*) Reduce temperature of water 5° to 10° daily to 50° if reaction is good. Then proceed to drip sheet.

Drip Sheet.—(*a*) Patient stands in water at 105° F. (*b*) Upper edge (12 inches) of linen sheet is gathered into folds. (*c*) Sheet is dipped in water at 80°. (*d*) The dripping sheet is held by attendant while patient wraps himself into it by turning the body. (*e*) Friction and slapping with flat hands for two minutes. (*f*) Pour water at 70 degrees over shoulders. Rub and slap again until sheet feels warm. (*g*) Repeat this over successive parts of body, rapidly. (*h*) Sheet removed. Patient dries, dresses, and exercises. (*i*) Reduce water temperature daily until 50° is reached.

In small sanatoria and in private practice the douche may be replaced by the drip sheet.

I heard a teacher of hydrotherapy in Vienna say "the douche must always be given strong and cold." The application of the douche in this indefinite manner has done much harm. Especially in tuberculosis is it fraught with mischief and this *has done much to discourage its popularization.* In careful, skilled hands this idea would exclude many feeble patients, while in careless hands life and health would be endangered. Brehmer dwelt on this danger, insisting that the douche be always administered by a physician. I apprehend that despite his praise of this procedure his just caution has deterred many from its use in appropriate cases. With the apparatus I have devised for institutions, the duration, pressure, and temperature may be so accurately applied that the patient may be gradually trained to accept it without harm. This is proved by some of the Montefiore Home patients who were so well trained by the graduated hydrotherapy preceding the douche that they refused a five-minute rain douche of higher temperature than 65° F., a procedure from which most of us would shrink. That this douche table is absolutely "foolproof" is evident from a record of over 50,000 treatments in three institutions during the past twenty years. For tuberculosis cases in institutions I have devised a more simple and less expensive wall apparatus.

The difference between the slow and cautious neurovascular training and the heroic douche treatment is illustrated by two sanatoria that are under equally skilled direction. In the Budapest St. Elizabeth's Hospital Dr. Kuthy uses the former; he reports one thousand cases in the first stage treated with tuberculin and the most approved dietetic and hygienic régime, of which 53.9 per cent. were discharged as clinically cured, while at the Belzig Sanatorium only 39 per cent. recovered. The only difference in the management of patients in these institutions was that Kuthy used a graduated hydrotherapy adapted to each patient's condition from the beginning, while at Belzig the douche is the principal procedure. Kuthy does not regard any case as cured until two years have elapsed without manifestations. These data are cited to show that individualization is important and that although both physicians individualize carefully one loses the best action of water because he awaits, as did Dettweiler, the patient's tolerance of douches.

Unfortunately for its universal adoption, water is used irrationally on merely empirical grounds. A rational basis underlies its action. What is the rationale of water in tuberculosis? Taking pulmonary tuberculosis as an example, the indications are to improve nutrition and hematosis, to elevate the patient's stamina in order to enhance resistance. During the last quarter of a century I have not prescribed medicinal tonics for any patient because systematic neurovascular training which may be administered in any household, has been effective in the improvement of appetite, increase of blood cells, and muscular and circulatory capacity, as evidenced often in gain of weight and general vigor. This statement is based on hundreds of blood-counts and weight records. The rationale is so simple that I would fain omit it here, were it not invariably disregarded in the text books which detail the action of medicinal agents at length. The so-called shock from cold water is dreaded without reason; it is not, like surgical shock, "a depression of the vital powers," but rather a surprise to the cutaneous nerve terminals, furnishing thermic and mechanical excitation which, as we learned in our student days, is conveyed to the central nervous system and thence reflected upon all the structures in connection with the latter. Pardon my using a trite but emphatic illustration—the gasp of a stillborn infant on receiving a dash of cold water. In fact the management of this type of "asthenia" offers an epitome, as it were, of hydrotherapy. Do we not increase the dose of temperature stimulus by dipping the entire body in cold water, when the smaller dose—sprinkling—fails to arouse the waning vitality, and do we not again increase the so-called shock by contrast of the alternating action of hot and cold water dipping, when needed to resuscitate the patient? Alcoholic or medicinal stimulants are not thought of in this sudden demand upon our therapeutic resources. Why has custom established cold water as the only stimulant in this most pathetic of all asthenias? Because the empirical good results are based upon rational physiological principles and no other stimulant is capable of accomplishing such marvels of restoration. You may apply the principle here involved—*temperature excitation judiciously adapted*

to the patient's reactive capacity—to every other form of asthenia. In tuberculosis, for instance, you may obtain precisely the same effects for the same reason. This is true science, more than can be said of some of our "best remedies." Individualization is imperative; its neglect brings disappointment and failure, often resulting in abandonment of an agent that has possibilities unthought of. That the dash and the dip would be futile in typhoid asthenia and that the cold bath would be fatal to the infant "goes without saying." I have formulated a hydrotherapeutic law—the effect of a hydrotherapeutic procedure is governed by the difference between skin and water temperature. This is modified by psychic and physical conditions which are easily learned by a little observation and practice. To avoid faulty hydrotherapy and make it more universal, I have devised neurovascular training which furnishes a daily test of reactive capacity and by which all harm may be obviated in the most depreciated case. The effect of neurovascular training upon the circulation is marked by reason of the vasomotor stimulation which primarily affects the smaller vessels. In addition there is an action upon the "skin heart" which has not been sufficiently appreciated. I hold that since the capillaries have no muscular nor elastic coat, their narrowing under cold water is due to the cutaneous muscular fibers which are contracted by the cold. These compress the capillary network with which they are interwoven and thus aid the vasomotor action by increasing the resistance at the periphery. The result is an immediate response of the heart with increased ventricular contraction and all the potent influences, flowing free from an enhanced cardiac tone, removal of stases, exudates, and enhanced nutrition and elimination. Moreover, the well-known favorable action of cold procedures in other infectious diseases evoked by their effect on the peripheral circulation may be expected in tuberculosis also. This is the clinical fact observed in febrile cases especially.

Before Plunge, 50 Contractions. Raised 5.139 kgm.

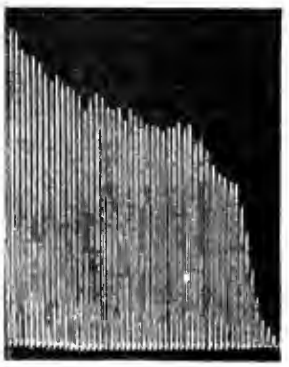


Fig. 1—Normal fatigue curve right hand.

After Plunge 50° F. 74 Contractions. Raised 9.126 kgm.

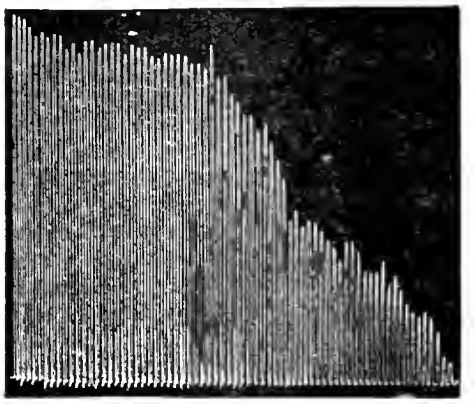
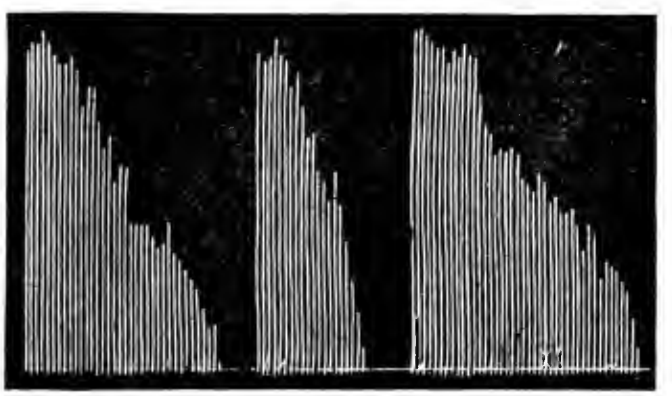


Fig. 2.—Fatigue curve, right hand, after bath, 50° for 15 seconds.

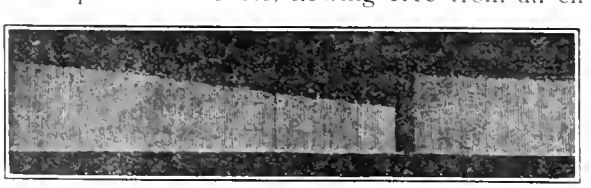
Ergograph Tracings. (Maggiora.)

There is one action of water procedures which has not received sufficient attention, viz., the remarkable influence of cold and warm water upon the muscular system. Vinaj and Maggiora of Turin have given us some valuable laboratory data on the enhancement of muscular vigor by cold water and its diminution under warm water if given without the mechanical stimulus of atmospheric pressure. By repeated experiments with the ergograph of Mosso, to whom they submitted their results, they ascertained the fatigue curve (line) before and after water procedures of various kinds. The middle finger of the right hand, for instance, was made to contract with the greatest exertion, lifting a weight of one kilogram until fatigued; the point of exhaustion was reached after fifty contractions, two seconds apart. (Fig. 1.) This was calculated to correspond to a total of 5.139 kgm. work, while after a plunge bath of 15 seconds at a temperature of 50° F, the same finger was capable of completing 74 contractions before fatigue ensued, corresponding to 9.126 kgm. work.* (Fig. 2.)



a b c

Fig. 4.—*a*, Normal fatigue curve; *b*, After labor; *c*, After wet sheet.



a b

Fig. 3.—*a*, Before rest, or before wet sheet; *b*, After rest, or after cold wet sheet.

In an interesting article on the rationale of rest published in the May number of the *Outdoor Life* by Professor Lee of Columbia University, the effect of rest is shown in a diagram which I reproduce (Fig. 3) in order to show that a similar effect is produced by cold water procedures. In Figure 4a and b the fatigue lines are shown after muscular action; Figure 4c shows how the lost muscular vigor was restored by the cold wet sheet.

Professor Lee writes "There is no known antidote for fatigue (with its detrimental products) unless it be rest." Figure 4 demonstrates that there *is* another antidote and a much more powerful one, namely cold water administered with friction. The chief physiological action of cold water procedures is first the beneficent effect of exercise upon the unfatigued muscle and second the good effect of rest upon the fatigued muscle. We therefore obtain from judicious graduated cold procedures an improvement in the circulation of the blood and lymph, enhancing cardiac activity and

*From "Principles and Practice of Hydrotherapy," Wm. Wood & Co., New York.

driving the venous and arterial blood and the lymph through unwonted channels, washing out fatigue products and other elements of defective tissue change. The advantage of muscular enhancement by water over that produced by active muscular exercise in tuberculosis is enormous, because there arises no active disturbance of the respiratory process which would menace the consumptive. Too often also absolute cessation of exercise is demanded by reason of rise of temperature leading to loss of valuable tone, when cold water proves a precious substitute.

My limits do not permit me to enlarge upon the rationale of the action of judicious and graded hydriatric procedures; these are fully detailed in Chapter V of my book on "Principles and Practice of Hydrotherapy," Third Edition, Wm. Wood & Co.

When all its briefly enumerated effects are considered, it may be claimed without fear of contradiction that hydrotherapy would occupy a high plane in the management of tuberculosis if it were applied rationally as is here outlined. Owing to the lack of training, faulty methods prevail in otherwise excellent institutions in which *the good results now obtained would be vastly multiplied by improved methods.* For instance, in one large institution the patients are permitted to take their showers as suits them, while in another the patient stands on a glazed brick floor with the cold water flowing upon his feet; the latter should always be protected by a slat floor because their chilling interferes with general reaction. Moreover the shower is not so stimulating as the fan douche which strikes every part treated with friction and may be confined to definite portions of the body, as demanded by reactive capacity.

The wonderful results of graduated exercise claimed by Marcus Patterson of the Brompton Hospital for Consumptives are the result of judicious gradation. He applies exercise as I have applied water, beginning with mild forms and slowly, carefully rising to more active methods. This is the secret of success and it is simple enough to enlist imitation.

Another precious advantage of systematic water treatment of tuberculosis lies in the fact that when the patient returns (cured or arrested) to his unfavorable environment, the daily neurovascular training has become an imperative need for him. Dr. Rosenberg of Bedford Hills informs me that he often meets discharged patients who express their craving for the shower bath which they satisfy in the public baths where showers are the rule. They are not always able to sleep with open windows because other inmates of the room object to cold air, but they can readily obtain the cold shower and protect themselves against relapses by enhancing resistance capacity in another way.

In conclusion I would say that these comments are the result of my disappointment in finding hydrotherapy discussed so little in American books upon and societies connected with tuberculosis. If colleagues are using it they have failed to realize its importance and have not published their results. I hope that to-day's discussion may be confined to actual clinical or laboratory investigations, as I have endeavored to present.

I have been more frank than is my wont, because of the pressing demands of suffering humanity, and having passed the biblical span of life another opportunity may not be granted me. This is my warrant for urging upon every tuberculosis specialist to investigate the rationale and therapeutic action of water and to try in every case the method of neurovascular training which may be practised in the most humble household upon the most depreciated subjects without harm in this as in other depreciated conditions.

I am ready to demonstrate all I claim to any one interested in the subject, in the institutions and clinic with which I am connected.

51 West Seventieth Street.

TREATMENT OF HABITS.*

By CHARLES E. ATWOOD, B.S., M.D.,

NEW YORK.

NEUROLOGIST, HOSPITAL AND SCHOOLS FOR CHILDREN, RANDALL'S ISLAND; ASSISTANT IN NEUROLOGY AND PSYCHIATRY, VANDERBILT CLINIC.

This subject having been selected for me by the Committee of the Orthodontia Association, will have to be discussed by me largely in its generic sense and from a biological standpoint. In this way perhaps some suggestions may be brought to light which can be adapted to practical ends in dealing with the pernicious habits which interfere with the important work of your specialty.

According to the Mendelian law, very simply stated, one-fourth of the offspring of a given union will be like one parent, one-fourth like the other, and one-half will be of a mixed type, partaking of characteristics of both parents and capable of further transmitting these characteristics in turn to their children. Investigations into the heredity of insanity, feeble-mindedness, epilepsy, and the neuropathic constitution, have already been made; and in the study of generations of many families in reference to the probability of inheritance of neuropathic conditions, the actual findings have corresponded with astonishing closeness to the theoretical expectation expressed in the Mendelian theory. It would take too much time and space, however, to discuss the matter at length. According to the same law, variations acquired during the life of an individual are not transmitted to his descendants. It is nevertheless true that descendants are not exactly like ancestors and not exactly like each other. On the theory of evolution we may attribute this variation to natural selection; while heredity helps to perpetuate what natural selection has caused to survive. Environment is a factor in producing inharmonious variations from the normal, and also in destroying them. While both prenatal and postnatal agencies are, of course, concerned in the production of oral conditions which you are called upon to treat, I am inclined to give the former the greater potency. The laws of heredity determine contour and structure and natural characteristics. Habits, on the other hand, are acquired, although tendencies to certain kinds may be predetermined by an inherited faulty mental make-up. A habit spasm, for example, is an evidence of some peripheral physical defect; but it also is found only in those with an inherited neuropathic constitution. Again, habits are readily acquired by nervous individuals and neurasthenics.

Our first thought in the treatment of habits should be to ascertain whether we have a mentally normal individual or an abnormal one to deal with. Speaking broadly, feeblemindedness in a given case may

*Read by invitation at the Third Annual Meeting of the Eastern Association of Graduates of the Angle School of Orthodontia, held at the New York Academy of Medicine, April 27, 1912.

be recognized by the Binet test; dementia præcox by the presence of negativism, stereotypy, mannerisms, etc.; the neuropath by his nervous constitution, faulty heredity, and the nature of his habit which is usually a spasmodic tic; while a very pronounced mental defect, such as we find in idiocy and imbecility, is determinable by simple tests and observation. The jaw condition, which the orthodontist is called upon to treat, and the pernicious habit, which occasionally interferes with his work, may both be looked upon as variations from the normal.

A knowledge of psychiatry, *i.e.* pathological psychology, is of great help to the physician and student in the understanding of the problems of normal psychology; and both are helpful in the analysis of habits.

Recently, in association with a medical confrère, I have been interested in a study of the significance of habit movements in mental defectives.* In these cases the psychic element naturally plays a less important role than in the normal individual. We pursued our investigations in our own service on Randall's Island and found there that a very large number of uneducable idiots and imbeciles had certain peculiar habit movements which were persistent in type. After a careful analysis of these movements it occurred to me that they all bore some relation to or suggested a sexual libido. They were all referable to certain regions of the body corresponding to what Freud has designated "erogenous zones," and they were of the pleasurable sort, as forced interruptions of the habit movements were resented by the patient, at times even with violence. Out of 600 idiots and imbeciles examined by us, 201 exhibited autoerogenous movements and acts. The erogenous zones to which the habit movements studied could be referred were, in the order of their frequency, the face, the pelvis, and the hand. One hundred and twenty-three, or more than three-fifths of the 201 cases were referable to the face and head zone. These were classified into pleasure suckers (of the fingers, rags, tongue, or lips), with the enormous number of 75; biters of the hand, tongue, or lips, 14; strokers and rubbers of the eyes, 13; strokers of their own or other faces, 13; pounders of the face and head, 6; and aural inserters of fingers or of foreign substances, 2. The autoerogenous movements were carried on continuously for long periods of time, *i.e.* they were habit movements. For various reasons, unnecessary to mention here, we concluded that the significance of the autoerogenous habit movements and certain apparently senseless acts of uneducable mental defectives are irrevocably bound up with a defective and perverted sexuality of infancy and childhood. Our views parallel those of Freud in sex genesis for the normal child as laid down in his "Three Contributions to the Sexual Theory." Our discovery has, to my mind, more than a biological and academic interest. It may help in the recognition of very young cases of mental defect. It may help to explain also certain habits and conditions which have been hitherto impossible of control. In a large orphan asylum assembly room we were able by observation alone of about 200 supposedly normal children to select out three cases of mental defect on account of their autoerogenous habit movements displayed. We proved up the cases subsequently by examination and inquiry of the attendant, and were not wrong in any case. The direct application of these remarks to the subject in hand might not occur except in mentally defective cases.

Let us now glance for a moment at certain simple facts in normal psychology in relation to habit. The formation of a habit, psychologically speaking, depends on two things: a sensorimotor connection between stimulus and response and a connection between stimuli. In other words, or to illustrate: let us say that certain sensory impressions are carried from the oral cavity, *i.e.* the periphery, to the sensory nuclei of the brain. They are there discharged into motor cells which return an impulse to the muscles for the production of voluntary movement. A sensation of the movement is also returned to consciousness. If the same sensorimotor process is repeated indefinitely, a more or less permanent connection arises, consciousness gives little or no further heed, and the motor response to the given stimulus becomes automatic. The initiation of the movement only is voluntary, and the sensation of the movement after a permanent connection has been made is sufficient to set off successive discharges, and the act is repeated automatically and subconsciously. If it takes the form of a spasmodic tic, the repetition of the movement is expressive of a neuropathic constitution. If it appears to have a sexual significance it may be generated in psychopathic soil. Automatic habits of some sort, however, are being continually formed in health, especially in childhood. The kind of habits formed is one of the problems of education which consists mainly in the "learning to make certain responses to certain stimuli, and inhibiting others." The ability to grasp the significance of the motor element or reaction to given stimuli enables us to see the value of special training. If special training along any lines can be accomplished in a given case, hope may be held out that other special or even general training may be possible in that case. The present tendency is to interpret in terms of motor adjustments.

The psychology of the child is one of the live topics of the day; and the importance of the motor element in mental life has been steadily gaining in recognition. Those who are content to ignore the actual brain conditions, however, the pathology of mental defectives, are naturally more optimistic of curing their abnormal manifestations than those of us who are brought much into actual contact with them and are familiar practically with these conditions and are unwilling to ignore them. The idiot, speaking broadly, is teachable only in a very limited degree. The cure of habit in those cases is practically impossible on account of the mental deficiencies of attention, memory, etc.

The effect of treatment of habit must always be commensurate in degree with the intelligence of the individual and the strength of the will. It represents for the normal child an adjustment to new conditions. Treatment of habits in the supposedly mentally normal child should be general and special. After all local causes which might give rise to abnormal sensory stimuli have been removed, the general health of the patient must be looked after in every particular and brought well up to par. Faulty conditions of life in the home and school and at play may have to be corrected. The faculty of attention and the will may have to be especially trained. The play instinct should be encouraged, and the social instincts also. Mild punishments for the habit itself may be instituted when there is no mental defect;

*Clark and Atwood: "A Study of the Significance of Habit Movements in Mental Defectives," *Journal Am. Med. Assn.*, March 23, 1912.

and also a system of rewards for well doing. Punishment not only brings the automatic habit into consciousness; it also exercises a restraining influence on repetition. A person is less likely to repeat an act attended by unpleasant consequences than he is to repeat one from which he derives a reward. That form of treatment, however, which should have a great influence in the breaking up of faulty habits, both mental and physical, is substitution. The human motor apparatus throughout is capable of adjustment in an indefinite variety of ways, and the nerve centers in a normal individual enable him to acquire power to make these adjustments. Therefore, unless there is really some mental defect or maldevelopment in a given case, there should be an ability to readjustment to a different series of motor acts if we can get the cooperation of the patient. A frequent repetition of substitution acts is, of course, required to bring about a new habit which should be of a corrective nature. The new corrective habit should be simple and if possible pleasurable and not embarrassing. If necessary it may be imitative. Possibly the origin of the faulty habit in the first instance may have been from imitation. If so, contact with the person whose fault was imitated should, of course, be further prevented. This is very important. Imitation in the child is one of the strongest factors in his mental make-up, and even with the grown-up, example is apt to be stronger than precept. The interest of the child must first be aroused, then the faculty of association, and lastly the memory.

If normal children are forced to do as they should for a sufficient length of time, without arousing too much antagonism on their part, the tendency to act in the enforced way becomes stronger than to act in any other way. Though the acts at first are not agreeable the children ultimately take pleasure in doing what they have developed a tendency to do. As one writer has expressed it: "A habit is a tendency to do a certain thing under certain conditions, hence a change in the conditions giving rise to a habit will often change the habit."

The abnormal physical defects which occur in some backward children, that give rise at times to habits, are not always easy of discovery. An apparent lack of the faculty of attention, for example, may be found to be due to defective hearing. A facial spasm may be associated with adenoids, eyestrain, phimosis, or oxyurides. An apparent backwardness may be augmented by errors of diet or faulty hygiene. Very naughty or very troublesome children are not usually entirely normal. They should be carefully studied, and receive special daily attention and treatment. Finger and thumb sucking can be successfully treated in infants only by mechanical restraint. Nail biting is most helped by keeping the nails cut very short. Tic or habit spasm is a not uncommon disorder in late childhood. It is an evidence, as previously stated, of neuropathic heredity, the exciting cause being a deterioration in general health or some local irritation. It may arise from a trick or habit or from imitation. The cause should be sought and removed. Arsenic and belladonna may be used. In cases of tic also the voluntary repetition of the same movement slowly, for long periods of time, is sometimes helpful. Reeducation and attention to the health are often of greater assistance in the treatment of most habits than psychotherapy. Practising a new habit in front of a mirror may be helpful. If the patient is intelligent and old enough to understand he may be shown pictures and models of perfect jaws and teeth and contrasting models of such as would be produced if the habit were persisted in. Those photographs which I have seen of models by members of your society, are beautiful as models but certainly terrifying as examples. The understanding of one situation makes it easier to grasp others. The long time required to learn a new order (*i.e.* a change of habit), says one observer, depends rather on indisposition than on inability. In mental defectives the attention may be obtained by the employment of music, especially of rhythmic music. Active manual employment in the daytime and watchful control at night are safe devices in these cases.

In conclusion, an undesirable habit cannot be inhibited any more than an undesirable disposition, but if a patient can be induced voluntarily to substitute desirable responses for the undesirable, a new habit may become automatic after a sufficient number of repetitions. A voluntary surrender of the will, however, is not only highly desirable, but apparently absolutely necessary in order to gain the ascendency. The tendency is ever to fall back to the old adjustment. The old sensorimotor paths are open and a very few impulses only are needed to make them as permeable as ever. This may be a more gloomy view of the situation than the facts warrant, but it is based on what would seem to be unassailable biological and psychological lines. As to the physical treatment of faulty oral habits, by mechanical devices, etc., no doubt your own ingenuity will discover the proper correctives. These will not succeed in mental defectives as a rule. And in the presence of actual nervous or mental complications, I would inject a word of caution, not to meddle except under the intelligent direction of some one who thoroughly understands the nervous system.

14 East Sixtieth Street.

A PRELIMINARY REPORT ON NEOSALVARSAN, WITH PARTICULAR REFERENCE TO ITS EMPLOYMENT AS AN INTRAMUSCULAR INJECTION.

By ABR. L. WOLBARST, M.D.,

NEW YORK,

CONSULTING GENITOURINARY SURGEON, CENTRAL ISLIP STATE HOSPITAL; VISITING GENITOURINARY SURGEON, PEOPLE'S HOSPITAL, WEST SIDE GERMAN DISPENSARY AND BETH ISRAEL HOSPITAL DISPENSARY, ETC.

It is two years since the first experimental work was begun on Ehrlich's salvarsan. During this period many hundreds of thousands of injections have been given throughout the world, the results of which may be learned by a perusal of the copious literature on the subject. My personal experience with this remedy is based on some three hundred intravenous injections and about one hundred injections given intramuscularly by the method of Alt. Since October, 1910, I have used salvarsan exclusively in the treatment of syphilis, and my clinical results have been, without a single exception, far superior, or at least equal to those obtained previously with the use of continuous injections of mercury salicylate or bichloride and the iodides. My records show a goodly number of cases of syphilis in various stages, treated with one intramuscular injection of salvarsan (Alt method), late in 1910 or early in 1911, that have not only remained clinically well all this time, but have given a negative seroreaction after repeated trials.

In not a single instance have I been unable to control the clinical manifestations of the disease with salvarsan, as is sometimes the case with mercury and iodides. For the past year I have employed the intravenous method exclusively, rather than the intramuscular method, except in a few cases, because of the ease with which it can be borne by the patient. I am quite convinced, however, that the results are not as lasting as with the intramuscular method. I believe that one intramuscular injection has the therapeutic value of at least three and possibly more intravenous injections. This view is also held by other observers and by Professor Ehrlich, too, who stated to me but a few weeks ago in his laboratory that salvarsan is essentially an intramuscular treatment and that the intravenous method must eventually give way to the intramuscular, if some painless method can be devised. He also believes that neosalvarsan is a step in this direction, as it is more easily borne by the patient and causes far less reaction in the average case when given intravenously.

Neosalvarsan is the name given to the newer and better salvarsan, the laboratory number of which, 914, indicates the tenacity and fixity of purpose predominating in the Frankfort institute. I had the pleasure of receiving a liberal supply of the new preparation early in April, and in the period intervening I have given 40 injections to 30 patients; of this number 17 injections were given intravenously and 23 intramuscularly. The time that has elapsed is manifestly too short for any positive conclusions; consequently this paper must be accepted as a preliminary report, to be followed by further studies later on.

Chemically, neosalvarsan is a "condensation of formaldehydesulfoxyl acid sodium with salvarsan. That is, it is a formaldehyde sodic sulphoxylate of dioxydiamidoarsenobenzol (salvarsan). It has this reaction: $R-NH_2 + HO-CH_2OSONa = R-NH-CH_2OSO-Na + H_2O$. It is a fine yellow powder, resembling salvarsan, but somewhat more yellowish in color and turning reddish on exposure to the air. The peculiar odor of salvarsan when dissolved in water is present, but to a far less degree. It dissolves readily in water at room temperature, the particles assuming a distinct Brownian movement. I have noticed that when the entire tube content is thrown into the water at once a slight precipitate is formed which sinks to the bottom of the mortar and the water remains but slightly or not at all colored; but when the water is stirred with a rod, the precipitate disappears and the water becomes citron yellow in color. On the other hand, if the powder is slowly deposited into the water by tapping the tube with the finger tip, a perfect solution is at once obtained and the water assumes the yellow color without stirring. The solution is neutral in reaction. This is claimed to be one of its most important features, as it eliminates the use of sodium hydroxide for alkalinizing purposes. I found, on several occasions, that the solution gave a faint acid reaction to litmus paper. In its administration nothing is required but sterile fresh distilled water. Saline solution should never be used with it—firstly, because it is entirely unnecessary, and also because it makes the solution turbid and may bring on toxic symptoms, which do not occur when distilled water alone is used.

The powder is contained in ampoules like those containing salvarsan. The exact dosage has not yet been fully determined, but Ehrlich states that larger doses than salvarsan should be used, in the proportion of 3 to 2. In efficiency, therefore, 0.9 gm. neosalvarsan is the equivalent of 0.6 gm. salvarsan. Neither has it yet been determined whether neosalvarsan, frequently repeated, will develop cumulative effects. In view, however, of the fact that larger doses can be used, it would appear that neosalvarsan is a safer preparation than salvarsan, particularly in the hands of the inexperienced. In the guinea pig it has been found that the *dosis tolerata* is 0.2 gm., as against 0.08 gm. of salvarsan. In all of my cases I have employed 0.9 gm. in adult males and 0.75 gm. (equivalent to 0.5 gm. salvarsan) in women, with practically no toxic phenomena or severe reaction, except in one or two cases mentioned below.

As to the frequency of treatment, Schreiber, who was the first to use neosalvarsan, recommended in a personal report to Ehrlich that it be given intravenously four times at intervals of two days, but this interval has been increased to four days by Duhot (*Revue Belge d'Urologie et de Dermatosyphiligraphie*, April, 1912), who believes that total elimination of the drug is not complete until four days have elapsed. I have given it at intervals of two days without any evidences of toxic reaction.

Ehrlich still insists that the water used for dissolving the neosalvarsan must be freshly distilled. In conversation with him recently he laid great stress on this point, declaring that endotoxins are developed in distilled water that is not fresh, which are the causative factor in the development of the toxic phenomena that have been observed in the use of salvarsan. The water should be distilled, sterilized and cooled to room temperature.

The method of administration of neosalvarsan is the same as that of salvarsan, with one exception. Schreiber and Duhot both recommend that not more than 120 c.c. water be used with 0.9 gm. neosalvarsan; that is, 20 c.c. water for 0.15 gm. neosalvarsan. They believe that the more concentrated the solution, the more effective it is. With salvarsan between 200 and 300 c.c. are used.

In my intravenous injections I dissolve the powder in a mortar containing 30 c.c. distilled water at room temperature. This gives a perfectly clear yellow solution. It is filtered (as a matter of precaution) and poured into the flask of the apparatus. Then we add warm distilled water (temperature slightly over 100 deg. F.), also filtered, up to 120 c.c. The fluid is injected into the vein as with salvarsan. I still adhere to my rule to keep patients in bed for at least ten or twelve hours after the injection.

The reaction after an intravenous injection of neosalvarsan is usually nil or nearly so. In my 17 injections I have not had a single instance in which the temperature rose above 100.5 deg., and in most cases it remained below 100 deg. In one instance (a case of tabes with a Wassermann + + + +) vomiting occurred immediately after the injection. For at least four hours preceding and following an injection it is well to interdict all food, as this may bring on vomiting and severe reaction. This is true with salvarsan also. A few of the patients complained of a burning sensation at the point of insertion of the needle, much more frequently than with salvarsan, and I have observed that an escape of a few drops of solution into the tissues causes much more pain than with salvarsan, but it passes off within an hour or two, while it may last for several days with salvarsan. I have never observed the yellow and blue discoloration of the skin which

is sometimes seen when the salvarsan solution leaks into the surrounding tissues. A few patients complained of a slight numbness in the arm and shoulder during and after the injection; this soon passed off, however. Apparently the neosalvarsan solution is absorbed much more quickly in the tissues than the salvarsan solution.

When in Frankfort recently, Professor Ehrlich declared that the best results would be obtained with neosalvarsan or salvarsan when some painless intramuscular method was devised. He believes strongly, to quote his own words, that "salvarsan is essentially an intramuscular injection," and he suggested that it would be well to experiment along this line with the neosalvarsan he had previously sent me. I have accordingly carried on a series of experiments with this object in mind, which I desire to embody in this preliminary report, in the hope that others may take up the subject and carry it to a successful termination.

I began by dissolving the powder in 20 c.c. distilled water, and injected 10 c.c. into each buttock. The pain caused by this injection was so intense that I used it on but three patients. These patients complained of the pain and induration for several weeks. The clinical result, however, was excellent.

In the second series the powder was suspended in 10 per cent. iodipin solution. In these cases, 6, 8 and 10 c.c. iodipin solution was used, respectively, with 0.9 gm. neosalvarsan. The pain was found to be much less severe than in the first series, but the induration and sensitiveness were still very marked. It was then thought that possibly the distilled water solution could be made less painful by the addition of a local anesthetic. Accordingly, in the following series, we injected 0.45 gm. neosalvarsan suspended in 3 c.c. iodipin solution into one buttock, and in the other, for comparison, we injected simultaneously the same quantity dissolved in 1 c.c. of a 1 per cent. solution of beta eucain in distilled water. The latter was much more painful than the iodipin suspension, and had to be given up.

In the next series we suspended the powder in glycerin, with very encouraging result; 0.45 gm. powder was suspended in 1 c.c. glycerin (c.p.) and injected into the buttock. The pain and induration were very slight as compared with anything that had been used previously; by way of comparison with the iodipin suspension, we suspended a similar amount of powder in the same amount of iodipin solution and injected it simultaneously into the other buttock. This was done in four cases, and it was found that the glycerin suspension was much less painful than the iodipin.

In the belief, however, that a clear solution might be more easily absorbed and less painful than this suspension, we added a few drops of water to the glycerin suspension. This dissolved both the glycerin and the powder, but the pain of the injection was increased. Then we dissolved the suspension in a few drops of 1 per cent. beta eucain solution and we found that we had at last an injection that was quite painless.

Finally it was suggested the injection could be made even less painful by dividing the dose into four parts and making four punctures instead of two. This would give us a smaller quantity for each puncture, with greater opportunity for absorption and lesser possibility of induration. We consequently suspended 0.9 gm. powder in 4 c.c. glycerin and then added a few drops of 1 per cent. beta eucain solution in distilled water. In a few instances I have used 1 per cent. alypin with equally good result. Eleven intramuscular injections have thus far been given in this way, most of them in my service at the West Side German Dispensary. A few have been given in my private practice. In every instance the patients have been more than satisfied, there being practically no pain, except a slight stiffness for a few hours, noticed mostly when the patient stooped or sat down. It is quite likely that even this sense of tenderness can be obviated by injecting into the lumbar muscles as suggested by Meltzer. We have not yet tried this method. In one case a moderate induration was observed on the second day at the site of one of the punctures, but this was not painful, nor did it cause any inconvenience. Taken altogether, this intramuscular injection is by far the most satisfactory I have thus far encountered and is worthy of a more serious trial.

In all of these cases the clinical result has been excellent. Primary and secondary lesions have responded beautifully, though not so rapidly, at times, as with the intravenous injection. The time is too short to speak of permanent results or of the effect on the sero-reaction, but it must be evident that we have here a very potent therapeutic agent that can be administered in the office, without the necessity of the patient's going to bed. This itself is a very decided advantage in its favor over the intravenous method, apart from its greater effectiveness.

In detail, these cases may be classified as follows:

Series 1. 3 *cases. Neosalvarsan dissolved in* 20 *c.c. distilled water;* 10 *c.c. injected into each buttock.*

Observation. Pain intense immediately after the injection and lasting from one to three weeks. Induration marked. No necrosis or abscess formation. Skin hot and tender. In one case (cerebral syphilis) the patient vomited after the injection. Curiously enough, this patient had previously received three salvarsan injections suspended in iodipin solution without any vomiting at any time. Clinical result in all three cases, excellent.

Series 2. 3 *cases. Neosalvarsan suspended in* 10 *per cent. iodipin suspension:*

Observation. Case 1, 0.9 gm., suspended in 8 c.c., iodipin solution. 4 c.c. injected in each buttock. No pain at time of injection, but moderate pain next day, which lasted several days. Slight induration. Clinical result good. Case 2, 0.9 gm., suspended in 6 c.c., iodipin. 3 c.c. in each buttock. Moderate pain, lasting three days. Moderate induration. Clinical result excellent. Case 3, 0.9 gm., suspended in 10 c.c., iodipin. 5 c.c. injected in each buttock. Moderate pain and duration lasting five days. Clinical result good.

Series 3. 2 *cases.* 0.45 *gm., suspended in* 3 *c.c. iodipin, injected in one buttock; in the other,* 0.45 *gm., dissolved in* 1 *c.c.* 1 *per cent. beta eucain solution in distilled water.*

Observation. The beta eucain watery solution was far more painful than the iodipin. One patient remarked that the induration felt like a tennis ball. Induration marked on both sides and in both cases. Pain lasted five days. Clinical result, good.

Series 4. 4 *cases.* 0.45 *gm., suspended in* 3 *c.c. iodipin and injected in one buttock; in the other,* 0.55 *gm., suspended in* 1 *c.c. glycerin (c.p.).*

Observation. Pain and induration of the glycerin suspension was much less than the iodipin. Clinical result in every case excellent. Pain noticed only on sitting or stooping.

Series 5. 11 *cases.* 0.9 *gm., suspended in* 4 *c.c.*

glycerin, to which was added a few drops of 1 per cent. beta eucain or alypin solution, dissolving the glycerin.

Observation. Pain and induration reduced to minimum. Most patients have felt almost no pain; some have felt pain on sitting or stooping for a day or two. Induration very slight.

Technique. The powder is mixed in a mortar containing 3 or 4 c.c. glycerin (c.p.); to this is added a few drops of 1 per cent. beta eucain or alypin solution in distilled water. The suspension has now been converted into an almost clear watery solution. The buttocks are painted with iodin, and four spots are located, two in each buttock, into which 1 c.c. of the solution is injected and slight pressure made by the hand. The patient is not confined to bed.

Conclusions. As to neosalvarsan:

1. The clinical results are at least as striking as those of salvarsan.

2. The reaction after treatment is nil or very slight, with correct technique.

3. Larger doses are more readily tolerated than with salvarsan.

4. The neutral reaction of the solution in water obviates the use of sodium hydroxide, thus avoiding the possibility of thrombosis.

5. Leakage of neosalvarsan solution into the tissues seems to be absorbed much more quickly than with salvarsan.

6. Patients feel the inflow of the neosalvarsan solution much more than that of salvarsan, in the form of a sense of burning at the site of the injection.

7. Neosalvarsan has no apparent effect on the eyes, kidneys, heart or lungs.

8. Intravenous injections may be repeated in 2 to 4 days.

As to the intramuscular method:

9. The neutral reaction of neosalvarsan solution lends itself readily to intramuscular medication, which is admittedly more effective than the intravenous.

10. The suspension in glycerin is made almost painless by adding a few drops of 1 per cent beta eucain or alypin solution.

11. The solution of neosalvarsan in distilled water is very painful.

I desire to express my thanks to Drs. Saul Steiner and Joseph Kaufman, of my service, for their assistance and cooperation in this preliminary study.

113 East Nineteenth Street.

BEDBUGS AND BUBONIC PLAGUE.

By JACOLYN VAN VLIET MANNING, M.D.,

BROOKLYN, N. Y.

The fact that the bedbug, *Cimex lectularius*, is an agent of transmission of bubonic plague was not known to the English-speaking world until Nuttall, Quick Professor of Biology in the University of Cambridge, published in the special plague number of the *Journal of Hygiene* a translation of the experiments of D. T. Verjbitski, a Russian engaged in research in the laboratory of the Imperial Institute of Experimental Medicine at St. Petersburg. Verjbitski's results were definite, proving that bedbugs fed on animals dying of plague communicated the plague to guinea pigs for five days afterward; fleas fed on animals dying of plague communicated the plague to other animals for three days. Verjbitski says in his report: "These experiments were conducted with guinea pigs. The plague culture was enhanced in virulence by passing through several guinea pigs. The bugs used were *Cimex lectularius*, which is the usual domestic parasite. The strong irritation occasioned by its bite is caused by the action of the saliva which is injected into the wound. A bug never inflicts but one bite, and does not leave the place until it has filled itself with blood. Its body under these conditions acquires an egg-shaped form. The bedbugs, in series of fifty, were applied to guinea pigs dying of plague, and to an area of skin under the thigh which had previously been shaved. The results definitely proved that the bedbug transmits plague, and that as an agent of such transmission the bedbug is to be more feared than the much dreaded flea of man and animals."

Verjbitski's summary,[1] under sixteen heads, of the results of the sixty recorded experiments is here given: "(1) All bedbugs and fleas which have sucked the blood of animals dying from plague contain plague microbes. (2) Bedbugs and fleas which have sucked the blood of animals suffering from plague contain plague microbes only when the bite is inflicted twelve to twenty-six hours before death, that is during that period when the blood contains plague bacillus. (3) The vitality and virulence of the plague microbe are preserved in these insects. (4) The plague bacillus is found in bugs which are not starved, one to seven days; in bugs previously starved four months, they are found eight to nine days. (5) The number of plague bacilli increases the first few days. (6) The feces of the infected bug or flea contain virulent plague bacilli as long as they persist in the alimentary canal of the insect. (8) The more virulent the culture with which is inoculated the first animal on which the bug was fed, the more certainly the infection was conveyed by bites. (9) The local inflammatory reaction in animals which died from plague occasioned by bites of infected insects was very slight or absent. In the latter case one could only locate it by the situation of the primary bubo. (10) Infected bugs communicated disease to healthy animals five days; fleas, three days. (11) Not more than two animals were infected from the same bug. (12) Crushing of infected bugs in situ in process of biting, occasioned, in the majority of cases, the infection of healthy animals. (13) Injury to the skin occasioned by the bite of the bug or flea offers a channel through which the plague bacillus can easily enter the body and occasion deaths from plague. (14) Crushed infected bugs and their feces can infect small punctures of the skin caused by bites for a short time after infliction of bites. (15) On linen soiled by crushed bedbugs (or fleas) or their infected feces the plague bacillus can under favorable conditions remain alive and virulent for five months. (16) Chemical disinfectants do not in the ordinary course of application kill the plague bacillus in the infected bug or flea.

"In crushed infected bugs the plague bacillus preserved its morphological characteristics during all the time it was found in the bodies of bugs. In the midst of a great mass of well preserved blood corpuscles could be seen an enormous quantity of plague bacilli in almost pure culture. Experiment XLII: The inner surface of the hind leg in six guinea pigs was scratched three times with a fine needle and the crushed bug was rubbed over the scarification; all of the six pigs died of plague in forty-seven to sixty-nine hours. Pure cultures of

plague bacilli were obtained from the following sources: (1) The crushed infected bugs on bits of linen—(a) dried thirty-five days at room temperature (b) 130 days in damp environment at 4 to 5° C., (c) exposed during eight days to direct sunlight, and (d) frozen ten days at 5° C. to 18° C.; and (2) from the feces of bugs which had been allowed to dry on linen at room temperature for ten days. These were all verified by the inoculation of guinea pigs. From the results we must conclude that clothing and bedclothes which are soiled with material from infected insects, obtained either by crushing them or from their feces, can serve during a long time as a source of infection. The clothing of people who live in dirty, unhygienic surroundings is generally covered with spots from crushed bugs and their feces. Formalin vapor is a poor insecticide, especially for bugs."

The following description of the bedbug is quoted from the bulletin, *The Bedbug,* of the U. S. Entomological Bureau:

"The bedbug has accompanied man wherever he has gone. Vessels are almost sure to be infested with it. It is not limited by cold. The presence of the bedbug in a house is not necessarily an indication of neglect, for, little as the idea may be relished, this insect may often gain access in spite of all reasonable precautions. It is apt to get into the trunks and satchels of travelers. It migrates from one house to another, sometimes for a period of several months, gaining entrance daily. Migration is apt to take place if the inhabitants of an infested house leave it. With the failure of their usual source of food the bedbugs pass along walls, water pipes and gutters, and gain entrance to adjoining houses. The bedbug is thoroughly nocturnal in habits and displays wariness, or intelligence, in its efforts at concealment during the day. It usually leaves the bed at the approach of daylight, to go into concealment in cracks in the bedstead, or behind wainscoting, or under loose wall-paper, manifesting its gregarious habit by collecting in masses. The inherited experience of many centuries of companionship with man has resulted in a knowledge of the habits of the human animal, and a facility of concealment, particularly as evidenced by its abandoning beds and often going to distant quarters for protection and hiding during daylight. The bedbug belongs to the order Hemiptera, characterized by possessing a piercing and sucking beak. The bedbug, though normally feeding on human blood, is able to get more or less sustenance from the juices of moistened wood, or the moisture in the accumulations of dust, etc., in crevices in flooring. The biting organs of the bedbug consist of a heavy underlip within which lie four thread-like, hard filaments which glide over each other with an alternating motion and pierce the flesh. The blood is drawn up through the beak, which is closely applied to the point of puncture, and the alternating motion of the setæ in the flesh cause the blood to flow more freely. In common with other insects which attack man these pests may be the transmitters of contagious (?) diseases. The bite of the bedbug is poisonous to some individuals. To such the presence of the bugs is sufficient to cause the greatest uneasiness. With others, however, the presence of the bugs may not be recognized at all, and except for the occasional staining of the linen by a crushed individual their presence might be entirely overlooked. The bedbug is known to be able to survive for long periods without food. In unoccupied houses it can undoubtedly undergo fasts of extreme length. Individuals obtained from eggs have been kept in sealed vials in this office for several months, remaining active, in spite of the fact that they had never taken any nourishment whatever. Bedbugs are said to lay several batches of eggs during the season and are extremely prolific. The eggs are white oval objects and are laid in batches of one-half dozen to fifty in cracks and crevices where the bugs go for concealment. The eggs hatch in a week or ten days. Breeding experiments conducted at this office indicate seven weeks as the period from egg to adult insect."[2]

Are bedbugs a common factor in American homes? In each of the following instances I have observed bedbugs in large numbers: (1) Having had occasion to trace the source from which bedbugs were found on a white infant in a North Carolina home, I investigated the sleeping quarters of the colored cook and maid; the bed-frame under the mattress in each bed was a crawling, seething mass of bedbugs. (2) Tracing to their source the bedbugs which appeared in a scrupulously kept medical ward of Cook County Hospital, Chicago, I found the bed of the kitchen man, which he had previously made and "bugged" himself, alive with bedbugs. The bed-frame, drawn out on the concrete floor, was swabbed with alcohol and then fired, when the bedbugs literally boiled out of every joint in the iron. (3) Attending at night an obstetric case in the Chicago Ghetto while externe at the Chicago Lying-in Dispensary, I found hundreds of these crawlers descending the board partition which formed one side of the room. Called to the apartment of an unknown woman at night, I found her bedclothing swarming with bedbugs. Composing myself to sleep in a richly upholstered reclining chair on a train in the Southwest in late October I was at once attacked by bedbugs in such numbers that all portions of the body felt as if scorched with flame. (5) In a previous paper[3] I have recorded witnessing the migration of a bedbug from a sick man, across the aisle of a coach in the Hudson tube, to the skirts of a party of ladies; this migration took place in February, showing how little season affects the roaming of this pest, as well as its voluntary migration from sick to well, as a possible means of transferring disease.

Observation demonstrates that constant distribution of the bedbug among members of the various social classes takes place: the physician returns from the slum case and the lawyer from the court where bedbugs swarm; the maid takes her half-day in a tenement home, the daily paper is distributed by a tenement dweller, the hand laundry often returns from a tenement district; the vacation is spent in unfumigated summer camps, and the traveler's bag or trunk is a usual hiding place for cimex; men, women, and children of all social classes come in close contact in railroad stations, transit-lines, theaters, schools, moving picture entertainments, summer amusements, and public inns. The invasion of the American home is more successfully accomplished by the gentle art of concealment practised by the retiring but ubiquitous bedbug. To the prophylaxian Verjbitski's demonstration that begbugs transmit blood-borne diseases is the most revolutionary discovery made since Pasteur announced the etiology of anthrax. This illuminating thesis lightens the path along which science has floundered in search of the common mode of transmission of acute epidemic disease. It

would appear that any disease whose germ or virus is liberated in the blood during any stage of the attack, may be transmitted by the ubiquitous bedbug.

The prophylaxis of bubonic plague and possibly of epidemic poliomyelitis, therefore, must first secure the extermination of the bedbug. The bedbug must be excluded by destruction from all dwellings, business districts, public halls and utilities, free dispensaries and night shelters, hospitals, and churches, rolling stock, and passenger ships. An annual spring extermination of the bedbug will result as well in the destruction of all cockroaches, spiders, ants, house centipedes, and hibernating adult flies and mosquitos. An annual renovation to be effective must include not the bedchambers of a house only, but every room in the house; not a single flat in an apartment house, but every floor including the basement and restaurant; not one house in a tenement row, but the entire block.

The methods to be employed are (1) general, including fumigation by hydrocyanic acid gas or brimstone, or destruction by fire; (2) local, including the application of various volatile or other poisons, or of boiling water.

Hydrocyanic acid gas method: The immediate and complete sterilization of a building and all its contents, with the total destruction of all germs, parasites, and vermin on the premises can be accomplished by fumigation with hydrocyanic acid gas. The gas penetrates every aperture, and leaves behind it the death of every organism; the dust will be undisturbed but innocuous; no cockroach or waterbug will be seen about the plumbing; no bedbug, moth, mosquito, or housefly will emerge from any crevice or drapery. Fumigation by this method is so exact that it should be in common use at least once a year; its immediate effectiveness recommends it for use in all aggravated and intractably insect-ridden houses. The method, however, is both expensive for individual use, and dangerous when employed unintelligently. Individual experimental use of the hydrocyanic acid gas method is not advocated. It should be a part of the equipment of the municipality which is placed at the call of the individual citizen, as is fire protection, and should be compulsory in all buildings enumerated above during the months of spring. Annual compulsory municipal fumigation can be accomplished by municipal ownership of equipment and sufficient accessory apparatus in the way of tents, etc., to house for twenty-four hours the inhabitants of one city block, notification to be given one week in advance. The hydrocyanic acid gas method of fumigation of houses is given in detail by L. O. Howard, Chief of the United States Bureau of Entomology, in *Circular Bulletin* 46, revised edition.[4] In response to a letter of inquiry regarding the use of the hydrocyanic gas in tenements, Dr. Howard replied: "In order to be effective and safe in East Side tenements, fumigation with hydrocyanic gas should only be carried on in the central one of three vacated buildings. I doubt very much whether one could get the people out of an entire block in that congested quarter, or even out of one building." Yet it is in the slums of our great cities in which pestilence breeds and from which it spreads. The first great epidemic of poliomyelitis of 2,500 known cases occurred in New York City in 1907, and only a cripple census would reveal how many cases occurred which were unnumbered in that report. It is in these slums that bedbugs abound.

Sulphur fumigation: It is sometimes very desirable in the eradication of parasites to fumigate a room at a time, or to fumigate several rooms successively. Summer camps and seaside cottages may be infected with bugs and should be fumigated before occupancy. A room or a relatively small house can be satisfactorily treated by sulphur fumigation. Sulphur will bleach books or draperies and all metal will tarnish. The sulphur candle is convenient for use. Use one candle for a closet of ordinary size and for a room which can be sealed use one pound of sulphur candles to each thousand cubic feet of air space. It will not be necessary to seal a vacant frame building, but it will be necessary to increase the amount of sulphur to 2 pounds for each 1,000 cubic feet of air space and close the building for treatment at least twenty-four hours. The sulphur should be placed in a good sized receptacle such as a coal-hod, which should be placed in a pan of water, so that there may be no overflow of the burning mass to start a conflagration. Close all windows, registers, ventilators, and large apertures, but do not paste up broad cracks with strips of paper, as by that means may be preserved alive the vermin you wish to destroy. Ascertain that the sulphur is well fired and burning, and close up the room or cottage for twenty-four hours. The premises should be well aired for a day succeeding the fumigation before occupancy.

Destruction by fire: When small structures of moderate value, such as chicken coops, outside closets, and summer camps, have become infested with bedbugs, the best prophylaxis is incineration. A great deal of old household articles stowed about the country house should help to feed the fire. Old and unused bedsteads of wood, folding beds, picture frames, and trunks are especially liable to be infested. The rubbish in attics becomes infested from begbugs brought to the chimneys by swallows and bats, and these parasites can no longer be considered harmless. Fire can be used effectively in freeing an iron bedstead which is thoroughly infested with bugs; bugs sometimes take complete possession of a neglected bed in an institution, and will be found to have invaded any joint or crevice in the gas pipe of which it is often constructed. The bed must be removed to a concrete floor, or out of doors; alcohol poured about all crevices and joints and immediately fired, will destroy every bug and all the eggs; the wire springs can be fired by passing a burning newspaper torch below them.

Local application: The application of corrosive sublimate, the petroleum oils, and the various insecticides is not advocated for the reason that, while any of these agents will kill a certain number of bugs, they will at the same time drive others to a different bed or another room, and the fight must be soon renewed; also, the treatment of a few pieces of furniture or a portion of a house is mere temporizing, for owing to the secretive habits of the bedbug a small number only will be destroyed. Water, poured from the teakettle in which it is still boiling, will kill all bugs and eggs on the area to which it is applied. Quicksilver, beaten to an emulsion with egg albumin, is very destructive, as the bedbugs will feed on the fresh albumen and die.

This article is drawn from material acquired in the study of the epidemic transmission of acute poliomyelitis; at a certain stage of research I found it compulsory to investigate the habits of the bedbug, which I now consider to be a probable factor in the spread of infantile paralysis, as it has been proved to be in the case of bubonic plague. There-

fore, all measures which are advocated in this article for the prophylaxis of a foe which has not yet touched the North Atlantic seaboard, may be applicable in the prevention of all diseases whose virus is present in the blood of the host during the acute stage of the disease. Of these measures there is none which would exceed in effectiveness the annual compulsory municipal fumigation of all habitations of man.

REFERENCES.

1. Verjbitski: "Insects and Plague," *Journal of Hygiene*, Vol. 8, Special Plague Number.
2. Marlatt: "The Bedbug," *U. S. Circular No. 47*, Revised Edition.
3. Manning: "Bedbug Agent of Transmission of Infantile Paralysis," *New York Medical Times*, April, 1912.
4. Howard: "Hydrocyanic Acid Gas Method of Fumigation of Houses," *U. S. Circular Bulletin No. 46*, Revised Edition.

151 Lafayette Avenue.

THE ERROR OF COLLEGE CRITICISM.

By O. L. MULOT, M.D.,

Brooklyn, N. Y.

In the Medical Record of September 18, 1909, I made a prophecy that less than a year later was fulfilled; the skeleton of our medical educational system was dragged forth from its dark closet and paraded through the daily papers. As a result of this, there were ruffled fur and feathers. Indeed, in some quarters the feeling ran so high that there was serious talk of having the law on the sacrilegious rascals who picked the closet lock and then rattled the dry bones so loudly. It is sincerely to be hoped that a sober second thought and wiser counsel has prevailed and that these, so grossly outraged worthies, will spare themselves the chagrin of seeing the case proven against them. They must not forget that after all, they have only themselves to blame for the conditions upon which specific criticism was exercised.

The Carnegie Foundation report which is the one that has aroused this tempest in a teapot, is neither to be praised nor deplored. That the conditions in some of the schools was well known and that this must sooner or later become common public property, was easily to be foreseen. Within the last few years these conditions have been the subject of study and remedial measures were advocated, but those in control of the schools have obstinately refused to take heed. On the other hand, we cannot congratulate ourselves that this report accomplishes much, if any good. While it certainly lost for the severely criticised schools a few students, strange to say it also attracted others; particularly such, who having failed to get through in one school, and still determined to get through, will go to the schools where they are led to believe that it would be easier and cheaper. A bad advertisement, it is true, but still one that equalized loss and gain. Thus, those entrenched in the control of such schools, snap their fingers at the report and its author, turn a deaf ear to friendly counsel and obstinately stick to the old rut.

The whole report on medical schools merits no serious consideration. The idea of a man who never studied medicine and therefore does not understand it, criticising the teaching of that science is incongruous and ridiculous. Imagine a physician criticising a divinity or a law school; his criticism would be treated as the work of a humorist and why should a layman's criticism of medical schools be more seriously considered? Nowhere in that report have I been able to find one suggestion by which a specific school was shown how it could improve its condition. It does not contain one line of constructive criticism; it is all along destructive lines. That is the easiest and cheapest kind, for it requires no ability to make and it in fact is good evidence of incompetence.

All criticism of medical schools, be it from a single individual or from a committee of some organization or even backed by the influence of philanthropic multimillionaire, is futile and misdirected, and the reason for this statement will be made clear further on. Furthermore, it is to be deplored that in the Carnegie Foundation report so much stress is laid upon the financial resources of the schools. We all appreciate the advantages that money can give a school, but money in medical schools, as in every other thing in life, is not every thing or the whole thing. Naturally there will be a difference between the criticism of the layman and that of the practical physician, who has had a teaching experience. Not one of the criticised medical schools has found in that report specific recommendations to fit their needs. It is clear to any one, that a school that has a total class of sixty or eighty, does not need such a voluminous equipment as does a school that has a total class of four hundred. By a judicious time arrangement, a smaller equipment can be made to serve for the instruction of the various grades, also for the instruction of various subjects, and where the classes are small it is not at all necessary to have different complete outfits and separate rooms for each subject. What I have here hinted at is too evident to require further elucidation. The object of medical educaton is not to train every student to be an individual and independent researcher, but it is to educate and train them to be competent and safe men in the sick room: for this is what at least 95 per cent. must be. If the first were the result of all medical education, it would indeed be a deplorable one, for then it might easily happen that in the scientific ardor, the patient would be only a secondary consideration. Nor is scientific research suited, or rather not every man who enters a medical school is suited to scientific research, and it does not follow that because a man is unsuited to research work he will not make a good physician, nor does it follow that a good research worker would make a good physician. That the laboratory worker is often far out of touch with the needs of the practical man is shown by the amount of stuff that comes from the research laboratories that is absolutely valueless to the practitioner, while many of the really practical things that are so badly needed, experience no progress. What some of the schools need much more than elaborate equipment, and which is of far greater importance, is the willingness and capability of the men in charge of the schools, to bring these up to a high standard and make their equipment, meager as it may be, count for all that it is worth. To this end they must fill the teaching staff with progressive, studious men, and preferably actual practicing physicians, not pure theoreticians, for after all only a physician can really appreciate the students' needs and instruct him according to those needs. They must be men who put their heart and soul into the work while they are at it and teach modern medical science, not simply the dregs of medicine. Such men must have pedagogic ability and not instill into the

minds of the students only medical science and facts, but above all, the art to think medically and independently of text books. Let there be no man on the staff who does not completely fill his position; let none hold vainglorious titles with which they puff themselves and use for advertisements, but are totally ignorant of the duties and responsibilities and do not even make a pretense of filling the position. This is a direction in which many of the criticised schools can work out an improvement without increased financial resources and would do much to overcome the handicap of cramped finances.

But as long as appointments and promotions in the teaching staff of our medical schools remain questions of favoritism, just so long will there be incompetent and indifferent teachers, particularly in the minor positions. Not until every position in the medical college, from an assistant in the dispensary to an associate professor, are subject to a competitive examination, free from all favoritism and strictly on its merits, will we have teachers worthy of the name. This is the practice in France; pick up any French medical journal and you can see these competitive examinations announced and they are open to all who can fill the requirements as to length of time in practice, hospital experience, etc. In that country the competitive examinations are not confined to the positions directly connected with the teaching faculty, but all dispensary and hospital positions are subject to it; by hospital positions is not meant the interne staff alone, but the attending physicians and surgeons owe their appointments to having won them in competitive examinations. Surely it is more in keeping with professional dignity to hold a position so won, than to obtain it by political and social wire pulling and the use of other silent but powerful means that only too frequently are used in our country in the getting of hospital appointments. Another commendable thing that this system effects is that the graduate with ambitions knows that he cannot neglect to keep up his anatomy and physiology, etc., for without these he can never hope to succeed in any of the examinations. All the large hospitals are under the control of the faculty; that does not mean that the staff of each hospital are all professors or associate professors; no, they do not make the title quite so common, but the faculty conducts the competitive examinations for the staff positions. Clinics are conducted at such hospitals by the attending physicians and surgeons, and by virtue of the appointment from the faculty such clinics are really under the authority of the faculty. Paris has only one faculty of medicine.

Under such a system we do not see such a spectacle as was recently enacted in a large hospital, when it was announced that the surgeon who placed the largest number of patients in the hospital would be given the choice of the chief surgeonship of any division. This procedure practically eliminated a surgeon of national reputation, whose skill had largely contributed to the success and fame of that hospital.

A word about clinical teaching. In my previous article I pointed out how much of the student's time was wasted in teaching him that which he later on did not use, particularly laboratory work. If the future physicians are to be made good diagnosticians, men who will use every aid that the clinical laboratory and its methods can afford him, besides what is to be learned from correct physical explorations, then the student must see these laboratory aids continually used by his clinical teachers in the hospital and in the dispensary. Unless he sees them actually and regularly used in the practice of his teachers he will consider them superfluous. It does not suffice to send the urine to the laboratory, for if this is done in the section teaching in the dispensary, the student has no means of following up the case and the case may readily be forgotten either by the student or the teacher; the examination should be conducted then and there. Such examination need not occupy a long time and the student may well make it himself, but the teacher in charge must be competent to make it. Recently in conversation with a physician, who holds an important professorship in one of our medical colleges, he remarked that he had no patience with men who needed guinea pigs to establish a diagnosis. A physician who expresses such an opinion has outlived his period of usefulness as a teacher, being medically too far behind the times to be intrusted with the instruction of medical students.

What some of the medical colleges seem to need, quite as much as funds, is a superintendent; a man with some sort of a business head on his shoulders. By stopping small leaks, a smaller pay roll of those performing the menial work connected with the buildings and laboratories on the principle of a day's work for a day's pay, economies could be effected. In the school with which I had the honor to be connected, a very large dispensary, in which everything was free to the patients, was maintained. It was admittedly not an altruistic affair, but run purely for the purpose of supplying teaching material. A conservative estimate of the cost of this is from $7,500 to $9,000 a year. This could easily be made self-supporting by the charge of a nominal fee: the charging of such a fee would reduce somewhat the number of patients, but there was at that particular dispensary, at all times, such a superabundance of material for teaching purposes that a slight reduction would not have mattered. Even if such a nominal charge did no more than make this department self-supporting, such a saving in the eyes of a business man is not to be despised. A teaching institution to be efficient need not be prodigal.

Lately there has been much stress laid upon the advantages of medical schools being a department of some university; aside from the financial aid, I can see no advantage. The future physician's needs in chemical and physiological knowledge differ from what is usually taught in the academic colleges, and nothing that the author of the Carnegie Foundation report has said has caused me to change my opinion about that. In that report, after a specific report on each medical school in the State of New York, he sums up the situation, in which summing up he says: "Of the eleven medical schools now existing in the state, only the bona fide university departments can then expect to survive; outside of New York City, Syracuse University alone has just now a chance. The schools of Albany, Buffalo, and Brooklyn belong to the past. None of the three has even yet entirely emerged from the fee-dividing stage. Syracuse, with a smaller total fee income than any of them, devotes every dollar to the development of the fundamental branches and has fairly earned support from outside." This statement is a little surpris-

ing when compared with the specific report on the Brooklyn school. There is another essential to an efficient medical school, and that even an abundance of money, enthusiasm and sagacity on the part of the teaching staff cannot overcome or get along without. This is an abundance of material for practical anatomy and an abundance of patients for clinical teaching. The layman-author of the Carnegie report, apparently absorbed only with the money strength of the institutions, seems entirely to have lost sight of this most essential requisite while writing the above statement. About the abundance of material in Brooklyn I have personal knowledge. That borough, with over 1,800,000 inhabitants, with its big water front, its vast shipping industries and factories, abounds in material. Albany, with Troy and Cohoes to draw from, should also have ample material; and the same can be reasoned to be the case for Buffalo from the geographical location and census. Very probably the author of the Carnegie report does not appreciate the fact that in the teaching of one very important branch of medical practice the Long Island school excels all the other schools in the State, if not in the country; that branch is obstetrics. That does not call for original research work and an imposing laboratory, but in my humble opinion is very, very important. I believe that if those in charge of the so-severely criticised schools will make an honest effort to bring their institutions up to the highest efficiency with their present resources; if they prove themselves worthy stewards, then the alumni and the local pride will come to their rescue and furnish more abundantly the sinews of war. Laboratories are what are costly, and here money may spell efficiency. They are essential for a good ground work, but for this there need be no prodigality; but even money, in a small city of say twenty, thirty, or even fifty thousand inhabitants, surrounded by only a sparse urban population, cannot supply material for practical work in sufficient abundance and variety. It is the practical experience in the dissecting room, in the dispensary, and at the bedside in the hospital that counts in the making of doctors, and counts very much more than the laboratory.

Right in our medical schools can be found the defect which so generally pervades the whole of our educational system—lack of thoroughness. We strive, and apparently achieve, the big things easily; but it is only training that will make men work out, patiently and methodically, the small detail, and without that detail the big things will not stand the test of careful examination. It is appreciation of attention to detail that has placed the Europeans and their schools in the enviable position these hold.

From a study of the latest reports of the organizations that are interested in bringing about improvements in our medical educational institutions, several things stand out clearly.

First, that we are over-producing doctors.

Second, that we have too many schools.

Third, that many of our schools are deficient.

There is no exception to be registered against this diagnosis, but the remedies advanced to correct these carry little hope of a cure or even lessening the evils.

Against the first, a higher educational standard as a preliminary requirement is urged; but this, after all, would bar only a comparatively small number. Too many are still attracted to medicine as a profession, by the belief that it is a lucrative and easy way of making a living. Let the average earnings of physicians, and the hardships of the life as these really are, stripped of romance, be made known to every youth and you will keep out the many who regard it purely from the financial side. Let this be told by those that are in it, not by the novelist, who embellishes the calling and his hero according to his fancy, but himself is totally ignorant of the heartaches, the bitter disappointments, the sacrifices, and the ingratitude of it all. This, only those that are in medicine can know and appreciate. Do not tell the youth only of the large fees the surgeon sometimes gets, but tell him also of the many, many little fees that he never succeeds in collecting, and these far outtotal the big ones. The percentage actually collected of the total sum earned, the alacrity and cheerfulness with which patients do *not* pay their doctors' bills; tell the truth about these thing to every youth and you will more effectively reduce the number of medical students than can be accomplished by any raising of educational standards. Educational facilities are today within the reach of nearly every one who has the will to grasp them.

The over-abundance of schools, especially of the inefficient kind is not a question that can be so simply solved. While consolidation of schools is lessening the number, and others for want of support or other reason have closed their doors, there still remain too many. The question as to what shall be done with these inefficient ones has been fruitlessly debated. The fact is that nothing can be done; no one has the right to pass death sentence upon them, for the very simple reason that neither an individual or organized critics have the slightest jurisdiction over them, and only the State from which the school received its charter has control. As long as the schools live up to the requirements fixed by the State, just so long can the schools snap their fingers at their critics. Therefore, the State must be the subject of criticism. Force the State to fix the higher standard for medical students' certificates and the colleges will obey the law or forfeit their charter. I do not mean that only those possessed of an academic degree shall be admitted to the study of medicine; that would be a manifest injustice. He who does not possess such a degree should have the privilege of taking an examination, even if such an examination is equivalent in severity to that of a bachelors' degree.

The State is the proper authority to fix the standards of preliminary requirements; it does not however dictate how or where the student gets them, whether he gets them from private tutors or from schools, as long as he can prove that he possesses them. Why then should the State assume a different and dictatorial attitude as to how the doctor gets his qualifications? For it does not accept the diploma from the medical college as a license to practise medicine. Who is responsible for the qualifications of the men licensed to practise medicine? The State, through its board of licensing examiners. The license comes from the State, not from the college. If men inadequately instructed are licensed, the licensing board is to blame, not the college that graduated them. Upon this board rests the final responsibility of the qualifications of the men admitted to practice. Let the board make the examination a practical as well as theoretical one; let it be conducted in the wards of the hos-

pital, in the laboratory, in the manikin and in the dissecting rooms. Then those who pass, to them may safely be entrusted the lives of the community; then the public can disregard where, how, and by whom their doctors were educated.

I, among many others, have wasted time and misdirected energy in the criticism of the medical schools, but I have come to believe it an error. I believe that if the energy of all the critics had been directed into other channels, especially that of persuading the various state boards to conduct more rigid and rational examinations, much more real progress would have been made and without engendering all the bitterness that has marked the whole question. Let criticism and pressure be brought to bear upon the various State licensing boards to make their examinations what these should be, and the whole college question will automatically regulate itself. For the college that has the larger percentage of State boards' failures will soon be shunned by students. That will mean that that school must strive to educate its students to pass the State board examination or close its doors for want of patronage. The State board of examiners can, without dictation and without harassing, determine the quantity and quality of the medical teaching and without helping a layman to pose as the Moses of American medical education.

424 Halsey Street.

ABDOMINAL TUMORS OF TUBERCULOUS ORIGIN.

By Alex C. Wiener, M.D.,

Chicago, Ill.

Of recent years our knowledge of tuberculous infection has been extended in two directions: (1) In establishing the fact that tuberculous toxemia exerts an irritating influence upon tissues, independent of the presence of the bacillus itself or its debris. (2) In the recognition of tuberculin as a diagnostic and therapeutic agency of the greatest value. Robert Koch himself hardly realized the influence which his discovery was destined to have in revealing the etiology of tumors.

Karl Ziehler in his pathbreaking work on "The Toxins of Tuberculosis" has proved beyond a doubt that the chemical substances extracted by dialysis from tubercle bacilli or their debris have the faculty of producing typical tuberculous reactions in organisms which are hypersensitized. This purely chemical derivative of the tubercle bacilli when admixed with the blood and the lymph may produce proliferations of a neoplastic nature which do not betray their tuberculous origin microscopically or through guinea-pig inoculation. The tuberculous toxine irritates both the connective tissue and the functioning cells. Theoretically such proliferation may occur in any organ of the human body. My own observations are confined to the lymphatic and the thyroid glands, the mamma, and the intestinal tract.

Quite a number of observations have been reported in regard to the simultaneous occurrence of tuberculosis, carcinoma, or sarcoma in the same patient and in the same organs. Among the many interesting publications on the subject I will cite only the paper of I. P. Simons, which appeared in the Johns Hopkins Hospital Bulletin for January, 1911, under the title "Sarcoma and Tuberculosis." A postmortem on a 60-year old negress at the St. Louis City Hospital showed a diffuse and tuberculous peritonitis and retroperitoneal sarcomata. In conclusion Simons says: "The chief interest in this case lies in the association of a very rapidly growing, typical, spindle-celled retroperitoneal sarcoma with a very virulent tuberculous infection of the peritoneum." He lays further stress on the fact that the two processes were always separate, even when found in the same gland, one being situated behind the esophagus, where there were two or three very small foci of tuberculosis in addition to the metastastic sarcoma.

Rippert, Claude, and Poncet, on the other hand, were the first to suspect tuberculous toxemia as the cause of many chronic inflammatory and neoplastic processes in the human organism which the microscope had designated as malignant. R. H. Gougerot describes two cases in which the tubercle bacilli had caused inflammations which histologically were identical with spindle-celled and round-celled sarcomata.

The following theses are offered for careful consideration:

1. That circumscribed or uniform enlargement of the thyroid gland is favorably influenced by the injection of tuberculin T.R. manufactured under the supervision of Prof. Ruppel. I have used this tuberculin exclusively, for the reason that one has to be familiar with the peculiarities of the tuberculin employed, and as a surgeon I had no time to try out the various products.

2. That tumors of the mamma, circumscribed and diffuse, which clinically are suspected of being malignant, are also found to react upon injection with tuberculin.

3. No diagnosis of malignancy should stand unless supplemented by the various clinical tests for tuberculosis and syphilis.

Separate articles will be necessary for a detailed description of cases illustrating the first two theses. This paper is confined to the description of two cases of apparently malignant tumors in the abdominal cavity which were cured by tuberculin T.R. injections. Cases similar to my second case have been described by Poncet and Lériche of Lyons and their pupils, but, so far as I know, tuberculin was not employed in any of them as a remedy.

Case I.—Mrs. M. E. D., 56 years old, born in England, youngest of ten children. Mother died at 76 from bronchitis; father at 63 from asthma. Their oldest child died at 61 from cancer; a brother of the patient died at 32 from consumption, a sister at 18 from pneumonia. Patient had pneumonia when eight years old. At 18 she married, had five children, of whom three died in infancy. She had five or six miscarriages from natural causes. While pregnant the first time she contracted erysipelas from her washerwoman.

About ten years ago she had inflammatory rheumatism and soon after developed jaundice. Since that time she has been suffering almost constantly from pains in the right side of her abdomen, severe constipation and hemorrhoidal troubles. Appetite very poor; while food does not cause her distress, she has a distaste for it. Menopause at 45.

Patient was informed by her physician that she had cancer of the womb. Previous to coming to me she had been treated twice a week for a year for womb trouble.

In appearance she looked much older than she was. She was extremely emaciated, no fatty tissue being left. Temperature 100°, pulse 120, heart and lungs normal, considerable increase of physio-

logical cyphosis of the dorsal spine. The adipose tissue of the abdominal walls had so completely disappeared that both hands could easily grasp the liver, which extended down to the umbilicus. There was no other tumor in the abdominal cavity. Uterus and annexa were normal; the slight bloody discharge ceased after a few days. Patient suffered psychic depression (carcinomaphobia) and great prostration; slight icterus.

Diagnosis: Retracted gall-bladder with infection and adhesions to the duodenum or transverse colon, with a possible carcinomatous degeneration of the gall-bladder. Operation at the German Hospital under morphine, scopolamine, and nitrous oxide-oxygen narcosis. The liver was found to be enlarged, of a light yellow color like that in phosphorus poisoning, and studded with innumerable tumors of a gray color, the largest not larger than a pea. Peritoneum normal, smooth, and glossy. Gall-bladder normal, no adhesions. The patient's condition prohibited exploration of the abdominal cavity for primary carcinoma and the abdominal cavity had to be hurriedly closed. Patient recovered from the operation within three days.

A week after the operation 0.0005 of tuberculin T.R. was injected in the arm. A typical local reaction with rise of temperature, nausea, and general prostration followed. This result encouraged me to continue treatment with tuberculin for six months, at intervals of six days to two weeks, with the result that the patient now regards herself as well and able to work. Although the liver has not perceptibly decreased in size, the pains are gone.

Case II.—Mrs. J. R., 42 years old, married at 29; usual diseases of childhood, always healthy except very anemic at puberty. First menstruation at eighteen; menstruation always painful during the first or second day, until after the birth of her first child. Family history as to specific infection and tuberculosis negative, except that one older brother died of consumption. Patient has two healthy boys, no miscarriages.

Ten years prior to present trouble patient had an attack of appendicitis and was treated for the same for five weeks, the treatment consisting mostly of rest and purgatives. After this she had pain in the right side, which would yield to the free use of cathartics. The right side continued to be always very sensitive. At the end of last September, after having attended a series of social functions, the patient was seized with a violent pain in the abdomen, which lasted twenty-four hours. Vomiting was frequent and she could not keep food on her stomach. The patient is well-nourished, with florid complexion. Heart and lungs normal. Stomach meteoristic and tympanitic on percussion. Abdominal walls do not show spastic contraction characteristic of inflammatory conditions.

Diagnosis in suspense. Treatment: No nourishment by mouth. Permanent irrigation of the rectum. Electric light baths over the abdomen. Peristalsis is stimulated by electric light and heat to such an extent that in active inflammatory conditions the pain becomes unbearable by the end of the first fifteen minutes. However, in this case the relief produced by heat and light at the same time proved that there was no acute appendicitis. It took three weeks of the permanent use of cathartics, mostly castor oil and Carlsbad salts, to get rid of the coprostasis. A large amount of white mucus was expelled with the stools. The temperature ranged between 100° and 103°. Pulse at times was weak, 90 to 100. After the colon had been thoroughly emptied there was found in the right iliac fossa a hard tumor, the size of a child's head, which apparently started from the os ilium. The lower border of the tumor was near the horizontal ramus of the os pubis, the upper a hand's breath from the arch of the ribs, and it extended to the middle line. From the umbilicus upwards the tumor felt like a pyramid standing on a broad firm basis. The external border was near the ramus of the iliac bone. The large intestine could not be felt.

From the first my impression was that of a large inoperable osseous sarcoma. The Roentgen picture, however, taken by Dr. Patrick O'Donnell, disproved the connection of the tumor with the os ilium or its periosteum. The rise of temperature, the history, which showed a longer duration than could be the case in malignant growths, suggested the possibility of a tumor of inflammatory origin, although no signs of a tuberculous lesion could be found. Drs. John B. Murphy and Otto L. Schmidt on consultation agreed with this theory.

On October 14 there was given the first injection of tuberculin T.R., 0.0001. This was followed by a typical local reaction and increased pain in the abdomen. From October 14 to November 10 very little nourishment was retained; some days nothing was tolerated by the stomach. October 14, second injection. Temperature before injection 98.6° in the evening; 99.2° on the third day after the injection. November 7, temperature before injection 99°; 100.2° third day after injection. Three days after this injection her pulse became very poor, 128, and digitalis had to be administered during the night. Her psychic condition grew alarming. She could not remember anything and repeated the same questions hundreds of times. There was a decided strabismus divergens which interfered seriously with her vision.

Simultaneously with the appearance of the psychic symptoms there was a marked change in the tumor. It decreased from now on constantly. Taste for food returned; vomiting ceased, and there was a slow but steady improvement in her psychic condition. On November 16 there was observed a parotitis of the right side, which was very painful to the touch and disappeared gradually within a week. There was also an enlargement and sensitiveness of all the lymphatic glands of the neck and inguinal region. November 12, 13, and 14 she was unable to urinate and had to be catheterized. All these alarming symptoms were attributed to the allergic action of tuberculin T.R., so that there was an interval of twenty days before the next injection on November 27. During this time there was a steady though very slow improvement in her mental condition. The minimal dose applied this time produced a rise of temperature of only four degrees. There were further injections with the typical local reaction on December 3 and December 19, when her temperature rose to 99.9° on the 20th. On that date there came with the stools a large amount of glassy mucus and shreds of mucous membrane. On January 11 large tubular pieces of mucous membrane were expelled, preceded by slight colicky pains on the right side. The same occurred on January 3, February 21, and February 24.

Simultaneously the tumor decreased in size and gradually we were able to differentiate the intestine

from the underlying tumor. The wall of the intestine, which felt like a rigid tube, gradually became more pliable and less sensitive to the touch. It could be felt that the part of the tumor which extended over to the rim of the os ilium was in reality an interstitial inflammation of the ileopsoas muscle, for gradually more fibers of the muscle could be felt to emerge from the tumorous mass.

As soon as possible in December the patient was allowed to sit up and enjoy the open air. On January 14 she was able to take her first walk outdoors. During all this time she was given a purin-free and starch-free diet and one to two ounces of castor oil daily. On January 21 examination showed the presence of a great number of typical tubercle bacilli in the feces.

Now, on May 5, the patient is doing well. The tumor has disappeared, only a hard mass just behind the cecum remaining, which appears to be calcified retroperitoneal lymph glands. The cecum and the lower third of the colon ascendens are thickened, but somewhat movable towards the median line. There is no symptom which would indicate a stricture at the valvula Bauhini. Stools are normal. The urine is clear. Appetite good. The patient is able to walk about two miles without fatigue and to climb stairs. Of late her mental condition has been practically normal.

In both these cases the primary tuberculous focus could not be found. In both the clinical diagnosis was malignant growth. In the first case the opening of the abdominal cavity may have benefited the patient, as it is well known that tuberculosis of the peritoneum is favorably influenced by the admission of light and air. In the second case an operation would have been a gross error, as an osteosarcoma of this size and in this location could not be radically removed. The tumor being inflammatory and of tuberculous origin, the establishment of communication with the atmosphere would have given a chance for mixed infection.

Conclusions.—1. Tuberculous toxemia, as well as the tubercle bacillus itself, must be regarded as factors in the etiology of clinically malignant tumors.

2. While both the above cases belong clinically in the province of the surgeon, Case I hardly derived any benefit from the operation, and Case II would have succumbed to an unavoidable mixed infection following laparotomy.

3. The modern surgeon should have at his command the various biological tests, so as to be able to obtain a biological diagnosis before performing any operation for tumors and ulcers.

4. The symptoms of disturbance of the brain in the second case cannot be explained except by assuming an anaphylactic action of the albuminous substances contained in tuberculin T.R.

32 North State Street.

False Hourglass Stomach.—Klose describes cases of so-called spastic or intermittent hourglass stomach which may give the same röntgen picture as the organic affection. It is seen in hysterical vomiting, hysteria without vomiting, in gastric neurosis, and irritable states. A second exposure with negative results may be sufficient for the diagnosis. There is, however, a form of intermittent hourglass stomach due to perigastric adhesions. When empty these stomachs show an hourglass shape which disappears when they are filled. This affection occurs much more infrequently than the purely functional one.—*Deutsche medizinische Wochenschrift.*

SUNSTROKE AND HEAT PROSTRATION.

By ISRAEL BRAM, M.D.,

PHILADELPHIA, PA.

Though sunstroke (insolation) and heat prostration are both due to exposure to excessive heat, the diseases are different in character, each presenting a different symptom complex, and each demanding a different mode of treatment. It is very important to be able to distinguish promptly one disease from the other, for to treat sunstroke as a case of heat prostration or *vice versa* may prove fatal to the patient.

Etiology.—The causes common to both sunstroke and heat prostration are excessive heat and moisture in the air, improper quality or quantity of clothing, unhygienic habits, alcoholism, physical and mental fatigue, overeating, and the presence of a lowered constitutional resistance. One attack of either condition predisposes to another.

Symptomatology.—Sunstroke usually occurs during the afternoon, in persons exposed to the direct rays of the sun, in a still, hot, humid atmosphere. Soldiers on the march, roofers, bricklayers, hucksters, etc., are all liable to insolation or sunstroke. The symptoms of sunstroke are quite characteristic, but may resemble an attack of apoplexy or uremia. There is sudden unconsciousness, with or without convulsions or paralysis, a flushed, hot, dry skin with occasional cyanosis, injected conjunctiva, contracted pupils, high tension bounding, rapid pulse, and irregular respiration, sometimes of the Cheyne-Stokes type.

The temperature must be taken by axilla or rectum, preferably the latter, and is found to be anywhere between 105° and 110° to 113° F. There is suppression of urine, or incontinence of urine and feces. This condition may continue on for from a few hours to a day or more, ending in death through paralysis of the vital centers and asphyxia, or through a complication (pneumonia, meningitis, etc.) or in recovery, with or without such sequellæ as imbecility, poor memory, chronic headache, and an extreme susceptibility to heat.

Heat prostration does not necessarily depend on direct exposure to the sun's rays, but occurs in persons working in close, excessively hot places, as mills, foundries, boiler-rooms, kitchens, etc. The symptoms of heat prostration usually come on insidiously, with such prodromal symptoms of headache, dizziness, nausea, vague bodily pains, and weakness. The patient soon becomes exhausted, and takes to his bed.

The skin is cold, pale, and clammy, there is a rapid feeble pulse, with disordered vision and hearing, and occasionally partial or complete unconsciousness. The temperature is normal, subnormal, or slightly above normal (100° to 102° F.). In grave cases there may be syncope and collapse, though usually an uneventful recovery occurs within a few days.

Diagnosis.—It is of utmost practical importance to differentiate sunstroke from heat-prostration, and from such conditions as apoplexy, uremia, and meningitis. In differentiating, the following points of interest must be remembered: the history of the affection, the mode of onset, the presence or absence of fever, the state of consciousness, the urine, skin, pulse, respiration, and the condition of the reflexes. The following differential diagnosis is useful:

SUNSTROKE (INSOLATION).	HEAT PROSTRATION.
1. History of direct exposure to the sun.	1. History of exposure to excessive heat, usually indoors.
2. Onset sudden, often with convulsions or paralysis.	2. Onset gradual, no convulsions or paralysis, but prodromes (headache, dizziness, nausea, etc.).
3. Complete unconsciousness.	3. Rarely loss of consciousness.
4. Skin hot, flushed and dry.	4. Skin cold, pale, and clammy.
5. Injected conjunctiva, contracted pupils.	5. Conjunctiva pale, pupils dilated, or normal.
6. Temperature very high (105° to 113° F.).	6. Temperature normal, subnormal, or slight fever (100° to 102° F.).
7. Pulse high and bounding.	7. Pulse weak and thready.
8. Respiration irregular, often Cheyne-Stokes in type.	8. Respiration shallow and sighing.
9. Course brief, with guarded prognosis, terminating in death or recovery in from a few hours to a day or more.	9. Course greater in duration, and prognosis good, usually terminating in recovery within a few days.

Treatment.—The treatment may be considered under the heading of (*a*) prophylactic, and (*b*) treatment of the attack.

The prophylactic treatment of sunstroke and heat-prostration consists in overcoming the causal factors. Overeating and indulgence in alcoholic beverages should be avoided. Proper ventilation at home and at work, frequent cold sponges or baths, and the wearing of light-colored, light-weight clothing are imperative. The function of the bowels, skin, and kidneys must be kept in a normal state. Physical and mental fatigue and prolonged exposure to the sun's rays should be avoided. The imbibition of copious quantities of wholesome water (not ice-water) is particularly beneficial, by promoting the action of the skin and kidneys.

The treatment of the attack in sunstroke is decidedly different from that of heat prostration. In the former, excitation is a decided symptomatic feature, in the latter, depression.

The subject of a *sunstroke* should be immediately immersed in an ice-water bath, kept at a temperature of 40° F., during which time the skin should be rubbed vigorously to bring the heated blood of the interior to the surface of the body. The lowering of the body temperature should not be too sudden, else fatal collapse will result. If the fever has been reduced to 102° or 101° F. the patient should be removed to a cot in the shade and covered with a sheet. The rectal temperature should be frequently taken, and any marked rise should be combated with more ice baths. In marked cases venesection, with the intravenous injection of physiological saline solution, will result happily. The head should be kept cool by means of an ice cap, and the feet may be bathed in hot mustard water. In the event of cardiac weakness, hypodermic injections of strychnine or camphor and ether should be given. In some cases ice water enemata or the needle spray of cold water may be given. A course of calomel should be given to clean the bowels and overcome hepatic torpidity. As soon as food can be taken, liquid diet should be given, including skimmed milk, buttermilk, orange-albumin, and plenty of water.

It must be remembered that one attack of sunstroke predisposes to another, so that due precautions must be taken to avoid them. It may be necessary for some patients to remove to a cooler climate.

A patient with *heat prostration* should be treated, in some respects, entirely different from one with sunstroke. Here we often have subnormal temperature, necessitating a *hot* bath. If the temperature is above normal, sponging with moderately cold water will soon overcome it, but an ice bath *must not be given*. Keep the patient in a cool place, avoid constricting clothing about the neck and chest. To overcome the tendency to syncope, aromatic spirit of ammonia, spirit of glonoin, or inhalations of amyl nitrite may be given. Strychnine, digitalis, iron, and a concentrated nourishing diet should be given to combat weakness in convalescence. When recovery is complete, measures to avoid a relapse should be instituted.

In conclusion, it would be wise to say that observance of common-sense dietetic and hygienic rules, proper clothing, the avoidance of alcoholic beverages and other conditions which tend to devitalize the system will serve to prevent both sunstroke and heat prostration.

1714 N. Seventh Street.

Hyperostosis Cranii.—E. B. Waggett and E. D. Davis report the case of a newsman, aged 22, who complained of swellings of the face and of nasal obstruction. He first noticed the swellings at about the age of 16, one month after receiving "a punch on the nose." He had never been abroad, and none of his family were similarly affected. He was given a mixture of mercury and potassium iodide for six weeks, and no change in his condition was noted. The patient was of poor physique, but well nourished, and had well-marked symmetrical osseous swellings involving the nasal processes of the maxillæ and extending on to the facial surfaces of the bodies of the maxillæ. The maxillary antra were opaque to transillumination, but the frontal sinuses were normal. The nasal bones were unaffected, but both sides of the nose were obstructed by the hard osseous swellings, which could both be felt and seen within the nostrils. The infraorbital margins were involved and there was lacrymal obstruction on the right side, but in other respects the orbits were apparently normal. The optic disks were normal. In addition, there was a diffuse smooth swelling of the body of the mandible, to the right of the mental eminence, and surrounding the mental foramen. The teeth were carious and there was considerable oral sepsis. The left ear was normal, but he had otitis media on the right. There were neither signs nor history of syphilis, but the Wassermann reaction was positive. Skiagrams showed both maxillæ occupied by dense masses of bone. The rest of the skeleton was normal.—*Proceedings of the Royal Society of Medicine.*

Fractures and Separations of the Epiphysis in Children.—Savariaud has found evidences of the consolidation of intrauterine fractures in new-born children. Fractures are much more frequent than dislocations in children. They consolidate very quickly, and in the frequent greenstick fractures the child may use the limb for some time after the partial fracture has taken place, and the diagnosis may be made only when the exuberant callus is present. Rachitis and prolonged immobilization of the limbs in plaster act as predisposing causes of fracture, since there is absorption of bone in them. Separation of the diaphysis and epiphysis occurred frequently since there is a zone of imperfect ossification at the point of least resistance. A violent distortion of the ligaments occurs, and the periosteum remains attached to the epiphysis that is being separated from the diaphysis. If complete reduction does not occur there will be formed a band of constriction due to rapid ossification at this point which will cause an arrest of development of the bone.—*Journal de Médecine de Paris.*

MEDICAL RECORD.

A Weekly Journal of Medicine and Surgery.

THOMAS L. STEDMAN, A.M., M.D., EDITOR.

PUBLISHERS

WM. WOOD & CO., 51 FIFTH AVENUE.

See fourth page following reading matter for Rates of Subscription and Information for Contributors and Subscribers.

New York, July 27, 1912.

RECENT PROGRESS IN THE STUDY OF PNEUMONIA.

AT no time more than the present has the prospect seemed brighter that a successful serum-therapy of pneumonia would be achieved. Many years of patient clinical and epidemiological study have contributed naught of any real value in reducing the high mortality or curbing the increasing prevalence of this disease. The ubiquity of the pneumococcus, and the danger of the healthy individual becoming the innocent carrier of even malignant types of this microorganism, were clearly revealed by the investigations carried out nearly a decade ago by the Pneumonia Commission of the City of New York. Pneumonia is a disease that presents many difficult bacteriological and clinical problems. These have been surveyed in a most illuminating manner in the Lumleian lectures recently delivered by Percy Kidd before the Royal College of Physicians of London, and abstracted in recent issues of the MEDICAL RECORD. One of the important facts emphasized by Kidd is that the frequency with which pneumonia appears under the guise of a general infection without local manifestations stamps this disease as of septicemic origin. The researches of Neufeld and Haendel have shown that the crisis in pneumonia depends on the formation of antibodies, which can be recognized experimentally in animals and in the blood of convalescents from pneumonia. These observers have pointed out that the therapeutic value of the antibodies depends upon the production of a sufficiently potent serum, and on the rapid introduction of large quantities of the latter into the human body. In this connection there must not be overlooked the recent discovery by Lamar that the coincident injection of sodium oleate greatly increases the efficacy of this serum.

Two important papers in which are set forth the results of his studies on pneumococcus infection in animals are presented by Augustus B. Wadsworth in the *Journal of Experimental Medicine*, July 1, 1912. The first of these papers deals with the action of pneumococcus cultures on animal tissues, and the action of immune sera on the pneumococcus. The fact is emphasized that lobar pneumonia is only one phase of pneumococcus infection. The injection of culture filtrates of the most virulent pneumococci causes little or no disturbance, nevertheless the animal at the same time develops an immunity to the action of virulent living pneumococci. The same is true if dense suspensions of pneumococcus cells are used instead of the filtrates. From these experiments it is concluded that dead cultures of the pneumococcus do not contain the active poisons elaborated by the organism in infection, and that these cultures contain altered or degenerated poison which, when liberated in infection, gives rise to more powerful poisons, but when formed in culture is active only as antigen. As the result of further experiments it was shown that virulent pneumococci are extremely insusceptible to phagocytosis owing to the presence of substances retained by the pneumococcus cell even after it is killed by heat. As long as these substances are retained by the pneumococcus they are not acted upon by an immune serum; but when liberated they are rendered inert by the latter. Nonvirulent strains of pneumococci are subject to phagocytosis. The insusceptibility of virulent pneumococci to the latter action is attributed chiefly to qualities acquired by the microorganisms during their propagation through animals. Under certain conditions in the tissues the virulent cells are so altered that they become susceptible like the nonvirulent strains. In man and the dog phagocytosis is active during recovery, but in the rabbit this action does not appear.

In the second paper Wadsworth discusses the action of immune sera on pneumococcus infection. He suggests that in lobar pneumonia of man the lung lesion plays a minor part in determining the disease as a whole, the bacteriemia being responsible for many of the manifestations seen at the bedside. The protective mechanism of the lung is, however, far more efficient than that of the blood stream, for material that is infectious when inoculated under the skin or into a vein in the dog or rabbit, is innocuous when injected into the lungs through the trachea. The extensive lesion in the lung in lobar pneumonia is an expression of the individual's protective mechanism, which may be adequate or inadequate. In man and in the dog extensive lung involvement may cause little discomfort, and serious symptoms may develop even when the lesion in the lungs is comparatively slight. Symptomatically the disease is a systemic reaction to the poison, whether this is derived from the lung lesion or from the bacteriemia. These facts are strikingly illustrated in the case of experimental pneumonia in the rabbit and dog. In the former pneumococci develop without local tissue reaction; the protective mechanism is slight and inadequate, and the animals quickly die from the bacteriemia. On the other hand, the dog is relatively insusceptible, the pneumococci causing an extensive local tissue reaction, and although extensive lung lesions are present there is neither sustained temperature nor recovery by crisis as in man.

Taking his cue from the facts that in man or animals recovery is due to the immunity incited and that previous attempts at achieving a serum-therapy were focused on one phase of immunity as a whole, Wadsworth has succeeded in preparing sera in animals by means of injections with virulent pneumococci, which sera are effective in curing pneumococcus infection in the most susceptible

animals. The details of Wadsworth's experiments may be obtained by consulting the original paper. It will suffice to present in this review his main conclusions. He notes that immune sera vary greatly in their curative value, and that while certain sera may possess protective value, this is not necessarily indicative of curative action. Treatment with the serum of normal rabbits may prolong the course of pneumococcus infection in the rabbit, but this action is slight. Sera from animals immunized with dead pneumococcus cells washed free from their products, and sera from animals immunized with culture filtrates free from pneumococcus cells, possessed only a slight curative value. On the other hand, when an animal was immunized with virulent living cultures its blood serum acquired a marked curative action. After pneumococcus infection in the rabbit had become established, treatment with this serum induced crisis and cured the animal. Virulent pneumococci are singularly insusceptible to the action of immune sera in the test tube, nevertheless they succumb to these sera in the body of the infected individual.

"Diphtheria and tetanus organisms," states Wadsworth, "give rise to powerful toxins, but the parasitism of these organisms is slight and their development is localized. Diseases produced by these organisms are toxemias and neutralization of their toxins by antitoxin puts an end to the disease. The pneumococcus gives rise to toxic substances which are less active or active only in the body tissues, but the parasitism of this organism is marked and its development is rarely localized. Nevertheless, the manifestations of the disease arise from the action of the bacteria poisons on the tissues. The neutralization of the pneumococcus poisons by immune serum puts an end to the symptoms of the disease, but the pneumococci survive as harmless parasites until destroyed by lysis or phagocytosis." It is pointed out that crisis is simply one phase of recovery which does not differ fundamentally, whether it is sudden and complete, as in crisis, or incomplete or prolonged, as in lysis. Both processes represent the neutralization of the pneumococcus poison. The pneumococci themselves are destroyed by lysis extracellularly in the rabbit and intracellularly by the process of phagocytosis in the dog and in man.

It is to be hoped that in the near future there will be available for the treatment of lobar pneumonia in man the immune sera which Wadsworth has found so effective in curing the disease in the rabbit, which is most susceptible to the toxic action of the pneumococcus. In attaining results that will no doubt contribute to the saving of many valuable lives the fruits of patient investigation conducted with one definite object in view will be amply realized.

PRESENT STATUS OF THE EPIDEMIOLOGY OF BUBONIC PLAGUE.

Although presumably trustworthy accounts of bubonic plague are readily accessible, the great fluctuations in individual epidemics render valuable all special information based on observation of current episodes; and it is also highly instructive to contrast contemporary epidemics in different parts of the world. For example, some accounts of the pneumonic form state that there are no survivors, which fact is only reassuring in as far as it excludes the possibility of carriers. But we learn that in Egypt the mortality from this form was but 85 per cent. and that the survivors became dangerous carriers, bearing the germs in their respiratory organs for a long time and menacing their environment by coughing and expectorating.

At a recent session of the Aerztlicher Verein of Munich (*Berliner klinische Wochenschrift*, July 1) Dieudonné summed up our contemporaneous information on the epidemiology of the disease, and stated among other facts that it progresses but slowly from house to house. For this reason we do not see pandemics nowadays, and in communities with a very mixed population socially, the higher classes may escape throughout as a result of their superior knowledge and sanitary prophylaxis. This, of course, holds good for typhus, cholera, and variola, but is in marked contrast with other epidemics like influenza, measles, etc., which alone are truly pandemic.

The chief increase in our knowledge of epidemiology is connected with animals—domestic and wild. It is now known that the rat suffers from the disease in a peculiar chronic form, located principally in the spleen. This disease has an exacerbation in the warm months.

If the disease were not insect borne its incidence, both in man and animals, would modify the epidemiology profoundly. Perhaps there is no affection in which so many different species of insects act as intermediaries. The author enumerates bedbugs, ants, fleas, and mosquitos (the latter possibly a misprint—culex for pulex?). The rodents in a community, therefore, become quickly infected. For many years when this plague lay fallow in the tropics cases were reported now and then from Asiatic Russia. We can now realize that the petty episodes described during these years must have been due to some of the wild rodents. Had rats been affected the disease should have been much more prevalent. It is now known that the feces of the flea can transmit the disease.

The prophylaxis of the disease at the present day includes quarantine disinfection with certain gases, destruction of rats witth phosphorus, personal cleanliness, masks and suits for doctors and nurses, and inoculation with dead cultures of the *Bacillus pestis*.

THE SIGNIFICANCE OF GASTRIC STAGNATION.

So much has been written and taught about the value of the chemical examination of the gastric contents after a test meal that the examination of the fasting stomach has been lately much neglected. Yet no examination of the gastric functions is complete without the determination of the presence or absence of stagnation of food, and such determination is frequently much more valuable as a therapeutic indication than one or another deviation from the normal chemical character of gastric juice. Moreover, gastric stagnation is by many thought to

be present only when large quantities of food remains are obtained in the morning before breakfast; that this, however, is not the case is the earnest plea of Dr. E. Fricker in a recent number of the *Correspondenz-Blatt für Schweizer Ärzte* (Vol. XLII, No. 12). This writer's numerous examinations have shown that normally in the morning the stomach is either quite empty or contains a little mucus, swallowed saliva, or gastric juice, but no food remains. This results in a sort of "self cleansing" of the stomach, so that the numerous bacteria, etc., introduced with the food are deprived of sustenance and are not unduly numerous in the normal stomach. Quite different, however, is the state of affairs when stagnation of food is present, though it be of microscopical nature only, the material for its determination being obtained from the particles adherent to the fenestrations of the stomach tube or by centrifuging the stomach contents obtained through the tube. Here bacteria are abundant and the most significant of these are sarcinæ and the well known Boas-Oppler bacilli. The former may be present even if hyperacidity exists, and, according to Fricker, their presence is an indication of stagnation even though at certain times they are not accompanied by food remains. Boas-Oppler bacilli, on the other hand, are quickly destroyed by high acid content; moreover, they are significant only when present in numbers sufficiently large to make them very conspicuous throughout the field of vision of the microscope.

How close is the relation between stagnation of the stomach contents, the presence of sarcinæ and Boas-Oppler bacilli, and the functional disturbances of the stomach, is well shown by a series of cases observed by Fricker. In 27 cases of stagnation with little change in the chemical character of gastric juice, in 25 of which benign stenosis of the pyloris was shown at the operation, sarcinæ were constantly present in the material obtained from the fasting stomach. On the other hand, out of 23 cases of gastric cancer with marked deviation from the normal chemical character of the gastric juice, Boas-Oppler bacilli were found in abundance in 21 cases.

Accordingly, Fricker recommends the following procedure in examining a patient with gastric symptoms: (1) An evening meal consisting of soup or milk, meat, and rice. (2) Emptying the stomach next morning, about twelve hours later, and careful examination of the food remains if obtained, or of the particles adherent to the tube. If nothing is obtained, lavage and examination of the sediment of the wash water. (3) Test breakfast, and examination of the chemical character of the gastric contents obtained after it. Of course, the microscope must be employed for the discovery of sarcinæ, Boas-Oppler bacilli, and the study of the minute particles of food, their behavior on addition of Lugol's iodine solution, etc., etc.

The therapy of gastric stagnation advocated by Fricker is radical. He grants that medical measures, such as dieting, lavage of the stomach, etc., may keep the symptoms in abeyance. However, competent surgery, in most cases the operation of gastroenterostomy, is preferred by Fricker as a really curative therapy.

Intubation of the Aorta.

The feasibility, at any rate in the dog, of an operation that may eventually prove of service in the treatment of aortic aneurysm and of traumatic lesions of the aorta in human beings, has been demonstrated by A. Carrel (*Journal of Experimental Medicine*, July 1, 1912). This investigator has already shown that a segment of vein can be successfully grafted on the thoracic aorta; that wounds of the abdominal aorta can be repaired by means of a piece of rubber covered with vaseline, and that the circulation can take place for six days through a paraffined glass tube lying free in the abdominal aorta. These experiments were all performed on dogs. In the latest developments of his investigations along this line, Carrel inserted into longitudinal incisions in the thoracic aorta of dogs paraffined tubes of glass or aluminum, nine or ten millimeters in diameter and forty-five millimeters long. The tubes either distended the vessels, fitted them exactly, or were smaller than the caliber of the aorta. The tubes were fixed in this artery by means of silk ligatures that had been put around the vessel previously. The results of the experiments thus far performed have shown that aortic blood can flow through a glass tube for more than three months without the occurrence of an obliterative thrombus. Laceration of the arterial wall causes a deposition of fibrin and partial or complete occlusion of the tube or vessel. Carrel suggests that the use of a tube of proper caliber, form, and composition, as a smooth-edged gold tube of relatively small caliber, may be followed by better results; and that it is possible to line the tube with a vein in order to prevent more surely the occurrence of a thrombus.

Pseudotuberculous Experimental Leprosy.

The analogy between the bacilli of Koch and of Hansen has been noted from the very outset of bacteriology. So marked is it that much wonder has been expressed as to the very dissimilar character of the two diseases caused thereby. That two such processes should be so infectious and malignant, caused by such similar organisms, and yet differ so much among themselves, and present so few points in common constitutes a paradox, especially when we bear in mind the close resemblances between syphilis and yaws, two affections which also show a marked analogy in their causative agencies. Recent experiments appear to show that in experimental medicine this dissimilarity will not obtain and that the lesions of experimental leprosy will be found to bear a very close resemblance to both clinical and experimental tuberculosis. It has long been know that lepers react positively to tuberculin and recently it has been learned that tuberculous subjects give positive reactions to nastin. At a meeting last winter of the Aerztlicher Verein of Hamburg (*Berliner klinische Wochenschrift*, June 10) Much reported that animals previously sensitized with sterile cultures of tubercle bacilli became susceptible to leprous inoculation. In guinea pigs and goats alike subcutaneous injections of leprosy bacilli set up what appeared to be typical tuberculous cold abscesses, the size of a bean to that of a pigeon's egg. The pus was creamy and poor in cells and contained bacilli in abundance. To what extent the tuberculous type of lesion could have been due to the sensitization is naturally not in evidence.

News of the Week.

The Plague Situation.—Up to July 19 no new cases of plague had developed for several days in either Cuba or Porto Rico, yet as examinations of a large number of rats in Porto Rico had shown the presence of the infection in at least 2.5 per cent. of the animals, the Government officials were increasing rather than relaxing their watchfulness. Wisely, as it appeared, for on July 20 three new cases were discovered in the suburbs of San Juan, making a total of thirty-seven cases and twenty-six deaths in the island since the disease was first recognized. The commission, consisting of Col. Jefferson R. Kean, Major Frederick F. Russell, Lieutenant Fred H. Foucar, and F. Y. Howard, sent from Washington to study conditions as regards the plague in Porto Rico, reached New York on July 15. In Havana a third case was discovered on July 23. Unofficially it was stated that while the disease had been checked for the present in San Juan, the commission considered that it would be impossible to eradicate it until modern sanitary methods had been introduced and especially until all the dwelling houses had been raised from the ground. The sanitary conditions in the surrounding country were found to be very bad. In all the larger ports of the United States the health authorities are paying careful attention to the situation and watching all incoming ships and passengers. The Health Officer of the Port of New York has announced that as the result of some experiments it has been decided that anhydrate liquefied sulphuric acid gas will prove to be efficient as a destroyer of rats on ships as well as being quicker and more easily handled than the old method, and that he will therefore adopt its use here. The Health Officer has also been empowered by Governor Dix to expend whatever money is necessary to fumigate all ships entering the harbor from infected ports, using the fees collected by his office. In Philadelphia, the Director of the Department of Health and Charities, wishing to make a personal examination of all rats in the city for the purpose of ascertaining if any were infected with bubonic plague, issued a call to the citizens on July 15 to take all rats possible to his rooms in the City Hall. The response was so immediate and hearty, however, that three days later he was compelled to withdraw his invitation, having come to the conclusion that Philadelphia was largely populated by these animals.

Poliomyelitis.—A number of cases of infantile paralysis have appeared in this city, probably the forerunner of an epidemic of the disease as predicted in the MEDICAL RECORD of last week. In Buffalo, N. Y., eight cases were discovered by inspectors of the Department of Health on July 20. None of the cases had been reported, and the Health Commissioner ordered the attending physicians to appear before him on July 22 and show cause why they should not be prosecuted. Dr. Neustaedter writes that an investigation is being conducted at Cornell Medical College regarding the infectivity of dust, and requests that information be sent to the college regarding cases, or suspected cases, in order that the sweepings of the sick-room may be collected and examined.

Lectures on Hygiene.—The New York State Department of Health has undertaken the education of women and girls throughout the State in the subject of sex hygiene. The work will be carried on in connection with existing institutions and organizations as far as possible, and by means of lectures, circulars, and exhibits. The following staff of special lecturers has been appointed: Dr. Rosalie S. Morton, New York; Dr. E. Hamilton Muncie, Brooklyn; Dr. Lusia E. Heaton, Canton; Dr. O. M. Grover, Dunkirk; Dr. Mary H. Potts, Elmira; Dr. Adelaide Dutcher, Syracuse; Dr. Agnes E. Page, Albany; Dr. Cora B. Lattin, Buffalo; Dr. M. May Allen, Rochester; Dr. Ina V. Burt, Phelps; Dr. Mary G. Day, Kingston; and Dr. Angeline Martin, Utica. The New York State Cancer Laboratory will cooperate in preparing lectures dwelling upon the early diagnosis, means of prevention, and necessity for early skilled treatment of cancer.

Danger of Rabies.—The Board of Health of New York City at a recent meeting adopted a special order calling for the shooting of unmuzzled dogs in the Borough of Richmond where, for some time past, complaints of dogs running at large have been unusually frequent and where a number of persons have been bitten. Since January 1, 1912, among 210 dogs sent to the Department of Health from the Borough of Richmond for examination, seventy cases of rabies were found. The ordinary jurisdiction of the Department in the matter of dog bites extends only to the removal of such dogs for observation and their destruction if found rabid or vicious to such an extent as to render them unfit to be at large. At times of special danger fram rabies, however, the Board of Health under its general power to abate nuisances to protect the public health may adopt a special order calling for the killing of unmuzzled dogs on the streets, as it has done now. Commissioner Lederle also suggests that it may be necessary to extend the special order to include other boroughs unless the general ordinance requiring the muzzling of dogs is more generally complied with.

A Cure for Diabetes Not Found at Cornell.—Dr. W. M. Polk, Dean and Director of the Cornell University Medical College, writes: "A recent publication in the public press to the effect that a 'cure' for diabetes had been found and that it had been worked out under the auspices of the Cornell University Medical College has been called to my attention. Please state that our School knows nothing of the 'cure' or of the measures pursued to establish its value."

Car Hits Ambulance.—An ambulance from St. Vincent's Hospital, New York, answering a sick call, was struck by a Seventh avenue car at Elizabeth and Grand streets on July 17, and overturned. Dr. Kilbourne, the surgeon in charge, was bruised and shaken up, and the driver of the ambulance sustained a fractured collar bone.

Canal Zone Report.—The Department of Sanitation of the Isthmian Canal Commission, through Dr. John L. Phillips, Acting Chief Sanitary Officer, reports that during the month of May, 1912, there were among the employees a total of 33 deaths, of which 19 were due to disease and 14 to violence, making a total annual average death rate per thousand of 8.01, which is only slightly larger than the very low rate recorded for May, 1910. Five deaths were due to Bright's disease, 5 to lobar pneumonia, and 3 to pulmonary tuberculosis. The report closes with the words which have become so usual as almost to be overlooked: "No cases of yellow fever, smallpox, or plague originated on or were brought to the isthmus during the month."

Campaign Against Hookworm.—The Texas State Board of Health has begun a campaign for the eradication of the hookworm in that State, under the direction of Dr. M. H. Boerner of Washington, D. C. It has been found that the infection is particularly heavy in East Texas, 50 per cent. of the total population in some counties being infected.

Sues Telephone Company.—Dr. John Allen Hawkins of Pittsburg, Pa., has brought suit against the Bell Telephone Company, claiming damages to the amount of $25,000 because of the omission of his name from the Pittsburgh telephone directory.

Bad Eggs Kerosened.—Dr. R. B. Fitz-Randolph of the pure food division of the New Jersey State Board of Health on July 17 seized 1,000 pounds of eggs in the warehouse of a refrigerating company in Jersey City, and the eggs being unfit for use were treated with kerosene in order to prevent their sale.

Dr. Simon Baruch has been appointed consulting hydrotherapist to Bellevue, Gouverneur, Harlem, and Fordham Hospitals.

Dr. Herbert J. Smith of Philadelphia has been elected professor of dermatology in the Medico-Chirurgical College of that city, and will also act as professor of materia medica and anesthetics in the dental department of the college.

City Death Rate.—For the week ending July 13, the general death rate per thousand in New York City was 14.02, as against 18.22 for the corresponding week of last year, the difference of 4.20 points being equivalent to a decrease of 416 deaths. Although the temperature during the week was very high, the number of deaths from sunstroke was only 42, while in the same week of 1911, 288 deaths were ascribed to this cause. There was also a decrease of 50 in the number of deaths of infants under one year of age. For the first twenty-eight weeks of 1912 the death rate was 14.90 as compared with 16.35 for the same period of 1912.

New Hospital Dormitory.—The Willard Parker Hospital, New York, is to be enlarged by the erection of a five-story dormitory for which plans were filed recently with the Building Department. The new building will have a frontage of 51 feet on Fifteenth street and a depth of 100 feet, will be constructed of reinforced concrete, and will be fireproof. The cost is estimated at $80,000.

Two "Scientists" Die.—Within ten days of the death from scarlet fever of his thirteen-year-old daughter, Clayton J. Whipple, a Christian Scientist of Yonkers, N. Y., died of the same disease, having refused to permit medical treatment of either his daughter or himself. Both patients were attended by Christian Science practitioners who, in spite of their non-belief in disease, notified the Health Department of the existence of a contagious disease, and made no attempt to interfere with the establishment of a quarantine of the house and family.

Favor Marriage Restrictions.—The members of the New Jersey Branch of the Lutheran Synodical conference in session at Closter, N. J., recently went on record as opposing the issuance of marriage licenses unless the applicants were able to produce a physician's certificate to the effect that both are physically fit to marry.

Official Dipterologist.—The Director of the Department of Public Works of Philadelphia recently appointed an official mosquito slayer to that city at a salary of $3.85 a day, the city having made an appropriation $5,000 for the conduct of a war on these pestiferous insects. The title of "dipterologist" has been conferred upon the appointee whose reputation as a destroyer of mosquitos is said to be unequaled.

Investigating Milk Supplies.—At the request of the Trenton, N. J., City Commission, the Chief of the Division of Creameries and Dairies of the New Jersey State Board of Health is conducting an investigation into the 400 sources of the milk supply of the city, with a view to stopping the sale of unwholesome milk and punishing the offenders. Trenton at present has no system of milk inspection of its own.

Open Grenfell Institute.—Interesting ceremonies marked the opening on July 15 of the King George V. Institute for Fishermen and Seamen, at St. John's, Newfoundland, erected under the direction of Sir Wilfred Grenfell, medical missionary to Labrador.

Gift for Hospital Home.—The French Benevolent Society announces a gift from four of its friends of $40,000 for the completion of a $125,000 fund to be used to build a home for the aged and a training school for nurses in the rear of the French Hospital on West Thirty-fourth street, New York.

American Association of Clinical Research.—The fourth annual meeting of this society will be held in the New York Academy of Medicine, New York City, on November 9, 1912. There will be morning, afternoon, and evening sessions, the general public being invited to attend the last, and a notable program is in preparation. This association recognizing "the necessity for clinical research that shall produce a body of unquestionable clinical facts from which therapeutic principles may be deduced," aims to form centers of clinical research in all of the larger cities, such centers to endeavor to interest physicians, hospitals, and the public. Dr. James Krauss, 419 Boylston street, Boston, is the permanent secretary. Physicians in general are invited to attend the meeting.

Physicians' Association. — The New York Physicians' Association of the City of New York was incorporated in the Supreme Court on July 15. The purpose of the society is the holding of clinical meetings and scientific sessions, and it numbers among its incorporators Drs. Herman C. Freudenthal, William S. Gottheil, A. E. Isaacs, Robert Abrahams, and H. G. Watson.

Kentucky Health Officers.—The State and County health officers of Kentucky held their first annual conference in Louisville recently, every county officer being obliged to attend. The expenses of the conference were provided for in the annual appropriation given to the State Board of Health.

Typhoid Carrier.—The occurrence of a dozen cases of typhoid fever among children living in the same neighborhood in Elgin, Ill., recently, has caused the health authorities, after negative investigations of the water and milk supplies, to suspect that the disease is being spread by a typhoid carrier, similar to the famous "Typhoid Mary" of New York.

A Successor to Dr. Wiley as chief of the Bureau of Chemistry in the Department of Agriculture will shortly be appointed. The successful candidate is said to be Dr. James H. Beall of Scioto, Ohio.

Delegates to the British Medical Association.—Dr. Arthur W. Yale of Philadelphia and Dr. W. Benham Snow of New York sailed on July 11 for England, where they are attending the meeting of the British Medical Association in Liverpool.

Dr. W. W. Richardson, for six years physician-in-chief to the men's department of the Eastern Pennsylvania Hospital for the Insane at Norristown, has resigned as of October 1st, to engage in private practice.

The Fourth in New York.—A good indication of the wiser observance of the Fourth of July in New York is contained in the announcement of the Board of Ambulance Service that there were on that day this year 277 calls, or only 16 more than the daily average in all boroughs throughout the year, and 67 less than on the Fourth of July, 1911. The greatest decrease occurred in the Borough of Manhattan where the number of calls fell from 196 to 130. It is a matter of some congratulation that this year at least our national birthday was not celebrated by wholesale death and injury. In one thing, if not perhaps in all, we are becoming saner.

New Pasteur Institute.—The foreigners resident in Bangkok, Siam, are endeavoring to establish a Pasteur Institute there, not only for the treatment of rabies, but for bacteriological and serological work, and a meeting was held recently at the Hongkong and Shanghai Bank for the purpose of raising funds for the project.

American Hospital Association.—The fourteenth annual meeting of this association will be held in the Hotel Pontchartrain, Detroit, Mich., on September 24 to 27, 1912, under the presidency of Dr. Henry M. Hurd of the Johns Hopkins Hospital, Baltimore. Details as to the programme, etc., may be obtained from the secretary, J. N. E. Brown, M.B., 90 Charles street, East.

Pan-American Congress.—The Sixth Pan-American Congress will meet in Lima, Peru, on August 3 to 10, 1913, in connection with the Latin American Medical Congress and the Congress of Hygiene. The congress will be under the patronage of His Excellency the President of Peru and of the Minister of Foreign Relations, of Instruction, and of Fomentation. Its work will be divided into eight sections, covering anatomy and physiology; bacteriology and parasitology; medicine, surgery, hygiene, physics, chemistry, natural history, pharmacology, veterinary medicine, and odontology. Various excursions through the country are being arranged for those attending the congress, as well as many different means of making the journey to and from Peru.

Second District (South Carolina) Medical Association.—The annual meeting of this society was held at Blackville on July 2, and officers for the ensuing year were elected as follows: *President*, Dr. Josiah S. Matthews, Denmark; *Secretary-Treasurer*, Dr. Sophia B. Brunson, St. Matthews.

Dubuque County (Iowa) Medical Society.—At the annual meeting held in Dubuque on June 26, the following officers were elected: *President*, Dr. William L. Becker, Dubuque; *Secretary*, Dr. Mathias J. Moes, Dubuque; *Treasurer*, Dr. Anthony M. Loes, Dubuque.

Physicians' League.—Under this title a number of physicians of Brooklyn, N. Y., organized, on July 5, a new society for the study of economical and social phases of medicine.

Obituary Notes.—Dr. John Joseph Lawlor of Lawrence, Mass., a graduate of the Baltimore Medical College in 1897, and a member of the Galen Medical Society and the Amalgamated Physicians' Protective Association, died at his home on July 8.

Dr. Miles J. O'Reilly of Fishkill-on-the-Hudson, N. Y., a graduate of the Albany Medical College in 1874, died in St. Luke's Hospital, Newburg, on July 11, aged 60 years.

Dr. George S. Gove of Whitefield, N. H., a graduate of the Dartmouth Medical School, Hanover, in 1858, and a member of the New Hampshire State and Coos County Medical Societies, died at the home of his daughter in Greensboro, N. C., on June 28, aged 83 years.

Dr. James A. Miller of Sante Fe, New Mexico, a graduate of the Cincinnati College of Medicine and Surgery in 1870, formerly a member of the Pennsylvania State Board of Medical Examiners, and a member of the New Mexico State and Santa Fe County Medical Societies, died suddenly of heart failure on June 29, aged 68 years.

Dr. John Boyce Donaldson of Canonsburg, Pa., a graduate of the Medical Department of Western Reserve University, Cleveland, Ohio, in 1872, a member of the American Medical Association, of the Medical Society of the State of Pennsylvania, of which he was a former president, and of the Washington County Medical Society, having served the latter as secretary for many years, died at his home on June 29, aged 64 years.

Dr. John Russell Goodloe of Demopolis, Ala., a graduate of the Medical Department of Vanderbilt University, Nashville, Tenn., in 1893, and a member of the Alabama State and Marengo County Medical Societies, died at his home of nephritis, on July 1, aged 43 years.

Dr. Nathan Mayer of Hartford, Conn., a graduate of the Cincinnati College of Medicine and Surgery in 1859, a member of the American Medical Association and of the Connecticut State and Hartford County Medical Societies, a veteran of the Civil War, having served as surgeon with the Sixteenth Connecticut Volunteers, and well known as an author and dramatic critic, died in the Hartford Hospital, on July 10, aged 73 years.

Dr. William H. Weirick of Washington, Ill., a graduate of the Jefferson Medical College, Philadelphia, in 1866, a member of the American Medical Association and of the Illinois State and Tazwell County Medical Societies, and a veteran of the Civil War, died at his home, on June 28, aged 70 years.

Dr. Henry Edwin Spalding of Boston, Mass., a graduate of the New York Homeopathic Medical College and Hospital in 1866, for many years visiting physician to the Homeopathic Hospital of Boston, and later consulting physician, and formerly president of the Massachusetts Homeopathic Medical Society and of the Massachusetts Surgical and Gynecological Society, died at his home in Hingham, on July 4, aged 68 years.

Dr. Thomas H. Bache died at Philadelphia on July 8 at the age of 86 years. He was graduated from the University of Pennsylvania in 1846 and from Jefferson Medical College in the class of 1850. He was a resident physician in the University Hospital in 1852 and 1853. He was one of the founders of the Children's Hospital and at one time surgeon to this hospital and also to Howard Hospital. During the Civil War he was surgeon to the 17th Regiment of Pennsylvania Volunteers, major and brevet lieutenant-colonel medical corps U. S. A. from 1861 to 1865. He was in charge of the United States Army Hospital at Chester, Pa. He was a Fellow of the College of Physicians of Philadelphia, a member of the American Philosophical Society. He was a great-great-grandson of Benjamin Franklin.

Correspondence.

OUR LONDON LETTER.

(From Our Regular Correspondent.)

LONDON HOSPITAL—UNIVERSITIES CONGRESS—RETRACTION RINGS AS OBSTACLES TO DELIVERY—ROYAL COLLEGE SURGEONS MUSEUM—INSURANCE—BRISTOL INFIRMARY—THE KING'S VISIT—OBITUARY.

LONDON, July 5, 1912.

ON Monday Lord Roseberry distributed the prizes at the London Hospital College and gave one of those charming addresses for which he is noted. He began with some amusing talk about students in the past referring to horrible pictures which humorists conjured up as mere antediluvian animals for peripatetic philosophers like Mr. Pickwick to contemplate but without a vestige of truth in the portraits. There had been, however, a member of the profession now extinct as far as his orbit extended though he fancied he survived in rural parts—that was the apothecary of his childhood, who was really a good medicine man, as the Indians express it, as he not merely recommended but compounded his medicine himself. But he had changed his name, given up the good old name of apothecary, and become a general practitioner. You never read of a general practitioner in "Romeo and Juliet," and in Pendennis you may find the older hero who perhaps gave us too much medicine, and perhaps we did not take it all. "I still feel his warm hand resting on my tremulous pulse," said his lordship, and turned to the more serious part of his subject. Medicine, he said, was the noblest secular career in the world—the one which tries wherever it goes, unselfishly, willingly, earnestly, to give comfort and alleviation to all with whom it deals. It was the noblest profession because it was a forlorn hope of humanity; a forlorn hope because it could never hope to conquer in the long run, yet it never despaired, and was always seeking new inspiration and new strength for the battle which could only have one termination. It was a forlorn hope for it combated the reptile of disease, from which, though you successively cut off a limb, like the fabled dragon of old another sprang up to take its place; a forlorn hope because when you had conquered one form of disease another form, such as sleeping sickness, was sure to spring up; a forlorn hope because all day long and every minute of your career you had to be fighting with the angel of death, which must inevitably defeat you in the end. Did that seem a gloomy view of the profession? He thought not, because it was rare to find a life which could be spent in the complete conquest of obstacles, but in your career you were fighting the most heroic fight going on in the world, and fighting it not for selfish interests, but in the cause of humanity itself. Take the great names of history—the Cæsars, Napoleons, Wellingtons—before whom all bend the knee—they all, selfishly or not, had been banes and injuries to generations. Take, then, one single name from your profession—take the name of Lister, and balance against that all the historical figures who have devoted their lives to conquest and bloodshed. Put them all on one side of the balance and that of Lister on the other, and would any intelligent human being hesitate as to which side it was to which the universal gratitude of mankind was due? You should then be proud to join in this great crusade in this army of compassion and alleviation. And where can you better enlist than in this great hospital—the first in the world? "At my age one is chary about employing the word first, but it is, let me say so, the first in the world."

The next day Lord Roseberry was again in the position which suits him so well. He opened the Congress of the Universities in the British Empire and dilated on their growth and expansion since 1830, when England had two and Scotland four, though the last are linked in couples, making the balance even. At the same time Scotland may claim a greater zeal in educational matters. To-day no less than fifty-three universities are in congress. Lord Roseberry regarded them as "machines for producing men; the best kind of machines for producing the best kind of men, who may help to preserve our empire."

In the Obstetrical Section (R. S. M.) Dr. Willett related a case of a rather rare condition obstructing the termination of labor. The head was brought down to the outlet, but the shoulders were detained above by a thick retraction ring which completely encircled the lower part of the neck. The child was dead, so the head was perforated, a cranioclast firmly fixed and an eight-pound weight applied to its handle by a towel. Morphia (½ gr.) was injected to relieve spasm, and the patient slept for three hours. On waking delivery quickly followed a few pains, and the placenta came naturally. A hot intrauterine douche was given, and it was found the ring had disappeared. Some septic symptoms complicated convalescence, but the patient left hospital after a fortnight. Dr. Willett thought the case an ideal one for continuous traction by weight—dead child and mother's state not urgent.

Dr. Herbert Williamson mentioned an allied case of a ring detaining the shoulders. Delivery was effected by steady traction with forceps, to which the ring yielded after fifteen minutes. Some hemorrhage followed, and the placenta was expressed, but the bleeding continued. Examination showed a tear in the vaginal vault extending through the cervix and lower wall of uterus. The rent was sutured with catgut and the broad ligament lightly plugged with gauze (removed in twenty-four hours). A good recovery followed.

The report of the museum committee of the Royal College of Surgeons is issued. Upwards of 1,000 specimens have been added during the year. The most interesting addition is the collection presented by the executors of Lord Lister, comprising instruments, many designed and used or modified by him. These are to be kept as a separate collection, and can not fail to be an attraction in the future. The Royal Society of Medicine has presented a collection of historical interest, being instruments that have been used in midwifery. Another collection was presented by Mr. Penrose Williams of Bridgewater, and contains many surgical instruments of the eighteenth and nineteenth centuries. A medicolegal collection has been begun, and specimens are coming in.

The insurance act is still troubling us. The Liverpool practitioners have signed resignations to various clubs and made arrangements for attending patients. Meantime about 200 Birmingham medical men have given notice that they will terminate their contracts with the clubs. The inquiry undertaken by Sir William Plender for the insurance commissioners into the remuneration of

medical men in six selected towns is beset with difficulties. The auditor is required to show separately all sorts of items which go to make up the practice, such as visits, medicines, certificates, reports. How many doctors keep a set of books from which such matters can be extracted? No auditor, I think, would be able to apportion the items without the doctor's attendance all the time and supplementing the figures by his memory of each case.

Questions were asked in the House last night, but the government, as usual, only shuffled.

The King's visit to Bristol last week was mainly for the purpose of opening the new surgical department of the King Edward VII Memorial Infirmary. This has cost between £70,000 and £80,000, and is only the first part of the scheme, which will run to about £200,000. It is, however, as it stands, complete in itself. It is intended when the whole is carried out to transfer the old infirmary to the new site, where the grounds will have about two acres of garden. The old Bristol Infirmary is the largest hospital in the west of England, and perhaps the oldest in the kingdom. It was founded in 1735, and contains 270 beds, but extension is imperative, and with the new hospital 180 will be added. The sojourn of the King and Queen was short, but their majesties took part in various ceremonies, including the reception of five addresses, to which the King replied, and the old city turned out and greeted them with enthusiasm as they passed through the miles of decorated streets.

Dr. William Murrell, physician to the Westminster Hospital, and lecturer on medicine in the school, died suddenly on the 28th ult. He was an authority on materia medica and therapeutics, on which he lectured for many years, and served as examiner on this subject at the London Royal Colleges and also at the universities of Edinburgh, Aberdeen, and Glasgow. His "What to Do in Cases of Poisoning" ran through eleven editions. He edited Fothergill's "Practitioners' Handbook of Treatment," and was a contributor of many papers to the societies and journals. He qualified in 1874-5, took the Brussels degree in 1879, and was elected F.R.C.P. Lond. in 1883. He was a laureate of the French Academy of Medicine and fellow of the Philadelphia Medico-Chirurgical College.

Lt.-Col. F. E. McFarland died on June 24 after a long and honorable career, for the first twenty years in the Army Medical Department (serving chiefly in India), and after that in Belfast, where he was elected by his brethren president of the Ulster Medical Society, and was consulting physician of the Women and Children's Hospital. He qualified at the two Royal Colleges of Dublin as long ago as 1858.

Fleet-Surgeon Frederick Walter Stericker, R.N., who only recently retired from the Naval Medical Service, died on July 1 at the age of 51.

THE PLAGUE IN HAVANA.

(From Our Regular Correspondent.)

HAVANA, July 14, 1912.

WE learned of the existence of plague in Porto Rico about three weeks ago. Quarantine against Porto Rican ports was established and at the same time the hunt for dead rats was begun in the neighborhood of the docks where it was said that an unusual mortality among those rodents had been observed. The bacteriological examination of the few rats then collected, however, failed to show the presence of the pest bacillus; some gave sterile cultures, showing that they had been killed by poison, probably arsenic. On the evening of July 4 the first suspicious case was recorded in a man with inguinal adenitis and rather severe general symptoms. He was sent to one of the Emergency Stations and from there to Hospital No. One, which is a general hospital of about 500 beds, the wards being arranged in separate pavilions. The man was transferred to Las Animas Hospital for Infectious Diseases the same evening and smears and cultures were made from fluid extracted from the bubo. The Board of Infectious Diseases visited the case next morning and examined the smears, which showed the presence of a few bipolar stained bacilli, very much like the plague bacillus. The Board deferred the diagnosis until the following day so as to allow time for biological tests that would eliminate the possibility of glanders, since the man had worked in a stable, and also to carry out a thorough examination of the cultures made. The result, by unanimous opinion, was that the case, as suspected originally, undoubtedly was one of plague, and so it was officially declared on the morning of the 6th. This man has been doing well and at this moment is out of all danger, but, of course, the full period of quarantine will pass before he will be allowed to be at large.

A second confirmed case was officially declared on the morning of the 12th, in a man that came from the infected zone, the diagnosis being made after the patient died, but it being declared suspicious from the second day of his illness.

The sanitary department had been active all this time and not only the entire block where the case of plague originated was disinfected but also many other blocks of buildings, where it is surmised that other cases have taken place during the last month, were also fumigated. These cases did not come under the notice of the sanitary authorities until many days after the death of the patients, and it is only by a process of elimination and deduction that it is believed they were cases of plague.

Whole blocks of houses are subjected to vigorous fumigation with sulphur and formaldehyde and at the same time all rat holes are stopped up with cement and broken glass; the floors are flooded with insecticide solutions to destroy fleas and vermin, and everywhere, even outside the supposedly infected zone, the people are engaged in the wholesale trapping and poisoning of rats, since a bonus of five cents each is paid for them when delivered at any of the various stations, whether dead or alive. Popular instructions have been widely distributed all over the city, giving easily applicable preventive measures. Every patient admitted to any of the five hospitals in this city is carefully investigated and all cases of "adentitis" are considered suspicious until the Board of Infectious Diseases passes upon them. The cooperation of the people is a fact that the sanitary authorities value highly; fortunately, the previous training obtained during the yellow fever campaign has been of the greatest aid and the authorities have certainly obtained the confidence of the public at large. This is made manifest by the faithful observance of all measures that have been undertaken. The directing personnel is one which has been engaged for many years in sanitary work, dating back to the Spanish war, and although without practical experience with bubonic plague it

is perfectly conversant with the work at hand. Dr. J. Guiteras is the Director of Public Health and Dr. A. Agramonte, chairman of the Board of Infectious Diseases. Dr. M. Lobredo is chief of the Research Laboratory, where the bacteriological work is carried out, and Dr. Lopez del Valle, the Health Officer of Havana, has been in charge since General Wood's time.

One of the most remarkable circumstances in connection with this importation of the plague into Havana has been the absence of the infection among the rats; at least it has been impossible so far to demonstrate it in spite of the most earnest search which is being made for the infected animals. Everything relating to the extension of the process, the progress of disinfection, the necessary measures to be adopted, etc., is widely published for the information of all, and absolutely nothing is kept from the public which is thereby rendered more confident and more composed in the presence of the threatened danger.

THE EARLY DIAGNOSIS OF UTERINE CANCER.

To the Editor of Medical Record:

Sir:—In elucidation of the method now being investigated for the earlier diagnosis of uterine cancer by means of the curve of past health, it must be recognized that, occasionally, control cases (breast cancer, uterine fibroid, etc.) will present a history of greatest weight in the incipient stage, but the maximum weight curve will not be coincident with maximum health and strength curves. When internal pelvic strain results in a want of equilibrium of nerve forces the deficiency shows itself in weakened action on the part of the cerebrospinal system, of the sympathetic system, or of both. Should the cerebrospinal only be affected we have some weakening of muscle, causing abnormal conditions of nerve, obstructed action, and probably in turn sequential cancer. Such a woman might, however, remain in moderately good health and even reach her maximum weight. When both maximum weight, health, and strength are reported in the incipient stage of a control case, this maximum weight, health, and strength is notably below *perfect* health.

On the other hand, when a woman with organic disorders becomes the victim of uterine cancer, there is not as rapid a return to perfect health as in the merely functional cases. In the beginning of the incipient stage, therefore, her health curve would not correspond with the plane of perfect health. Correcting the position of the uterus either by treatment or operation should liberate nerve force, and as a result cure or benefit many cases of the functional nervous troubles, or even some insanities. Notwithstanding the fact that insane women are as subject to ordinary pelvic disorders as are women in general, uterine cancer is found but seldom among them, probably because the functionally deranged woman will have recovered her mental or nervous equilibrium several years before the recognized advent of cancer of the uterus. Cervical tears become the site of malignant disease when the uterus is displaced in such a manner and extent as to injure nervous structure controlling the area of the uterus embracing the cervical tear, cell proliferation taking place in that particular portion of the affected nerve area which has already been injured. When displacement of the uterus is *not* such as to cripple the nerve area embracing the tear, then the tear will not become the site of a malignant growth. Failure to perform a sufficiently extensive operation in early cases of uterine cancer may account for the unlooked-for fatal termination, while cases presenting an unfavorable prognosis may prove most happily disappointing owing to an enforced wide excision, *provided* that such wide excision embraces the complete nerve area from point of injury. Should this point of injury be so situated that filaments beyond the confines of the uterus are involved complications will result.

At a meeting recently held at the College of Physicians of Philadelphia, through the courtesy of the hall committee, it was decided to collect data in answer to the following questions, the object being to gather data from which to tabulate weight, strength, and health diagrams.

Diagnosis? 1. Age of patient upon diagnosis of disease? 2. Age of patient at time of maximum weight? (a) If about as heavy at any other time in her life: at about what age? 3. Age of patient at time of greatest strength and endurance? (a) If about as strong at any other time in her life; at about what age? 4. Age of patient when least subject, if at all, to aches, pains, or ailments? (a) If in about as good health at any other time in her life, at about what age?

Contributions will include not only data from uterine cancer cases but also records of any of its controls, *i. e.*, all forms of cancer in woman, and all uterine diseases other than cancer.

Philadelphia. E. Atlee.

THE DANGER OF OVERLOOKING URETHRAL CHANCRES.

To the Editor of the Medical Record:

Sir:—A case seen by me recently induces me to pen this note. The admonition to bear urethral chancres in mind, it seems, needs constant iteration and reiteration. The patient stated to me that he had been treated for gonorrhea for the last eight weeks. An indurated spot in the urethra, the gaping meatus, and the extremely abundant seropurulent discharge made me suspicious of the diagnosis of gonorrhea. The large indurated, indolent inguinal swellings made the diagnosis still more doubtful. An examination of the patient's body made the diagnosis perfectly clear. It was so clear that any tyro could have made the correct diagnosis.

Had the doctor examined the patient's naked body once, the diagnosis would have been as clear to him as to anybody, but he could not get away from his preconceived idea and once-decided-upon diagnosis. He started to treat the patient for gonorrhea and it didn't come to his mind that it could be anything else. It is hard for a person to change the direction of the current of his own thoughts. It is due to this that changing doctors is sometimes so beneficial for the patient. It is quite probable that the doctor would have treated that patient for many months, or weeks at least, without seeing any other part of his body but the penis. Only abundant mucous patches or an eruption on the face might have made him ponder.

And all this is simply due to physicians not being sufficiently familiar with the fact that chancres of the meatus, and even of the deeper urethra, are not at all such rare occurrences. Nor are chancroids within the urethra so rare. And for the welfare of

our patients we must always be on guard and bear in mind that a urethral discharge is not always due to the gonococcus of Neisser. The streptococcus, the bacillus of Ducrey, and the spirochete of Schaudinn are also important factors in causing a running from the urethra.

WILLIAM J. ROBINSON, M.D.

12 MT. MORRIS PARK, W., NEW YORK.

Progress of Medical Science.

Boston Medical and Surgical Journal.

July 11, 1912.

1. Cancer of the Uterus. The Operable Cases. The Operation of Choice. A Study of 309 Cases at the Massachusetts General Hospital from 1900 to 1910. F. Cobb.
2. Surgical Treatment of Cancer of the Uterus. C. A. Porter.
3. Advantages of Abdominal Hysterectomy. F. B. Lund.
4. Hopeful Aspects of Cancer of the Uterus. W. P. Graves.
5. Another Conception of Anaphylaxis. W. M. Barton.
6. Means of Determining the End Results of Operations on Hospital Patients. C. C. Simmons.
7. A Case of Chronic Infective Endocarditis with Ulceration of Chordæ Tendineæ. F. W. Palfrey and J. B. Ayer.

1. Cancer of the Uterus.—F. Cobb states that whenever opportunity offered he has done the radical operation for cancer of the uterus according to Wertheim's method, with wide dissection of the pelvis and ureters and removal of as much as possible of the parametrium, and although the number of his cases has been small, over 50 per cent. of them have been alive and well for more than five years since the operation. The question arises: "What is an operable case?" If the entire pelvis is filled with a hard mass, if the uterus is fixed and if the vagina is indurated well down toward the vulva, there is no doubt but that such a case is inoperable, but in many cases no bimanual examination, with or without an anesthetic, can determine positively that the case is not one for radical operation; fixation of the uterus, and the presence of indurated masses in one or both broad ligaments, may be due purely to inflammatory tissue, adhesions, pus tubes or cysts. A palliative operation ought to be done whenever possible to stop hemorrhage and offensive discharge, to prolong life, and always to promote mental comfort and happiness. A thorough palliative operation, with the curette and actual cautery, will prolong life. The usual early symptom of uterine cancer is irregular hemorrhage. The most important features of the operation in the author's experience are as follows: the preliminary preparation of the patient and anesthesia, prevention of peritoneal infection from the growth itself, dissection of the ureters, removal of the glands, hemostasis, drainage, and the after treatment.

4. Hopeful Aspects of Cancer of the Uterus.—W. P. Graves states that cancer of the body of the uterus is a surgical disease of comparatively little danger, giving early warning of its presence and being easily operable and extremely favorable as to non-recurrence. Cancer of the cervix, though insidious in onset and dreadful in its later stages if neglected, is entirely operable in its early stages and if operated on early is favorable as to non-recurrence. There is need of better education of medical students in the pathology and clinical diagnosis of the disease. The surgical treatment of cancer of the uterus is par excellence Wertheim's extended abdominal operation.

5. A New Conception of Anaphylaxis.—W. M. Barton advances the theory that anaphylaxis consists in the formation of proteolytic ferments, or enzymes, in certain tissues of the body. It is assumed that the structures chiefly involved in elaborating these enzymes are the epithelial and perhaps also the endothelial tissues. These enzymes, or ferments, endow the cells in which they are formed, or the fluids into which they are excreted, with an increased capacity of digesting foreign proteid. The symptoms of anaphylaxis are partly reflex results of the tremendous physiological aberration which this vicarious digestion induces, and partly the result of the products themselves, acting toxically upon the cells of the central nervous system and other organs. The first ingestion of a foreign proteid induces the formation of the enzymes. These remain stored up in the cells where they are formed, or circulate in the fluids of the body until the next ingestion of the foreign proteid. This can only occur in small amounts, under conditions in nature, amounts so small in fact that their digestion and destruction are brought about without direct or indirect effects upon the organism as a whole, and particularly its vital parts. But under the conditions of an anaphylactic experiment, a quantity of the proteid is absorbed sufficient to stimulate the formation of digestive enzymes in all or many of the epithelial structures of the body, and the second injection of proteid supplies a sufficient quantity to be distributed throughout the organism, so that its digestion is undertaken simultaneously by countless epithelial cells, and the symptoms of anaphylaxis are produced.

New York Medical Journal.

July 13, 1912.

1. The Direct Treatment of Syphilitic Diseases of the Central Nervous System. H. F. Swift and A. W. M. Ellis.
2. Indications for Removal of the Faucial Tonsils. H. Hays.
3. A Study of Infant Mortality in Rochester, the Relation of Market Milk Thereto. J. R. Williams.
4. The Physical Welfare of Policyholders. E. L. Fisk.
5. Mixed Vaccines in Septic Conditions. W. R. Thomson.
6. Rontgen Therapy in Acne. M. K. Fisher.
7. Cryptogenetic Sepsis Treated with Autogenous Vaccine. A. Orenstein.
8. The Curiosities of Hindu Medicine. B. P. Bharâti.

1. Direct Treatment of Syphilis of the Nervous System.—H. F. Swift and A. W. M. Ellis state that the spirochetes seem to have a special predilection for the lymph spaces. The subarachnoid space may be considered the great lymphatic sheath of the central nervous system. The portion of the latter which is most frequently involved in syphilis is the base of the brain between the peduncles and optic chiasm. This is the site of one of the large subarachnoid cisterns. Because of the peculiar anatomical conditions in syphilitic meningoarteritis, the treatment by ordinary means is quite difficult. This is probably due to the fact that there is an imperfect application of the therapeutic agent through the blood stream. The most intense process is bathed only by the spinal fluid, into which there is little, if any, excretion of curative agents. Even so highly diffusible a drug as potassium iodide is not normally excreted into the spinal fluid. Basing their method upon the known fact that the blood serum of treated syphilitics has curative powers, the authors have been studying the therapeutic effect of such serums when injected intraspinously into patients with tabes and other syphilitic affections of the central nervous system. At first the serum was obtained by withdrawing blood from the patient on the day following a salvarsan treatment. Gradually the time has been shortened so that now the blood is withdrawn an hour after the intravenous injection of salvarsan or neosalvarsan. The results in some instances of this method of treatment are as follows: Four tabetics had received repeated intravenous injections of salvarsan, in addition to mercurial treatment, with resulting symptomatic improvement and reduction in the cell count in the spinal fluid. Upon instituting intraspinous injections of their own serum obtained shortly after the intravenous injections of salvarsan, the cell count promptly fell to normal, the globulin decreased in amount much more rapidly than previously, and in two of the patients the Wassermann reaction in the spinal fluid became negative, even when 0.5 c.c. of fluid was used. While the series of cases reported is small, the authors feel that the results up to the present are of sufficient value to warrant a continuation of the work and its institution on a larger scale. The best results can be obtained from the intravenous

treatment with salvarsan or neosalvarsan, combined with intraspinous injections of the patient's own serum, possibly with the addition of small amounts of neosalvarsan.

2. **Indications for Removal of the Faucial Tonsils.**—H. Hays, as a result of his studies, has come to the following conclusions: The tonsil has a definite function in early childhood. Tonsils should not be removed unless there is some especial indication before four years of age. Small, buried tonsils associated with enlarged cervical glands should always be completely removed unless some definite cause is found for the condition. Tuberculosis is often found to be of tonsillar origin. One of the most important points to be considered in judging whether a tonsil should be removed or not is the size of that tonsil in relation to the individual throat. All tonsils, large or small, which seriously interfere with respiration, should be removed. Many local pathological conditions are caused by diseased tonsils. Many cases of middle ear catarrh can be prevented by removal of the tonsils. There is a distinct relationship between the tonsils and many general diseases. The promiscuous removal of the tonsils of children without the finding of some associated pathological condition is not advisable.

4. **The Physical Welfare of Policyholders.**—By E. L. Fisk. (See page 127.)

6. **The X-Ray Treatment of Acne.**—M. K. Fisher describes the method that he employs as follows: The patient is placed in the recumbent posture; the hair, eyelashes, and eyes, and if a man, the moustache, are covered with lead foil; each side of the face is treated separately, as it is difficult to get an even distribution of the rays if full faced exposure is made, especially if there happen to be a number of lesions back of the malar eminences or near the angle of the jaw; a tube of low vacuum is used, held in a protective leaden glass shield, eight to ten inches above the region over which the exposure is to be made; the rays, which are filtered through sole leather, should allow the passage of three-fourths to one milliampere of current through the secondary circuit, or, if a radiometer or milliamperemeter cannot be employed, about the radiance that in a darkened room will show as a faint yellowish green light; each side of the face receives an exposure of six to ten minutes, depending on the amount of inflammatory reaction that is present, those cases where there is already present considerable redness not being treated so strenuously, while in cases in which there is much induration the more prolonged exposures are given. Treatments are given twice a week, although after a time the séances may be reduced to once a week. If given more frequently, the treatment may produce a burn, and the author has never found it necessary, or even advisable, as Stelwagon and others have recommended, to push the treatment to the extent of producing an erythema, and then discontinuing treatment until the redness has disappeared. For the first two or three weeks after commencing treatment little change can be noted in the disease; gradually the redness is seen to become less pronounced and the lesions almost imperceptibly to fade; the indurated areas decrease in size, and in the pustular form of acne there is less tendency for suppuration to result. One of the first effects noted is the disappearance of the oily seborrhea, which, as Sabouraud asserts, always accompanies the acne.

Journal of the American Medical Association.

July 13, 1912.

1. The Hospital Problem. T. W. Huntington.
2. Experimental Intestinal Obstruction in Dogs with Especial Reference to the Cause of Death and the Treatment by Large Amounts of Normal Saline Solution. J. A. Hartwell and J. P. Hoguet.
3. The Resistance of the Patient as a Guide to Operative Procedure. W. B. Chase.
4. Hysterotomy. J. B. Deaver.
5. Unclean Mouth and Its Evil Results. M. H. Fletcher.
6. Wanted: A Sense of Asepsis. J. S. Marshall.
7. Diseases of the Fallopian Tubes. H. J. Boldt.
8. The Etiology and Treatment of Superfluous Hair. H. C. Baum.
9. Cutaneous Reactions. E. D. Chipman.
10. The Care of the Mouth of the Sick. W. C. Fisher.
11. Dilatation of the Large Bowel. A. D. Bevan.
12. The Results of Operations, Especially Abdominal, Performed on the Principle of Anoci-Association. G. W. Crile.
13. Dilatation of the Duodenum in Relation to Surgery of the Stomach and Colon. J. C. Bloodgood.

1. **The Hospital Problem.**—By T. W. Huntington. (See MEDICAL RECORD, June 29, 1912, page 1245.)

2. **Experimental Intestinal Obstruction.**—By J. A. Hartwell and J. P. Hoguet. (See MEDICAL RECORD, June 29, 1912, page 1246.)

3. **The Resistance of the Patient as a Guide to Operative Procedure.**—W. B. Chase discusses first the subject of inherited longevity. He states that, other things being equal, it is safe to assume that the inherited tendencies noted in families and in individuals offer evidence which the operator should summon to his aid in all cases, particularly in serious emergencies, in determining the probable status of the patient, with reference to any operation which cannot be tested by other standards. If the history of the patient shows recovery from one or more previous attacks of serious illness, it increases the chances of recovery after grave operation. Recovery after serious accidents also serves as an indication of the patient's power of resistance. Of similar value is the recovery from previous surgical operations. The more serious and the more frequent the operations, the more valuable as guides do they become under new surgical complications. The present health of the individual must be taken into consideration. This implies a careful inquiry into the condition of the nervous, circulatory, secretory, and excretory organs of the body, with an appreciation of organic or functional derangements as accessories—important in the final analysis of cases which make for the resistance or want of resistance in the individual case. The relation of the resistance of the patient to the time taken for an operation, the shock incident to it and the anesthetic employed are of the highest importance and difficult to determine in advance. The time of every operation should be the least possible compatible with thoroughness.

4. **Hysterotomy.**—J. B. Deaver states that his experience with the few cases he has operated on has been so satisfactory as to warrant bringing this operation up for consideration, in the belief that it should be kept in mind and employed in certain selected cases more often than is now the case. He wishes especially to urge that placenta prævia must be considered an indication for hysterotomy which is to be given the preference over any other method of delivery. In the severe stages toxemias of pregnancy it is to be seriously considered as a rival of less radical measures. In certain myomatous uteri and in the presence of pedunculated intrauterine growths or endometrial changes one may on occasion find it of great help in relieving the patients most expeditiously of their symptoms. The chief contraindication is the presence of intrauterine infection, either demonstrated or strongly suspected. The author would not at the present time open a uterus in the interior of which he feared to find infection. If this precaution is observed the operation is one of extreme simplicity and low mortality, but should be undertaken only by an experienced surgeon who is a master of intraabdominal technique.

7. **Diseases of the Fallopian Tubes.**—H. J. Boldt discusses the infections of the Fallopian tubes and their consequences. Gonorrheal salpingitis can be credited with most tubal pregnancies, and it may also be the cause of menstrual disorders, most commonly menorrhagia, as exacerbations are apt to occur about the monthly period. There is no pain characteristic of tubal inflammation, but it may occur in various ways. Backache is a prominent symptom, usually accompanied by pain in the lower abdomen. Neurasthenia is not a rare occurrence. In case

a rupture of a distended tube takes place intraperitoneally the symptoms vary according to the virulence of the tubal contents. The accident is a serious one, and when, in a known case of pyosalpinx, sudden collapse occurs, surgical intervention is called for. The diagnosis of these cases calls for palpation, and this can only be done by the bimanual method. The position of an inflamed Fallopian tube may be abnormal and the latter may even simulate a tumor. To make a diagnosis of tuberculous salpingitis other evidence of tuberculous infection is necessary. It is not always easy to recognize the contents of the tube by palpation. The doughy sensation of pyosalpinx to the examining finger contrasted with the elastic feeling of the hydrosalpinx is the most reliable symptom in differentiating the two. Hematosalpinx, not due to tubal gestation or genital atresias, cannot be diagnosed with certainty except by puncture, which is not desirable. A tubal gestation, if uninterrupted, is best indicated by the other changes attending pregnancy, but some cases may be very puzzling, as are one or two reported. The prognosis of tubal disease, except in malignant cases, is generally good as far as life is concerned. The restoration to health, however, depends on circumstances. Boldt believes the majority of acute gonorrheal cases will recover if properly treated and if subsequent infection is prevented. If the fimbriated extremities have been closed and if the tubes have become more distended, the prognosis of a cure from a pathological point of view is out of the question. The acute gonorrheal conditions during the puerperal state have a serious aspect, but if proper treatment is used most of these cases recover. The main principle of treatment is complete avoidance of sexual excitement with physical rest and hygiene; surgical operations should not be too hastily employed in the first attacks. Local treatment with hot douches, ichthyol, etc., are useful. In case of surgical intervention the author advises a large incision and vaginal section. For abdominal operations he prefers the longitudinal incision. Every factor should be carefully weighed before surgical measures are employed, and radical operations should be avoided in acute pelvic peritonitis from tubal inflammation. The curette should not be used in gonorrheal cases.

8. Superfluous Hair.—H. C. Baum describes his method of employing electrolysis in the treatment of this condition. The skin is mopped with absolute alcohol which macerates the thickened sebum, is to some extent germicidal and which is very efficient in obtunding sensation. The needle is introduced without force till it reaches the bottom of the follicle or meets resistance. The current is then passed until the follicle whitens or until bubbles serve to mark the site of the hair follicle. The hair is epilated and the needle is returned through the vacated follicle, until it rests on the papilla. Enough electrolysis is then employed to destroy the papilla. After the hair is pulled out and the needle is placed directly on the papilla, much less tissue is cauterized than if the papilla were destroyed while surrounded by the hair bulb. Meanwhile the application of absolute alcohol goes on. The author uses a rounded olive-pointed needle and a special needle holder. The positive pole is grasped by the patient's hand and a current from one-third to one milliampere, measured, not guessed, is used. This method is painless, and the results are better than with a stronger current. The La Clanche battery is used. The smaller the diameter of the needle the nicer the technique and the better the result. Scarring to any extent is not necessary. The majority of these cases occur in unmarried women; the author has seen it cured by marriage or the relief of dysmenorrhea. As toxemias destroy hair on the top of the head, so they seem responsible for the overgrowth of hair on the face. Indicanuria is present in many of the cases, and with improved metabolism the tendency toward the growth of superfluous hair is modified or overcome. In diabetics it is not unusual to see the growth increase on the face, while thinning on the scalp is the rule. Overworked spinster school teachers furnish the largest quota of the author's cases, and it is manifestly not always possible to remove the cause, but many cases are susceptible to varying degrees of relief without resort to electrolysis.

11. Dilatation of the Large Bowel.—By A. D. Bevan (See MEDICAL RECORD, June 29, 1912, page 1248.)

12. Operations Performed on the Principle of Anoci-Association.—By G. W. Crile. (See MEDICAL RECORD, June 29, 1912, page 1245.)

13. Dilatation of Duodenum in Relation to Surgery of the Stomach and Colon.—By J. C. Bloodgood. (See MEDICAL RECORD, June 29, 1912, page 1247.)

The Lancet

June 29, 1912.

1. The Pathology of Immunity, as Illustrated by the Behavior of Fluid Exudates from the Tissues and Various Body Cavities, in Acute and Chronic Bacterial Infections, more Especially with Regard to the Problem of Aggressins. L. S. Dudgeon.
2. Some Moot Points in the Pathology and Clinical History of Pneumonia. P. Kidd.
3. Relationship of the Lungs and Genital Organs of Tuberculosis Women. H. von Bardeleben.
4. A Comparison Between Fleming's (Hecht's) Modification and the Wassermann Test. R. Donald.
5. Disappearance of a Skin Carcinoma Under Local Application of Adrenin. L. C. Peel Ritchie.

1. The Pathology of Immunity.—L. S. Dudgeon states that the exudate from an infected focus may be more suitable for pathological investigation than the blood serum of the patient. The exudate may contain either immune body, aggressin, or complement, or all three together in the same exudate, or only the immune body and aggressin. The aggressins are thermo-stable in the vast majority of cases, and some exudates may contain specific substances which resist boiling, while the common inhibitory bodies are usually unaffected by temperatures falling between 55° C. to 60° C. The effect on phagocytosis is due to an interaction of the blood serum and exudate. There is also evidence that the exudates may act directly on the leucocytes. It would seem that the most thermo-stable substances in inflammatory exudates are really bacterial extracts which have a specific inhibitory effect on phagocytosis and which are able to establish immunity, while the substances which resist a temperature of 60° C. for twenty minutes, but are destroyed by boiling, are also actively aggressive, and those exudates which are completely thermo-labile are never aggressive. In experiments on the injection of certain rabbit exudates into rabbits, the most striking phenomenon which presents itself is the leucocytic depression. The leucocytes may fall in half an hour from 10,000 to 1,000 per c.mm. or even less, and the polynuclear decrease is almost constant. Lymphocytic leucopenia is also usually present.

2. Moot Points in the Pathology and Clinical History of Pneumonia.—P. Kidd discusses the varieties of lobar pneumonia. The "Friedländer" pneumonia appears to have attracted more attention in Germany than elsewhere. Pneumonia of lobar dimensions may be caused by the pneumobacillus alone, as Weichselbaum has always maintained. The typical bacilli may be found in the sputum and in the blood during life, and they have been present in the contents of a pulmonary abscess incised by the surgeon. The appearances of the consolidated lung are not always fully described, but where a detailed account is given the hepatization is said to be gray or blackish-gray and not granular. The contents of the alveoli consist mainly of desquamated epithelial cells and bacilli, with very little fibrin and with less leucocytes and red corpuscles than in pneumococcal cases. The tendency to necrosis and suppuration is remarkable, con-

trasting strongly in this respect with pneumococcal pneumonia. Toeniessen states that suppurative softening occurred in nearly one-half of all the cases recorded. In many cases where gangrene and abscess occurred the pneumobacillus alone was present. With regard to the clinical aspects, most writers are agreed that the course is severe and the mortality is terribly high. Apelt goes so far as to say that he believes that only one recovery has been recorded, viz., one in which Lenhartz drained a gangrenous cavity in the lung. The accounts of streptococcal pneumonia are scarce. Weichselbaum refers to cases of this description, without giving details, and states that streptococcal pneumonia is at times indistinguishable from typical lobar pneumonia, and also that in some pneumonias clinically regarded as anomalous cocci are found closely resembling *Streptococcus pyogenes*, both microscopically and culturally. In Lippmann's monograph reference is made to researches on certain affections styled "pulmonary congestion" by French authors which in England are regarded as varieties of pneumonia. These include "maladie de Woillez," an abortive form of pneumonia, pleuropulmonary congestion of Potain, a variety of pleuropneumonia, and the splenopneumonia of Grancher. The term "splenopneumonia" was introduced by Grancher in 1883 to denote "a variety of subacute pneumonia which simulates pleurisy with moderate effusion." Grancher in his original account described three cases of this complaint. In these the onset was attended with pleuritic pains and shivering. The physical signs indicated, in his opinon, pulmonary congestion and a small pleural effusion, the physical signs being dullness on percussion, diminished vocal fremitus, weak blowing breathing and bronchoegophony. All the cases made a slow recovery in the course of some weeks. Grancher believes that these cases are examples of splenization in which the solid lung is red and smooth.

3. The Lungs and Genitalia of Tuberculous Women.—H. von Bardeleben states that genital tuberculosis as a rule arises from pulmonary tuberculosis. On the other hand, clinical experience teaches that the prognosis of pulmonary tuberculosis becomes much worse with the complication of genital tuberculosis. Thus genital tuberculosis is usually combined with severe pulmonary tuberculosis in dissected cases, while an early removal of the genital tuberculosis, by means of an operation, often makes it possible to cure a newly kindled pulmonary tuberculosis. In pregnancy the placenta or the placenta uterina is often the cardinal point of this action and reaction: (a) It often offers a harbor to tubercle bacilli circulating through the blood, from which at every opportunity, especially at the separation of the placenta, the bacilli can be again mobilized (childbed). (b) And, therefore, the greater the chances may be of this happening in cases of active, manifest pulmonary tuberculosis, the more injurious are the effects of the pregnancy (90 per cent.), whereas the slighter the chances are of bacilli circulating in the blood the more seldom does the pulmonary tuberculosis become worse (15 per cent.). In the same manner is proved the agreement of the results of anatomical research with regard to the placenta and therapeutic interventions. (a) Artificial abortion produces really good results only in those cases in which tubercle bacilli are practically never found in the placenta (simple catarrh of the lungs till the fourth month of pregnancy). It produces, on the other hand, unsatisfactory results in cases in which altogether 70 to 80 per cent. placental tuberculosis is to be found (simple affection of the lungs with strongly developed placenta after the fourth month of pregnancy), or more extensive or intensive lung tuberculosis, also in the early months of pregnancy. (b) The results are just as good in either indication, if, instead of merely removing the embryo, the simultaneous excision of the placenta uterina is made.

July 6, 1912.

1. The Pathology of Immunity, as Illustrated by the Behavior of Fluid Exudates from the Tissues and Various Body Cavities, in Acute and Chronic Bacterial Infections, More Especially with Regard to the Problem of Aggressins. L. S. Dudgeon.
2. The Vascular Lesion in Some Cases of Middle Meningeal Hemorrhage. F. W. Jones.
3. A Case of Angina Abdominis. W. K. Hunter.
4. The Ophthalmology of General Practice. M. L. Hepburn.
5. Observations on the Etiology of Vaccinia and on the Cultivation of the Microbe of Variola. W. J. Simpson.
6. The Examination of Diphtheria Specimens: A New Technique in Staining with Toluidin Blue. C. Ponder.
7. Removal of an Intrathoracic Thyroid Tumor. C. B. Lockwood.
8. A Blood Puzzle Solved. The So-called X Bodies. A. Balfour.
9. Ultraviolet Light in the Treatment of Alopecia. J. D. Harris.
10. An Unusual Case of Prolonged Fever Presenting Acute Hepatic Changes. H. G. Lawrence.

1. The Pathology of Immunity.—L. S. Dudgeon states that filtered pneumococcus exudate prepared from rabbits and injected into mice together with the pneumococcus causes a more rapidly fatal result than when the pneumococcus alone is injected, but this aggravated action of the exudate is similar to the results obtained by Cole and Smirnow, who found that mice injected intraperitoneally with the pneumococcus and normal rabbit or pigeon serum died more rapidly than control mice which received the pneumococcus only. Fifteen minutes after intraperitoneal inoculation of bacteria—pathogenic or non-pathogenic—an exudate appears which contains an abundance of complement and a certain amount of opsonin, although much less than that of the animal's blood serum. It is a fact of interest that the exudate which collects in the peritoneum of the immunized animals at the end of one hour may have a greater or equal power to excite phagocytosis than the blood serum of the animal, while control animals treated in a similar manner do not show such active phagocytosis, and there is evidence that this high degree of phagocytosis is specific. There is also active complement present in the exudate in each case. Active local immunity as a result of intraperitoneal immunization must obviously be of great service to an animal infected in the immune area, but it is not a constant result. All workers on the subject of aggressins are agreed that exudates formed within the animal body from bacterial infection need not necessarily be aggressive. If exudates contain a full supply of active complement and opsonin they seldom contain much aggressin; in fact, the action of such exudates is usually in direct contrast to that of an aggressive fluid. It is especially in exudates derived from animals suffering from severe bacterial infection or dying from lesions of great severity that one must look for these so-called aggressins. It can be shown both *in vitro* and *in vivo* that the action of aggressive exudates is not necessarily specific and various exudates and blood sera may produce an aggressive effect apart from any question of specificity.

2. Vascular Lesion in Middle Meningeal Hemorrhage.—F. W. Jones concludes from his investigations that the anatomical condition of the vascular channels of the dura mater is as a rule not appreciated, and that an attentive examination of these channels at post-mortem inquiries held on these cases is very desirable. From a purely anatomical point of view there is great probability that, in cases not caused by excessive violence, the sinus is far more likely to be injured than the artery. In those cases—especially common in children—in which the violence is trivial, and no fracture is caused, the cerebral compression and ensuing death are due to the development of a hematoma beneath the vascular dura mater strictly comparable to the well-known hematomata developed beneath the vascular pericranium. In the twelve bleeding points yielded by three fatal cases which have been examined in serial sections, the blood had invariably escaped from a laceration of the venous sinus, and in no instance could an arterial lesion be found. From the published accounts of the bleeding encountered at operations undertaken for the relief of symptoms it would seem that in the majority of such cases the blood was

issuing from a ruptured venous sinus rather than from the artery. In the cases examined there is evidence that following upon the initial wound of the sinus wall venous blood is extravasated between the dura mater and the bone, and that continuance of the bleeding causes a continuance of the stripping of the membrane from the bone with the development of an accumulating laminated extradural clot. Probably only in rare cases—and especially those in which excessive violence has produced linear or depressed fractures—is the middle meningeal artery actually wounded. Dangerous, or difficultly controlled, hemorrhage is not the rule at operations undertaken for the relief of this condition; in children especially any cranial injury, however trivial, should be regarded as the possible cause of a dangerous, and possibly fatal, dural hematoma, and operation for evacuation of the clot and relief of pressure symptoms should always be undertaken regardless of subsequent hemorrhage, which, being usually venous, is easily brought under control.

3. **A Case of Angina Abdominis.**—W. K. Hunter reports the case of a man aged 56 years who 18 months before he was admitted to the hospital began to suffer from attacks of pain in the epigastrium. During the month the patient was under observation he had paroxysms of pain every day, at intervals of 15 to 20 minutes and lasting about one minute. The pain was very severe and the attacks seemed to be too frequent and to have occurred over too long a period of time to be attributed to gallstones. During the spasms of pain the respiration became quickened and the face rather cyanosed. There was marked cardiac arrhythmia; the heart sounds were indistinct, but there was no murmur. The radials were atheromatous and there were signs of hypostasis at the base of both lungs. The feet and legs were edematous. The signs of myocardial failure persisted and became more marked. The patient died at last with all the signs of heart failure. Autopsy revealed a typical myocarditis, a widespread patchy atheroma of the aorta and sclerosis of the coronary arteries. The case corresponded very closely in its clinical as well as in its pathological aspect to those cases described by Huchard under the phrase *"angine à forme pseudogastralgique."*

6. **The Examination of Diphtheria Specimens.**—C. Ponder describes his method of staining smears as follows: A film is made on a cover glass and fixed in the usual way. The stain has the following composition: Toluidin blue (Grubler), 0.02 gram; glacial acetic acid, 1 c.c.; absolute alcohol, 2 c.c.; distilled water to 100 c.c. A small quantity of the fluid having this composition is taken up with a platinum loop and dabbed and spread on the film; the cover slip is then turned over and mounted as a "hanging-drop" preparation and it is now ready for immediate examination with the 1/12 objective in oil. The examination should be made with a strong artificial light; daylight is not suitable. The author is accustomed to use a 16 candlepower frosted electric bulb at a distance of from 6 to 8 inches from the mirror. The influence of the thin layer of blue fluid is in the direction of correcting the yellowness of the artificial light. Films should be freshly prepared and thinly spread. Experience soon shows the right amount of stain to place on the film; the drop should be rather shallow—not too deep so that its blue shade cuts off too much of the light, nor so little in amount that there is not sufficient stain for the organisms to become fully saturated. The cells take up the stain practically instantaneously, and the preparation may be examined at once or any time during the next 3 or 4 hours; after that there is a tendency for overstaining to take place. The toluidin hanging-drop method here described differentiates the diphtheria bacillus from the other organisms in the same film more clearly than any other method, because while giving a double stain—blue bacilli with red granules—it shows the minute structure of all organisms very distinctly. It has a special value in demonstrating the organism in a direct smear without preliminary cultivation, as by this means, in a large proportion of acute cases of the disease, a much earlier diagnosis may be made. It also demonstrates the organisms of Vincent's angina if present. It is extraordinarily simple and rapidly carried out, so that in a laboratory where a large number of specimens require to be examined a great saving of time results.

British Medical Journal.

June 29, 1912.

1. Prurigo, Pruriginous Eczema and Lichenification. Sir M. Morris.
2. Certain Forms of Fever of Obscure Origin in Infancy and Childhood. C. P. Lapage.
3. A Study of an Epidemic of Measles. A. E. Tait.
4. Aneurysm of the Superior Mesenteric Artery with Rupture. A. H. Gifford.
5. Electrocardiography and Its Importance in the Clinical Examination of Heart Affections. T. Lewis.

1. **Prurigo, Pruriginous Eczema, and Lichenification.**—Sir Malcolm Morris regards as pruigo an itching affection which presents an eruption of discrete hard papules followed sooner or later by the peculiar roughening and thickening of the skin known as lichenification. The disease usually begins in early infancy, between the eighth and the twelfth months of life. The papules are hard, small, often perceptible only to the touch, pale or reddish in color, and distributed principally on the extensor surfaces of the limbs, the lower part of the abdomen, the sacral region and buttocks, and the back and front of the chest, but sparing the joint flexures. They give rise to violent itching and, when subjected to the irritation of scratching, become reddened and increase in size. When a papule is excoriated serum and blood exude, which quickly dry into a brown crust. Other lesions appear which may resemble those of eczema (except that the flexor surfaces are still usually spared) and of urticaria, and finally the skin becomes lichenified. One crop of papules succeeds another, and the disease becomes chronic, but usually there is some abatement in summer, with exacerbation in winter. In severe cases the integument takes on a brown color, there is desquamation, the hairs are extruded, there are pustules and sores, and the femoral and axillary glands enlarge and may go on to suppuration. One peculiarity of the disease is that after the third year of life it undergoes no further evolution. The exciting cause of prurigo has been found in bad hygiene, defective alimentation, autointoxication, etc. Brocq finds the true cause in hereditary cross-breeding in which four influences cooperate, namely, (1) the neurotic condition of one or both parents, either of long standing or operating during the mother's pregnancy; (2) lymphatism, either idiopathic or due to tuberculosis or syphilis; (3) autointoxications originating in arthritism and aggravated by bad hygiene and by life in crowded cities; (4) chronic intoxications, in which alcoholism and caféism take the principal rôle. The complicating lesions having been dealt with, the indications for treatment, as Colcott Fox says, are to improve the patient's nutrition by good hygiene, generous diet, and cod liver oil; to control the itching by baths medicated with starch, sulphurated potash, creolin, etc., and to dissipate any coexistent eruption. All irritating preparations must be avoided. The external remedies employed by the Vienna school are sulphur, tar, soap, and naphthol. The tar is used especially to control the itching. Brocq holds that the best of the topical remedies is cod liver oil, one recommendation of which is that it can be used in all stages of the affection, even the most acute. If the surface is smeared with the oil the applications must follow each other quickly; and he considers it better to

envelop the parts in an unpregnated many-folded bandage covered with an impermeable varnish. He speaks highly of a preparation of cod liver oil and white wax in the proportion of three to one, used as a pomade, with or without covering. There is no pruriginous affection in which the itching is more intense than in pruriginous eczema. The word "lichenification" was applied by Brocq to the peculiar roughening and thickening of the skin, which so frequently followed scratching. Untreated, the patches may persist for many months or for years, or the itching and scratching ceasing, they may gradually disappear. The lichenification itself may be treated either with the *x*-rays or with radium. The author has had the best results with the latter.

2. Fevers of Obscure Origin in Infancy.—C. P. Lapage states that when confronted with a case of fever in a child—fever which has no obvious cause on clinical examination, and which is not merely temporary, passing off with a purgative—it is best to proceed by a process of exclusion. One must examine carefully first for chest conditions, such as deep-seated or apical pneumonia, localized empyemata, collections of pus; then for tonsillar, pharyngeal, or nasopharyngeal conditions, and for otitis media (this last a by no means uncommon cause of fever, and one needing some skill to diagnose); and, finally, for abdominal conditions, such as appendicitis. Post-influenzal conditions may give rise to much anxiety, because there may be so little to show for the temperature, and visions of many far more serious conditions pass across the mind of the medical attendant, who can only have recourse to the process of elimination. Another common but obscure cause of fever is the presence of caseous glands, either bronchial, mediastinal, or mesenteric. In some cases they are so marked as to be obvious on palpation or percussion, but in most cases they are by no means easily diagnosed, the only symptoms being of a general nature. The cutaneous tuberculin reaction and the history are both valuable, while careful palpation of the abdomen is needed, and examination by the *x*-rays is a very important asset to one's means of making a diagnosis. Rheumatism is perhaps one of the most important of the causes of fever in children, and, what is more, its ravages may be of an obscure nature. Leucemia and Hodgkin's disease may run a high course with exacerations during which there may be high fever. An obscure but common cause of fever is infection of the urinary tract with *Bacillus coli communis*. Inanition fever must be borne in mind. A state of chronic intestinal indigestion is very common in young children, and such cases often have slight but definite rises of temperature of an irregular nature. Typical cases show wasting, a large abdomen, general flabbiness, and other symptoms pointing to a chronic toxemia. The stools are characteristic, being frequent, of large amount, and very offensive; they usually contain particles of incompletely digested food. Postbasic meningitis in infants may sometimes cause fever without definite signs to guide one to the correct diagnosis. Meningitis is often difficult to distinguish from pneumonia, either apical or deep-seated, and from typhoid fever.

3. Study of an Epidemic of Measles.—A. E. Tait presents the results of a study of an epidemic of measles involving 437 cases. He notes that in the first five years of life the fact is remarkable that the curves of pulmonary complications and death percentages are parallel. The cases of measles were most numerous in the fourth year of life, with 16 per cent. pulmonary complications, and no deaths. The total death rate of the epidemic was 5.03 per cent. Severe pulmonary complications supervened in 23.57 per cent of all cases. Pneumococcal infection was the cause of the mortality. Empyema was conspicuous by its absence. Middle ear disease was common, but was amenable to fomentations, mild lotions, and hexamethylenetetramine internally. Diarrhea occurred in 10 per cent. of the cases during the invasion, with the rash, or afterwards, and sometimes during incubation. Alarming croupy symptoms with the rash sometimes occurred, but quickly subsided. Most dangerous were those cases with mild coryzal symptoms and rash, apparently a mild attack in which on the second or third day of the rash acute dyspnea suddenly appeared, a rise in temperature, uncountable pulse, and great restlessness, often ending in death in twenty-four to forty-eight hours. This complication was attributed to collapse of lung.

4. Aneurysm of the Superior Mesenteric Artery with Rupture.—A. H. Gifford reports a case of this condition, the interesting points of which were as follows: (1) The aneurysm must have been one occurring in the superior mesenteric artery in its course behind the pancreas, remnants of the arterial wall being found lying flat on the posterior wall of the cavity. (2) The gradual dilatation of the large aneurysmal cavity had exercised a traction on the aorta itself, so that a fusiform aneurysm was formed. (3) There was a rotation of the aorta, in that the opening of the celiac axis and what must have been the opening of the superior mesenteric artery originally, were found on the right side of the aortic aneurysm. (4) There must have been a gradual and persistent dissection in the upward direction to the lower surface of the liver where the rupture eventually took place, as was evidenced by the thickening and induration of the walls.

July 6, 1912.

1. Puerperal Infection, with Special Reference to Vaccine Treatment. J. Furneaux Jordan.
2. The Etiology of Torsion of the Testis. R. W. Murray.
3. Acute Epididymitis Produced by Muscular Strain. J. W. G. Grant, F.R.C.S.
4. Notes on Sleeping Sickness: Suggestions as Regards Gland Puncture and the Trapping of Tsetse Flies. A. Balfour.
5. The Necessity for the Use of Color Names in a Test for Color-Blindness. F. W. Edridge-Green.

1. Puerperal Infection.—J. Furneaux Jordan differentiates three types of case: 1. Those that are of a mild type and recover easily. 2. Those that are acutely infected and die quickly. 3. Those that are severely infected or ill for a long time, and usually, but not always, recover. If the first rise of temperature is in the first 48 hours and is only a slight one, when there is not great rise in the pulse rate, and the patient does not feel very ill, the best procedure is to wash out the uterus. In many cases the temperature will fall the next morning and never rise again. If the temperature is high, or persists or recurs, the steps to be pursued are as follows: A culture should be taken from the interior of the uterus, and an autogenous vaccine should be prepared. The uterus should be freed of any retained placenta or membranes either manually or by means of a blunt curette. The uterus should then be swabbed out with a piece of cotton dipped in a dilute solution of mercury biniodide, and a drain of iodoform gauze should be inserted. Following this it is considered advisable to give the patient an injection of vaccine containing 25 or 30 million of the *Streptococcus puerperalis*.

2. Etiology of Torsion of the Testis.—R. W. Murray states that in the majority of reported cases the testicle had not descended to the scrotum. The majority of cases occurred in young persons about the age of puberty. In nearly one-half of the recorded cases no definite reason could be given for the torsion occurring. Not infrequently the symptoms occurred while the patient was in bed, and in some cases during sleep. In many instances of acute torsion there had been slight recurrent attacks of pain. In every case operated upon the testicle was found to be twisted upon the epididymis, or both testicle and epididymis were twisted upon the cord. In every case in which the testicle has been untwisted and replaced atrophy of the organ has resulted.

Insurance Medicine.

SUGGESTIONS TO MEDICAL EXAMINERS.

BY THE INSURANCE EDITOR.

THE PHYSICAL EXAMINATION.

THYROID GLAND.—It is advisable to make a special search for the presence of goiter, as a small one is very apt to be missed. A study of this subject shows that while these cases are not entitled to ordinary forms of policies, some of them are acceptable for endowment or rated-up policies, and the examiner is, therefore, depended upon to furnish the following data:

1. How long has the growth existed?
2. Has it increased in size during the past five years?
3. Is it substernal?
4. Is the goitre due to simple hypertrophy or hyperplasia, or is it cystic or degenerating?
5. Is it accompanied by symptoms due to pressure or to any effect on the nervous system?
6. Is there any exophthalmos?
7. Does the applicant live in a healthy environment free from scrofula and tuberculosis?

ABDOMINAL ORGANS.—The physical exploration of the abdominal organs does not always yield the satisfactory results in diagnosis obtained from the examination of the contents of the thorax. Nevertheless, it is imperatively necessary to regularly look for indications of certain pathological conditions. The examiner is urged to follow the suggestions offered in the following sections in order to avoid the correspondence which the home office will surely call for in all cases if the particulars, where there is a history of abdominal pain or colic or indigestion, do not appear in the original report.

Liver.—The liver should always be mapped out so that its size and location may be definitely determined, especially when alcoholic habits are suspected. Moreover, the examiner should never fail to inspect the right hypochondriac and pyloric regions for the presence or after effects of gall stones, most particularly so when there is a history of abdominal pain or colic, indigestion or jaundice. Tenderness as well as tumefaction should be reported in every case when it is found.

Spleen.—The mapping out of this organ is difficult unless it is enlarged. An effort should be made, however, to make out the size when there is a history of malaria, recent typhoid or some disorder of the blood.

Appendix.—Deep pressure for the detection of tenderness or a tumor should be made over the site of the appendix in every case where there is a history of indigestion, bilious attacks, nausea, abdominal pains or colic. In recent cases of any of these disorders the home office officials will usually require a statement from the attending physician, furnished by the applicant, who has the advantage of having observed the condition at the time of its occurrence and is therefore in a better position to state if there was any suspicion of gall stones or appendicitis. The examiner will save valuable time by anticipating this request at the time of the examination. When there has been an appendectomy the home office officials will want to know if there is any undue sensitiveness or induration of the scar and whether or not there are signs of a hernia.

Hernia.—The abdominal, inguinal, and femoral regions should be looked over for the possible presence of a hernia. Whenever a hernia is found it is most important for the examiner to ascertain if it is easily reducible and if the bowel is being well maintained in its normal position by a properly fitted truss. The usefulness of the truss should be determined, for a very large number of those worn are not only absolutely useless, but even harmful. When the hernia is easily reducible but no truss is worn, the examiner should explain the importance of a proper apparatus to the applicant and persuade him to procure and wear one, for most insurance companies insist on this before issuing a policy.

Life Insurance Examinations.—It was recently said by the physician in chief of a large life insurance company that upon investigation it was found that with all their examiners only 25 per cent. of the applicants were completely examined. In other words, histories were poorly and inaccurately taken, the heart and chest were frequently examined without the patient removing his clothing and special examinations of blood pressure, uranalysis, etc., were very carelessly made. This criticism not only reacts upon the individual doctor, but makes an extremely poor impression upon many business men connected with insurance companies and upon the applicant examined. To be appointed examiner for a life insurance company is not only an honor and a responsibility, but it is a legitimate means of gaining skillful experience and increasing practice. The man without a physician often takes for his family doctor some physician who has examined him for life insurance. Insurance companies are now making rigid investigations of their examiners and it behooves every practitioner who does insurance work to do the work for which he is well paid thoroughly, accurately and conscientiously.—*Old Dominion Journal of Medicine and Surgery*, April, 1912.

Associations of Medical Examiners.—From time to time associations of medical examiners have been organized in different parts of the United States and generally with local patronage only. Some of these have been in cities, such as the Boston Society of Examining Physicians and Surgeons, the Chicago Medical Examiners' Association, and the Louisville Medical Examiners' Association. Others have been organized in a certain portion or section of the country, such as the Massachusetts Society of Examining Physicians, the Pacific Coast Association of Insurance Examiners, the Kentucky Association of Medical Examiners, and the Inter-State Examiners' Association. Knowing the fate of local and sectional medical examiners' associations during the fall of 1900, several medical examiners met with Dr. Thos. J. McGowen in Vincennes, Ind., and organized the American Association of Medical Examiners, electing Dr. McGowen president thereof. During the year 1911 the Inter-State Association of Medical Examiners was taken in as the Northwest Section of the American Association of Medical Examiners. In Europe there are medical examiners' associations, usually one to each large country. The Life Assurance Medical Officers' Association, one of the largest, meets quarterly in London. Dr. Frank W. Foxworthy is of the opinion that if all the examiners' associations in this country were merged into one large body more could be accomplished.—*Proceedings of the Second Mid-Year Meeting of the Medical Section of the American Life Convention.*

Book Reviews.

INTERNATIONAL CLINICS. A Quarterly of Illustrated Clinical Lectures and Especially Prepared Original Articles on Treatment, Medicine, Surgery, etc., etc. Edited by HENRY W. CATTELL, A.M., M.D., Philadelphia, U. S. A. . . . Volume I, Twenty-second Series, 1912. Price $2.00. Philadelphia and London: J. B. Lippincott Company, 1912.

THE present volume of this well-known quarterly publication consists of twenty-one articles on diagnosis and treatment, medicine, surgery, diseases of the ear, etc. Among them may be named Wollbarst's study of the source of pus and shreds in the urine. Taylor's article on venereal disease in the United States Navy, Simon Flexner's paper on experimental poliomyelitis, etc. The papers keep up the usual high standard of this periodical.

WHAT TO DO IN CASES OF POISONING. By WILLIAM MURRELL, M.D., F.R.C.P., Senior Physician to the Westminster Hospital; Lecturer on Clinical Medicine and Joint Lecturer on the Principles and Practice of Medicine; Late Examiner in the Universities of Edinburgh, Glasgow and Aberdeen and to the Royal College of Physicians of London. Eleventh edition. Price, $1.00. New York: Paul B. Hoeber, 1912.

THIS admirable pocket manual is so well known as to require no introduction. It discusses in a most comprehensive manner not only the common acute and chronic forms of poisoning, but also the unusual forms, such as poisoning by hair dyes, novocaine, and veratria, bee stings, vitriol throwing, etc. One cannot conceive of a more useful volume that the practitioner should have within easy reach for quick reference. It is small and compact, and may be conveniently stored away in the emergency packet.

THÉRAPEUTIQUE USUELLE DU PRATICIEN, TRAITÉ DE LA TUBERCULOSE. Par ALBERT ROBIN, Professeur de Clinique Thérapeutique à la Faculté de Médecine de Paris; Membre de l'Académie de Médecine. Troisième Série. Price, 8 francs. Paris: Vigot Frères, 1912.

THE third volume of this monumental work on therapeutics is devoted exclusively to the treatment of pulmonary tuberculosis. The eminence of the author both as a clinician and as a teacher is such that the reader and student are already prepared to find this volume one in which thoroughness of presentation and practical utility go hand in hand. The work is divided into six parts. Part I deals with the treatment of pulmonary tuberculosis under the following chapter headings: general consideration on tuberculosis and on its soil; the acceleration of the respiratory exchanges; organic demineralization; and indications for treatment of the tuberculous predisposition and of confirmed phthisis. Part II deals with hygiene and alimentation. Part III takes up the subjects of restricted medication, the principles of remineralization and their application, the remineralization medication, direct and indirect antiseptic treatment, local medication and revulsion, tuberculin therapy, antitoxins, the practical association of the five fundamental forms of medication, the treatment of acute phthisis, the treatment of symptoms, accidents, and complications, hydrotherapy, hydromineral cures, and climatotherapy. Part IV discusses the treatment of tuberculosis according to the age of the patient and the associated morbid conditions. Part V deals with the extrapulmonary localizations of tuberculosis. Part VI discusses the social defences against tuberculosis. This summary shows that the author is not a disciple of therapeutic nihilism. A great deal can be done to arrest the progress of tuberculosis and to relieve its symptoms. The reviewer is aware of no work in which the therapeutic resources for combating tuberculosis are presented in greater detail or with greater thoroughness than in this volume.

THEORIE UND PRAXIS DER INNEREN MEDIZIN. Ein Lehrbuch für Studierende und Ærzte. Von ERICH KINDBORG in Bonn. Zweiter Band. Die Stoffwechselstörungen. Die Krankheiten des Bewegungsappartes und der Verdanungsorgane. Mit 74 Abbildungen. Price, 10 marks. Berlin: Verlag von S. Karger, 1912.

THE plan of this work, which was set forth in the review of the first volume, is to present the subject of internal medicine with full reference to the auxiliary sciences of physics, chemistry, and physiology. The present volume discusses the diseases of metabolism, the diseases of the locomotory apparatus, and the diseases of the digestive apparatus. By reviewing the mains facts in the elementary sciences upon which the theory and practice of medicine depend, the author assists the student in gathering together the scattered threads of knowledge in forming the larger concepts of disease and its management. Thus, in discussing the diseases of metabolism, the author introduces the subject with a brief exposition of caloric values and the various stages in the physiology of metabolism. In connection with the diagnosis of diabetes the physics of the polarization of light is fully presented with the aid of illustrative diagrams. The chemistry of digestion and the various chemical methods employed in the clinical diagnosis of gastrointestinal diseases are all fully presented in connection with the discussion of these diseases. In this effort to coordinate the practice of medicine with the elementary sciences, the author follows a sound pedagogical rule. At the same time the practical needs of the student are not overlooked. Treatment is accorded considerable attention. The work is strictly up to date, as may be noted in the description of radium and its application in the treatment of gout.

DER INFANTILISMUS, DIE ASTHENIE UND DEREN BEZIEHUNGEN ZUM NERVENSYSTEM. Von Prof. Dr. PAUL MATHES, Privatdozenten für geburtshülfe und gynäkologie an der Universität in Graz. Mit 8 Abbeldungen in Text. Price, 6 marks. Berlin: Verlag von S. Karger, 1912.

IN this monograph there is presented a learned exposition of the subject of infantilism from the viewpoint of the gynecologist. The work is divided into two parts. Part I deals with the anatomical characteristics under the following headings: infantilism proper, and asthenic enteroptosis. Infantilism proper includes infantilism of the skeleton, genitals, vascular system, the thymicolymphatic variety of Paltauf, and the forms of local infantilism. In the section on asthenic enteroptosis, which, according to modern German writers, represents a form of physiological infantilism, the author discusses the mechanics of the bodily cavities during rest, during respiration, and in enteroptosis; the mechanics of the pelvis, prolapse, visceral weaknesses, and the period of incidence and frequency of the asthenic enteroptosis. Part II deals with the clinical phases of infantilism, its psychic and sympathetic accompaniments, and its manifestations in the circulatory and respiratory apparatus and the digestive organs, including the biliary passages and the appendix. The sexual organs present many phenomena that are included in the category of infantilism: the disturbances of menstruation; the psychic disturbances accompanying the menarche or the establishment of the menstrual function; the disorders of puberty and of the climacteric, and the diseases of the sexual organs. The prognosis and course of these conditions, their therapy, and the social relationship of the victims of infantilism and of the asthenic habitus form the concluding topics in this most comprehensive volume. The importance of the modern conception of infantilism in its numerous ramifications in clinical medicine, pediatrics, gynecology, and neurology, should make this work one of peculiar interest and value to a large circle of medical readers.

DER GYNÄKOLOGISCHE OPERATIONSKURSUS. In sixteen lectures. By Dr. WILHELM LIEPMANN, Berlin. With 409 illustrations. Second Edition. Berlin: August Hirschwald, 1912.

THE second edition of this interesting book has appeared so soon after the first that necessarily it can record but little actual progress. The author has thoroughly revised the old text, however, and added twenty-two new illustrations. He has also expanded the description of the transverse incision between the pubic tubercles and of the combination of the Alexander-Adams operation with laparotomy. Liepmann also proposes a new ligament, the infundibulocolic, which he considers of interest to both the clinician and the operator. The numerous illustrations are of such an excellent character and form, such an important feature in the work that a personal inspection is necessary to appreciate them. In the description of cesarean section, which with certain other obstetrical operations, seems somewhat out of place in a gynecological manual, no mention is made of the high median abdominal incision, which has been quite largely developed in this country, or of the incision low down in the posterior segment as advocated for septic cases. The use of the elastic bag in doing a vaginal cesarean section seems also unnecessary in the majority of the cases. The author's descriptions throughout the book might be improved upon if they were somewhat less disjointed. Otherwise, the book is worthy of praise for the novelty shown in the presentation of the subject. It affords an excellent review of modern German operative procedures in gynecology and is worthy of attention by American operators.

Society Reports.

AMERICAN PEDIATRIC SOCIETY.

Annual Meeting, Held at Hot Springs, Va., May 29, 30, and 31, 1912.

THE PRESIDENT, DR. WALTER LESTER CARR OF NEW YORK, IN THE CHAIR.

(*Concluded from page 88.*)

Thursday, May 30—Second Day.

Some Fundamental Principles in Studying Infant Metabolism.—Dr. FRITZ B. TALBOT and Dr. FRANCIS G. BENEDICT of Boston presented this communication. They stated that knowledge of the energy requirements of infants and the energy content of their food was of fundamental importance in studying their rate of growth and in the treatment of nutritional disorders. The ideal method of determining the energy transformation of infants was that of direct measurement of the heat eliminated and produced, but this involved expensive, elaborate apparatus. The method which they used was that of so-called indirect calorimetry, *e.g.* a computation of the energy transformations from the gaseous exchange. It was pssible to compute with considerable accuracy the energy transformations of an infant from the amount of oxygen consumed and the amount of carbon dioxide produced. The direct measurement of oxygen in young infants had but rarely been determined. Direct determination of carbon dioxide was less difficult and had frequently been made in foreign laboratories. It was the purpose of the paper to point out the inconsistencies arising from the determination of carbon dioxide in infants without taking muscular activity into consideration. They were disposed to question the desirability of long experimental periods for establishing the basal metabolism of infants when such periods might include not only quiet sleep but also periods of activity and even crying. It was necessary to find out what was the ideal length of the experimental period in the infant. This, they thought, was the period when the baby was asleep, absolutely quiet muscularly, and preferably without food in the stomach. The apparatus they used was a modification of that of Benedict and Hamans for experiments upon hypophysectomized dogs. All metabolism experiments in infants made without controlled pulse rates and without graphic records of muscular activity were lessened enormously in value by these two factors.

Dr. JOHN HOWLAND of St. Louis said that if they were able to further perfect the apparatus so that the amount of oxygen could be determined as well as carbon dioxide they would have added enormously to their facilities. Instruments such as Dr. Lusk had used were too expensive and it required four trained men to manage one of them. The methods employed in this country and abroad differed widely. Abroad they were using apparatuses of fifteen or twenty years ago and the results were of no use to investigators in this country. Their results were full of mistakes. Their time periods were twenty out of twenty-four hours, taking children awake, asleep, or crying. These children could not be kept quiet and the result was that the first period of metabolism was 20 or 25 per cent. higher than it was during the last period when the child became accustomed to the apparatus. Dr. Howland hoped that a formula would be found which would not require the estimation of square and cube roots and which could be used more readily and more accurately.

Dr. FRITZ B. TALBOT of Boston, in closing the discussion, said that with regard to the relation between the pulse rate and muscular activity about which Dr. Hamill had asked, he did not know whether there was a definite relation. When the baby was quiet apparently the pulse was at its minimum rate. The charts showed that the pulse varied from ten to fifteen beats during the course of three or four minutes. During the greatest muscular activity the pulse went to its highest point. He did not have sufficient data to enable him to draw definite conclusions as to how much the elevation of the pulse would modify the amount of carbon dioxide excreted. Apparently there was a definite relationship. If the charts were sufficiently studied it would be noted that, in certain instances, there was not sufficient exercise recorded to correspond to the elevation of the pulse rate. His only explanation for this was that the pulse rate was only taken once in every six minutes and the baby might have moved two minutes before. He hoped that by fall they would so perfect their apparatus that it would be possible to estimate the amount of oxygen.

A Case of Retarded Development in a Boy Treated with Thymus Extract.—Dr. CHARLES GILMORE KERLEY and Dr. S. P. BEEBE of New York reported this case. The patient, a boy, 16 years of age, was delicate in appearance and normal mentally. The penis was small and shrunken, the testicles very small; and although they could be brought into the scrotum, they rested in the canal the greater part of the time. There had never been any erection of the penis. Tonic and hygienic treatment was instituted and at the end of nine months there had been a gain in weight of three pounds, but there was no change whatever in the genitals. Desiccated thymus extract was then given, 15 grains daily. During the first six months of this treatment the genitals, penis, and testicles enlarged, and after nine months' use the first erection occurred. At the end of one year's treatment hair began to appear on the pubis and in the axilla and the patient had gained in weight as well as in height. The testicles had remained in the scrotum during the past six months. The sexual organs were now apparently normal.

Dr. L. EMMETT HOLT of New York said that the paper was interesting, but, so far as his experience went, not conclusive. He had seen boys develop so slowly that the advance was imperceptible, then all at once take a start and improve wonderfully without any medication. One should be very careful in drawing conclusions in regard to these so-called specific medications.

Dr. JOHN RUHRÄH of Baltimore said that in many cases of advanced marasmus he had used the thymus and the results were about the same whether this agent was used or not. He felt that there was some close relation between the thymus gland and growth and that if it were possible to give enough one might obtain very satisfactory results. Williams had obtained some striking results with thymus extract in cases of malnutrition and he had tried to find out what cases were benefited by this treatment, but it seemed to him only a case of "hit and miss." It made no difference whether they used thymus or thyroid, the results were the same.

Dr. JOHN HOWLAND of St. Louis said it was next to impossible to get evidence of any kind regarding the thymus. A report appeared some years ago on the results of removal of the thymus in dogs; after removal of the gland the bones of the dogs were fractured and it was found that union was delayed and but little callus formed. When these results were published they were questioned by a good observer. In New York City they had removed the thymus from young puppies and from premature animals delivered by cesarean section, with no results whatever. The experiments were changed to other animals, but it could not be determined whether the removal of the thymus made any difference in the growth of the animal or not. So far as children were concerned the removal of the gland did not seem to be followed by any bad effects; but such cases should be followed at least to the time of puberty. Any medication like this was like "hitting in the dark," for other glands might have been used with similar results.

Dr. FRANK S. CHURCHILL of Chicago said he could not agree with Dr. Howland. There were a number of cases on record where the thymus gland had been removed, almost enough to draw conclusions. It was impossible to entirely remove the gland in infants; after the completion of the operation there would be enough left behind to perform whatever function was necessary.

Dr. J. P. CROZER GRIFFITH of Philadelphia said that the work of a Belgian physician along these lines had interested him and he now had three cases under observation. The Belgian physician had reported one case in which the pituitary gland extract was supposed to have produced excellent results; he was now using that agent in one case, but thus far could see no results. So far as gain in weight was concerned, he did not know which, if any, of these internal secretions to give, or if any of them could be trusted to do good. When they were studying the growth of children they might look in other directions and think of what the neurologists had taught them regarding the rest cure treatment. No child knew how to care for himself, and the parents did not know how to care for the child and usually pushed him mentally and physically. For a number of years, when treating any child who was not doing well, he had enforced rest upon him and had reached the conclusion that the results were extremely valuable.

Dr. HENRY HEIMAN of New York said that the use of these organic products was empirical, but that the administration of thyroid in one grain doses three times a day had given excellent results. He had used it in cases which, like Dr. Kerley's, were in fact cases of infantilism.

Dr. CHARLES GILMORE KERLEY of New York, in closing

the discussion, said that so long as he could keep this boy growing he would continue the use of the thymus extract. What he had given them was simply an exhibit; he did not draw any conclusions. He had two other boys under treatment and they had grown in height, as they had not done before the administration of the thymus.

The Dextrins and Maltose in Infant Feeding.—Dr. THOMAS S. SOUTHWORTH of New York read this paper. He said that in health infants seemed to take with about equal facility the three sugars most commonly employed in making up the deficiency of carbohydrates in diluted cow's milk, namely, milk sugar, cane sugar, and so-called malt sugar, but it had remained for recent investigators of the pathology of nutrition to assign to each of these forms of sugar its relative position as a disturbing factor. Although the advantages of the so-called malt sugar, or maltose, had again received wide recognition for purposes of restoring deficient or halting nutrition in infants, and for furnishing sufficient calories during recovery from food injuries there had been little appreciation of the *rationale* of its action. The terms malt sugar and maltose were inaccurate and misleading. While pure maltose was a rare product of the laboratory, too expensive for general use, and consequently never employed for infant feeding, the commercial products to which this generic term was too often loosely applied were numerous and it was doubtful whether any two of them had the same composition. The term embraced almost any preparation produced by the action of diastatic ferments upon starch. While lactose and saccharose were given in the food by themselves maltose was never administered without an admixture of dextrins, which latter, while capable of being further elaborated into maltose, and subsequently into dextrose, had, for the time being, very different chemical and physical properties. This association of the dextrins with maltose, instead of being a negligible matter, was a factor of considerable importance and might be assumed to play a large part in the favorable effects of the malt preparations in disturbed conditions. Although malt preparations were spoken of as less fermentable than other sugars, it was, of course, an error to think of maltose itself as not liable to fermentation of certain types, since this property of maltose was relied upon in all brewing operations. Dextrin remained unfermented in beer and was immune to fermentation in the intestine until reduced to assimilable maltose. The presence of dextrin played no small part in the therapeutic and nutritive values of maltose dextrin preparations. An interesting field of research was now open for determining the nutritive and therapeutic values in normal and pathological cases of high, average, or low percentage of dextrin in maltose-dextrin mixtures.

Maltose in Infant Feeding.—Dr. JOHN LOVETT MORSE of Boston said there were three different sugars used in infant feeding, lactose, saccharose, and maltose. Maltose was seldom, if ever, used in pure form. These sugars were all disaccharides, lactose being a combination of dextrose and galactose, saccharose of dextrose and levulose. The dextrins were bodies formed in the change from starch to maltose, and there was a great variety of them. Their composition was not well known. The disaccharides were not absorbed as such from the intestine under normal conditions, but were first broken down into their respective monosaccharides by special ferments, maltase, saccharase, and lactase. These were found in the mucous membrane of the small intestine. Maltose was the most quickly absorbed of the three disaccharides and saccharose next. The disaccharides were all fermentable. The composition and maintenance of the normal fecal flora was without question due to the relative excess of carbohydrate, in the form of lactose, in the milk. It was, therefore, of importance to have a considerable amount of sugar in the food of babies fed on mixtures of cow's milk. According to Kendall lactose favored the growth of the *Bacillus bifidus*, while maltose favored the growth of the *Bacillus acidophilus*, which, though normally present in small numbers, if present in large numbers was liable to produce an excessive degree of acidity which might cause intestinal irritation and intolerance for sugar. Finkelstein and Meyer recommended the use of malt sugar in connection with their "eiweiss-milch" after the disappearance of acute symptoms in order to avoid loss of weight and disturbance of nutrition. The use of this method of treatment during the past year had convinced him that there was a variety of intestinal indigestion in infancy which was relieved by reducing the sugar and salts in the food to the minimum and giving large amounts of casein and that the dextrin-maltose preparations could be given to these patients sooner than lactose without causing a return of symptoms. This type was characterized by a number of stools of diminished consistency, green in color, often frothy, acid in reaction, and not infrequently containing mucus and fat curds. In feeding normal infants lactose was for many reasons preferable to maltose, but there was a type of indigestion due to fermentation of sugar in the treatment of the convalescent stage of which maltose was better borne than lactose. Maltose was contraindicated in the treatment of diarrhea due to the gas bacillus and similar organisms and was less useful than lactose in the treatment of those diarrheas caused by the dysentery bacillus.

Dr. JOHN HOWLAND of St. Louis said more work should be done in the investigation of the dextrins. They had been told that feeding infants with pure dextrin and no maltose was not good; they had also been told that ten babies thus fed by Keller had died as the result, and, therefore, they had not used pure dextrin. The Germans looked upon the use of lactose in normal children as dangerous and cited their experiments on puppies. However, the puppies that had rickets did well on this feeding; if they were fed on glucose and maltose they did badly; if they were fed upon saccharose they died. Dr. Howland did not think the use of lactose was dangerous in dysentery; in large quantities it would increase the diarrhea and this should be borne in mind. The experimental reports showing lactose to be a useful form of treatment must be accepted.

Dr. ISAAC ABT of Chicago said that he had been using the malt preparations for some time and normal children did very well so far as the gain in weight was concerned. It was well known that all the preparations belonging to the malt-dextrin group would cause constipation, and, therefore, it was necessary to add some substance to overcome this tendency. When combined with lactose there was less tendency to constipation. The whole subject of the bacteriology of the gastrointestinal tract remained in such an indefinite state that one could not as yet draw any conclusions from the work that had been done, much less could sugars be prescribed on the basis of the intestinal flora. Too much importance was being given to the sugars alone. It seemed to him that the normal child did equally well on malt sugar, cane sugar, or sugar of milk.

Dr. ROWLAND G. FREEMAN of New York said he thought the warning as to the use of malt sugar was timely. All babies should have a chance at normal feeding before being given the abnormal. There was a tendency to place children on these malt foods because they grew faster. Investigation had shown that in many cases scurvy was due to the use of proprietary foods; those that he had seen himself were fed on malt foods. If the babies did not do well on lactose, then one should change to maltose.

Dr. L. EMMETT HOLT of New York said that it was a fact that children fed on maltose did develop scurvy. The use of lactose would overcome the constipation from which so many children suffered and, in his opinion, the liquid preparation was better than the dried ones. In a study of certain sugars made last year it was found that lactose in solution was practically sterile as was cane sugar, but maltose preparations contained many organisms that were quite pathogenic. These organisms were killed only by a high temperature (the boiling point for twenty minutes). That temperature would change the composition of the sugar. They still had much to learn about variations in sugars and their use in abnormal cases. The use of cane sugar in diarrhea, where both malt sugar and maltose were badly tolerated, was a great advantage. That was the secret of success in the use of ordinary condensed milk. Dr. Holt said that in the main he agreed with the conclusions drawn.

Dr. L. E. LAFETRA of New York said that he had decided that the use of milk sugar did harm especially in certain cases. Cases of diarrhea occurring in some hospital patients would improve when cane sugar, or one of the dextrin malt preparations was used, or when the amount of milk was lessened. During the past ten months he had been using not only cane sugar, but the malt preparations as well and had obtained the best results. In many cases of diarrhea they obtained the best results by diminishing the amount of sugar of milk. In cases with thin acid stools and large amounts of mucus and blood it was a mistake to resume the use of sugar of milk too early.

Dr. HENRY L. COIT of Newark, N. J., said he believed that there was a chemical as well as a gross difference due to contamination between mother's sugar of milk and the commercial sugar of milk, and for that reason he had tried to get at the firms that were marketing the sugar of milk. After considerable difficulty, he had obtained an audience with the chemist of one firm who admitted the presence of bacterial toxins, but said that the sugar of milk answered the requirements of the

pharmacopœia. Professor Leeds had made an investigation and had found that sugar of milk was full of bacteria and also of chemical impurities. One should never use more than one ounce of sugar of milk and this should be boiled. The brand of milk sugar known as "XXX" was the finest and was prepared by redissolving the ordinary product, filtering it, and boiling it down until it formed into crystals.

Dr. J. P. Crozer Griffith of Philadelphia said he wished to call attention to the fact that a committee had been appointed to study scurvy and had reported that a large number of cases of that disease were caused by malt preparations.

Dr. Alfred Hand, Jr., of Philadelphia said that while he had never conducted a scientific investigation on the influence of sugars in infant feeding, he had the impression that lactose tended to produce diarrhea. In private practice where milk sugar was used so much there was a tendency to constipation. Where a child was obstinately constipated, lactose or saccharose had a tendency to regulate the bowels.

Dr. Thomas S. Southworth of New York said that Dr. Morse had spoken of the disadvantages of the use of starch, and he, himself, had long maintained that starch could be overused in children and one should be careful as to the amount used, especially of the various diluents. He had used barley water widely during the past decade in children who were not doing particularly well on other diluents. Dr. Southworth said that he had been interested in Dr. Abt's statement regarding the use of malt-dextrin mixtures being constipating rather than laxative; this corresponded with his own experience. This effect was probably due to the extraction of fluids from the tissues.

Dr. John Lovett Morse of Boston said that he could not see a single reason for the use of milk sugar. There were those who claimed that the milk sugar of cow's milk was chemically different from the milk sugar of mother's milk. This was not true; chemically they were the same. Boiling the milk sugar might destroy the bacteria but it did not destroy the toxic products. Dr. Morse referred to Dr. Kendall's work in Boston and said that during the summer of 1910 they had given the babies with diarrhea a solution of maltose and all the men on the hospital staff felt that only good had resulted.

Friday, May 31—Fourth Day.

Serum Treatment of Pneumonia.—Dr. Rowland G Freeman of New York read this paper. He said that of the three treatments that were based on laboratory investigation one might mention the use of leucocyte extracts advocated by Hiss, the use of vaccines either commercial or autogenous, and the use of the serum. He had tried the antipneumococcus serum on account of the usually favorable results reported. The cases admitted to the series were those with high temperature with good signs in the chest. He used alternate cases as controls. In none of the cases was there any irritation at the point of injection. In all of the cases the injections were followed by urticaria, but without fever or general disturbance. The average age of the children injected was twenty months, and of the controls 11 months. In many cases there was an immediate change in the appearance of the child. Children that looked septic in several cases after the injection had a good color, were brighter, took feeding better, and seemed much improved, although the condition in the lung was no better or spreading. The serum injections, while apparently affecting the course of the disease favorably in some instances, appeared to have no result in others; in most cases there appeared to be a better reaction on the part of the child after the injection than before. The injection was usually followed by some reduction in leucocytosis and the percentage of polynuclear leucocytes increased. In these favorably influenced cases there was little spreading of the disease after injection, and in some a fairly rapid resolution. The pneumococcus serum presented a safe method of attempting to influence the course of pneumonia in children; the addition of antistreptococcus serum seemed to offer no advantage over the use of the pneumoccocus serum alone.

Dr. Matthias Nicoll, Jr., of New York said that he had had a fairly large experience with the pneumococcus serum both in children and in adults and he thought that Dr. Freeman's conclusions were those that all must arrive at, namely, that the case was not proven. Sometimes good results were obtained and at others no results at all. One should give large doses, at least 100 c.c. Dr. Nicoll related his experience in attempting to immunize diphtheria patients against pneumonia and could not see that the mortality rate was affected by the use of the serum. It was difficult, therefore, to have a great deal of faith in the curative value of a serum which had so little apparent protective power against the organism whose activities it was designed to control. Dr. Nicoll said he preferred to give the serum intravenously, but that a dose of 100 c.c. could easily be given subcutaneously. The serum should be given in prolonged cases of pneumonia where the patients seemed to be daily losing ground. He had never seen any bad results from the injections even when large doses were given intravenously.

The Employment of Salvarsan in Infants and Young Children.—Dr. L. E. LaFetra of New York read this paper. If they considered only the moderate grades of congenital syphilis the older methods had been quite satisfactory. On account of the high mortality of the serious cases and the possibility of late manifestations of the disease a more powerful and certain remedy was needed. Salvarsan might be given indirectly to the infant by injecting the mother during gestation or lactation, or it might be given directly to the infant. The subcutaneous method produced bad sloughs or cellulitis and had to be abandoned. Since June 11, 1911, in the Children's Wards of Bellevue Hospital, Dr. LaFetra had treated 25 cases of congenital syphilis. Of these 10 received salvarsan either with or without mercurial treatment, while 15 were treated by mercurials alone. The ages of the 15 patients in whom only mercury was used ranged from three weeks to one year, most of the babies being about three months of age. The ages of the 10 cases treated with salvarsan ranged from two months to two and one-half years. Of those treated by mercurials alone, three improved, two were unimproved, and ten died. The ten cases treated with salvarsan showd a mortality of only two; all the other cases were decidedly improved and showed marked gain in weight and improvement in general condition in addition to the disappearance of their specific symptoms. Dr. LaFetra concluded that while the method of giving salvarsan to the nursing mother was valuable and should be used when the mother was available, the surest method consisted in giving the salvarsan to the infant and that both direct and indirect methods should be used where possible. The dosage should not be less than 0.01 grams per kilo weight. Repeated injections and supplemental treatment by mercurials might be necessary. The Wassermann reaction should be followed for one year.

Dr. Butterworth said that only those who had tried to enter the veins of the upper extremities realized the difficulties and he advised the use of the vein over the internal malleolus which had given very satisfactory results. The repeated injections of small doses of salvarsan was better than the giving of the larger doses. The simplicity of the apparatus presented commended itself to him.

Dr. Fritz B. Talbot of Boston said that from the experience of Dr. Vincent of Boston with transfusion he had found that injections into the jugular vein was the most practical of all. In ten cases that had come under his observation there was no trouble when the injection was made into this vein.

Dr. Isaac Abt of Chicago asked how old the children were.

Dr. L. E. LaFetra replied that their ages ranged from six weeks to two years, one child being five and one-half years of age. The apparatus presented possessed the advantage of permitting several injections to be given at the same time. The use of the glass tube was undoubtedly a great advantage, as the fluid could flow through it with greater facility.

A Specimen and Radiograms of a Case of Chondrodystrophy.—Dr. L. E. La Fetra reported this case, and presented specimens and radiograms. The child was admitted to the hospital when a day old and died a little over two months later. The autopsy gave the anatomical diagnosis of chondrodystrophia congenitalis and rachitis. The anterior fontadelle was five c.m. wide and six c.m. long. The sutures were wide open. There was a marked rachitic rosary, the swelling being most marked in the inside of the thorax. There was no Harrison's groove, but a longitudinal groove just external to the costochondral junction. The xiphoid cartilage was bifurcated. The left lung was atelectatic. The heart lay to the right, the aorta being visible and to the right of the pulmonary artery. There was a small patent foramen ovale. The thyroid gland was small. The foramen magnum was very narrow and the clivus was steep. The radiograph showed all the essential bony and joint changes characteristic of achondroplasia. There were no points of ossification for the epiphyses of any of the bones of the upper extremities, but the lower epiphyses of the femur were partially ossified. The diaphyseal ends of the bones were broadened.

The Influence of Milk Stations on Infant Mortality.—Dr. Samuel S. Adams of Washington, D. C., read this paper. He described the milk stations in Washington and said that during the past season they had distributed 322,400 bottles of milk to 213 infants and the total number of cases lost from all causes was 29. He had also given a course of sixty lectures on the care of infants. The total attendance to these lectures was 2,034. Cash prizes were given to young people for the best essays on these lectures. Other prizes were given for attendance and good behavior. Owing to the benefaction of Mr. George M. Oyster, who had made this work possible, the mortality of infants in Washington had been reduced markedly in contrast with that of the rest of the District of Columbia.

Dr. Rowland G. Freeman of New York said there was undoubtedly a great reduction in infant mortality after the establishment of milk depots. This reduction could not be accomplished by education alone. In certain communities in France the infant mortality had been reduced 60 per cent. by the establishment of milk depots.

Dr. J. H. Mason Knox, Jr., of Baltimore said that the statistics given by Dr. Adams corresponded to theirs. There was one feature of the work that had not received the attention that it should and that was the visits to expectant mothers. They had endeavored, therefore, to get into touch with obstetric clinics. The results of one year's work at the Hopkins Clinic, where they had experience with over 500 babies and mothers, was a mortality of only 5 per cent. Fifty per cent. of these were colored people. Of these 40 per cent. were illegitimate children and 60 per cent. of these were entirely breast fed as the result of prenatal instruction. As pediatricians they should encourage better obstetrics.

Dr. Henry L. Coit of Newark, N. J., said he wished to emphasize the point that the nurses employed in this social and educational work should be well trained and well educated, with good judgment and with experience in handling the young. He had such a nurse in Newark and as a result of her work among 515 babies they had obtained a mortality of only 2.7 per cent. Dr. Coit agreed with Dr. Freeman that it would be unfortunate to swing to education alone rather than the dispensing of milk; both were of great value and should be used conjointly.

Dr. Samuel S. Adams of Washington, D. C., said in closing the discussion, that one of the first things to be done was to educate the people in the care of the milk. In their milk stations he insisted that the doctors should be familiar with modern methods of infant feeding. Patent foods were barred but they were permitted to use cereals in combination; otherwise they were not handicapped. Some of the doctors preferred raw milk and some pasteurized. The matter of prenatal visits belonged to obstetrics rather than to pediatrics. Dr. Adams laid emphasis on the importance of the nurses being firm with the people and called attention to the advantage of having attractive nurses as they impressed the parents more favorably.

Election of Officers.—*President*, Dr. John Lovett Morse of Boston; *Vice-President*, Dr. John Rurãh of Baltimore; *Secretary*, Dr. Samuel S. Adams of Washington, D. C.; *Treasurer*, Dr. Chas. Hunter Dunn of Boston, Mass.; *Recorder and Editor*, Dr. L. E. La Fetra of New York; *Representative of the American Pediatric Society, Committee on Arrangements for the meeting of the Congress in Washington, D. C.*, 1913, Dr. Samuel S. Adams. Place of meeting, Washington, D. C.

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, Held May 16, 1912.

Dr. William M. Polk, in the Chair.

This meeting was held under the auspices of the Section on Ophthalmology.

Relationship of So-called Gastrointestinal Autointoxication to the Etiology and Treatment of Certain Ocular Disorders.—Dr. G. E. de Schweinitz of Philadelphia said that because certain ocular disorders, notably those of the uveal tract, the episclera and perhaps the cornea, existed without our ability satisfactorily to determine the etiological factors, syphilis, tuberculosis, injury, and direct infection having been definitely excluded, and because within the last few years it had been the endeavor of certain investigators to bring some of the diseases in relationship with autointoxication, and because this had led to an animated controversy at present going on, particularly in foreign journals, and because the examinations in many of these instances have been insufficient to prove the presence of a gastrointestinal autointoxication, it seemed to him worth while to recite his personal experience in this matter, and incidentally to refer to some of the recent literature. After a description of the elaborate analyses to which the urine, feces, and stomach contents of the examined patients were subjected, Dr. de Schweinitz summarized the factors which justified a diagnosis of gastrointestinal autointoxication. He dwelt particularly on the quality and character of the urine, especially upon its quantitative analysis, and upon the percentage of ammonia nitrogen to the total nitrogen, upon the fatty acids, and upon the relation of the conjugate sulphates to the total sulphates. Full reference was made to the presence of acetone, urobilin, phenol, and indican, and the opinion was expressed that indican was much overrated as an index of gastrointestinal autointoxication. Dr. de Schweinitz next recited the literature pertaining to this subject from the ocular standpoint, and particularly referred to the efforts of some investigators to bring autointoxication gastrointestinalis into etiological relationship with certain eye diseases, making special reference to the recent papers of Elschnig, von Hippel, and Steulp. Next a summary of the results of the examination of twenty-three patients, with various ocular diseases, chiefly of the uveal tract, was presented, the analyses having been made according to the most improved methods, some of them by Drs. Edsall and Fife, but most of them by Dr. Edward Goodman. The effect of treatment of these patients under the influence of dietetic regimen, worked out according to the results of the analyses, was described, as was also the probable influence of other factors. In all of these patients syphilis, tuberculosis, injury, and direct infection had been eliminated by careful clinical and laboratory methods. He concluded his paper as follows: "First, indicanuria alone must not be taken as the index of an autointoxication proceeding from the gastrointestinal tract, and the potency of this substance as an index of such intoxication, in the asbsence of any other tests or findings, was practically valueless. Second, if the question be asked whether there was any known disease of any of the histological systems of the eye which of itself would justify the inference that an intestinal autointoxication was present, the answer must be "no." In the first place, there was no certain knowledge of any specific intoxication depending upon the nonelimination of metabolic products, and in the second place, the clinical pictures of ocular diseases, for example, of the uveal tract, might be identical although their etiology might be widely different. Third, if the question be asked whether laboratory examinations had isolated any definite toxin to the influence of which could be attributed any of the ocular disorders to which reference had been made this evening, the answer must be "no." If such a criterion of diagnosis of autointoxication was necessary, then none of the ocular disorders described this evening could be regarded as expressions of metabolic disturbance. Fourth, these answers being negative, one naturally inquired was it worth while to make a study of patients with various eye diseases, particularly those of the uveal tract, when the usual etiological factors, syphilis, tuberculosis, etc., were absent, according to the methods described. To this question an affirmative answer might be given. Thoroughly appreciating the fact that the diagnosis of autointoxication was one at which many clinicians look askance, he felt that much of the opprobrium was partly due to the loose and inconsequential manner, as Dr. Goodman put it, in which the term had been employed, and in which the diagnosis had been made. It went without saying that in using the term gastrointestinal autointoxication reference was made to substances which were formed under the influence of vital processes of the organism, and that autointoxication by infection, by the resorption of the products of cryptogenetic infection, and by the absorption of alimentary poisons, meat, sausage, fish, etc., was not to be considered as an autointoxication. But surely the careful analyses to which these patients had been subjected put them in possession of the evidences of intestinal putrefaction, and through them they became acquainted with the patient's nitrogen metabolism, and were enabled under these circumstances to make regulations in diet, strictly scientific regulations in diet, which, whether directly or indirectly, accomplished good. This had been proved many times when prior to these examinations, although the usual remedies for the relief of the diseases under consideration were utilized, the results were indifferent. What the writer insisted upon was that certain uveal tract and corneal affections should be sharply separated from the perfunctory examinations which they had only too often received and from the equally perfunctory and inefficient therapeutic measures which had

been accorded to them. He could not believe that there was any mistake in thoroughly examining a patient, and he could not believe, even though no one had yet been able to prove that autointoxication gastrointestinalis was directly responsible, for example, for uveitis, as was the toxin of syphilis or the toxin of tuberculosis, that it was entirely without influence, or that the restoration to the normal point of a previously deranged metabolism was without its good influence from the therapeutic standpoint. Moreover, he was convinced that such work as Edsall and he, himself, had done nine years ago, and such work as Elschnig, frankly acknowledging the imperfections of his chemical studies, had performed, as well as the later much more thorough studies that had been made by Fife, Goodman and myself, had been of definite value. Elschnig in his most recent communication fully recognized the need of more exact analyses in order to prove his point, and he had started one of the young internists of his clinic in a more thorough examination of cases of relapsing uveitis from this standpoint. If this sort of work was pursued, and he trusted that it would receive attention, it was possible that they might ultimately separate from the large group of relapsing uveal tract diseases a certain number which, if they were not actually caused by autointoxication, which certainly had not been proved, at least occurred in the subjects of this state of affairs, and yielded when under proper dietetic regimen only properly worked out as the result of such analyses, restoration of a normal metabolism.

Furthermore, since many of these diseases, particularly those termed uveitis and iridocyclitis, were distinctly relapsing in character, it was just possible that in some vague way autointoxication might be a determining factor in the relapse. He was not sure that this might not be the chief value which accrued from these studies. Even if certain types of uveal tract diseases which laboratory and clinical tests failed to connect with the usual etiological factors were not directly caused by a gastrointestinal autointoxication, their relapses might be fostered or stimulated by this condition. In a number of instances he had noted that when the strict dietetic regimen was dropped, as, for example, it was by the patient with sclerokeratitis, a sharp relapse ensued. When the analyses indicated a return to normal conditions under dietetic treatment the relapse subsided, and as long as the patient strictly adhered to the diet, or as long as there was no re-establishment of the symptoms which were supposed to indicate autointoxication, relapse did not occur. Unfortunately for his theory, this did not hold good in all cases, as he had seen sharp relapses while the diet was being strictly pursued and the urine analysis was normal. He referred to the matter only because it showed how much careful study must be given to this subject, and how, if it was given, it was possible that they might carefully narrow down a small but none the less definite group of uveal tract disorders, which in some way depended upon an autotoxic state enterogenous in origin. So much had been found out by chemical examination, both in matters etiologic and therapeutic, that he pleaded for this method of examination when it seemed to be necessary, and especially when they were in the dark as to what was causing the particular ocular disease under consideration. To be sure (to quote from Alonzo Taylor) to estimate properly any concept of autointoxication the rôle of compensation and of adaptation in physiological and chemical function must be borne in mind, and they must not expect autointoxication with all disturbances in metabolism, but when autointoxication was apparently proved to be present by such chemical examination as had been described, then it seemed to him that they had found something for removal, and with this removal had gained a point in therapy which it was the patient's right to receive.

Dr. Emil Gruening said that Dr. de Schweinitz was doing a great service to medicine in combining clinical work with laboratory research. The laboratory of physiological chemistry of the University of Pennsylvania was at his disposal and Dr. de Schweinitz was making good use of his unusual facilities. If he had not yet demonstrated the relationship of so-called autointoxication to the etiology of certain ocular diseases, it was due to the difficulty of solving so intricate a problem. His criticism of the work of Elschnig and others who based their reasoning on the presence of indican in the urine was just, but in these critical views he had been preceded in Germany by Eugen von Hippel and O. Stuelp. If in a given case of iridocyclitis we excluded the most frequent etiological factors, viz., tuberculosis and syphilis, we still had to consider a multitude of causative possibilities such as rheumatism, gout, gonorrhea, disease of the accessory sinuses of the nose, etc., before one could have recourse to the vague conjecture of the existence of intestinal autointoxication.

Dr. Colman Ward Cutler said he would not attempt to trespass on the ground so admirably covered by Doctors de Schweinitz and Goodwin. A case of uveitis might be cited, however, which would illustrate some of the difficulties the oculist faced. A colored man, 28 years of age, presented himself with an acute uveits: vitreous opaque, posterior surface of cornea covered with fine opacities, vision 10/200. Blurring of vision was first noticed a week previously. With indifferent treatment (aspirin in moderate doses and a culture of lactic bacillus twice daily) he improved rapidly, and in a month vision became normal and it was possible to see the exudate and edema in various parts of the retina with two patches resembling the so-called plastic choroiditis. The examination of the urine had been negative with the exception of excessive indican. When first seen there were three small suppurating foci at the margin of the lower lid of the affected eye. This case was by no means unusual and without the most thorough investigation it would be impossible to say whether it was an infection or an intoxication. It seemed to him like the former. They saw cases of uveitis, however, which were less acute and appeared more of an irritative than an inflammatory type (if the distinction might be made), where no focus or source of inflammation could be found. It would be interesting if Dr. de Schweinitz could, in his large experience, offer some suggestion for classifying these cases. With regard to the etiology, it might be well to consider anaphylaxis as a possible factor in intoxication. The suggestion of increased sensitiveness as a factor in the causation of phlyctenules was worthy of consideration in these obscure eruptions of the uveal tract.

Dr. Edgar S. Thomson said that he had very little to add to the discussion except his personal impressions which were the results of following the line of treatment suggested by Dr. de Schweinitz in his paper on "Autointoxication," which he read six years ago, before the American Medical Association. He had been in the habit of carefully regulating the digestive conditions, so as to eliminate this cause, and believed that in many cases of choroiditis, autointoxication played an important part. Certainly, the cases cleared up more rapidly under treatment of the gastrointestinal tract, than under other methods. He was of the impression that many cases of so-called rheumatic iritis, also certain forms of episcleral inflammation at the corneal margin, were due to this cause, and thought that the whole subject merited further investigation.

SECTION ON MEDICINE.

Stated Meeting, Held May 21, 1912.

Dr. Walter I. Niles in the Chair.

Fatal Pneumothorax Following Exploratory Puncture.—Dr. Hughes Dayton reported these two cases. He said that in a paper read before the Section in October, 1911, the statement was made that the importance of pneumothorax after exploratory puncture depended upon the condition of the patient at the time of its occurrence and upon the physical state of the perforated lung, which might permit contraction of the puncture or favor extreme or progressive pneumothorax. Since that time two fatal cases had forced the conclusion that the physical state of the opposite lung might be of even greater importance. The first patient was a woman, 58 years of age, the only significant point in whose history was a chronic cough which had persisted for many years. In February, 1911, she was treated for an attack which was diagnosed as pneumonia. She became ill again December 29, 1911. Over both lungs there was a slightly woody resonance, high pitched voice and occasional sibilant and crepitant râles. Posteriorly over the left base, where consolidation had been present the year before, there was impaired resonance and diminished breathing. Six specimens examined for tubercle bacilli were negative. The urine was that of chronic interstitial nephritis. On February 22 the left chest from the seventh rib to the base and extending out four inches from the median line showed dullness and many subcrepitant râles; over the upper part of this area were bronchial breathing, voice, and whisper. Two days later the writer noted signs suggestive of a cavity which within a few minutes after coughing disappeared completely. On March 5, aspiration of the right chest was ordered. The needle was inserted in the sixth right intercostal space just internal to the vertebral border of the scapula. The needle was carefully inserted about one inch and nothing was obtained. The patient complained of intense pain at the site of the puncture after the withdrawal of the needle. She then showed severe and increasing dyspnea and cyanosis. Signs of subcutaneous

emphysema appeared over an area three or four inches in diameter around the site of the puncture. Over the entire right chest were dull tympany and very distinct breath sounds. The right border of cardiac dullness was displaced from the right to the left sternal margin. The patient failed to respond to stimulation, the note over the right chest becoming more dull and losing its tympanic quality. Death ensued. The autopsy showed the diaphragm extending to the fifth space on the right side and to the fourth on the left. The right lung seemed collapsed in part and the heart was displaced to the left. The right pleural cavity was dry. No evidence of a puncture of the lung was found, but besides signs of adhesive pleurisy and right pneumothorax, chronic pleurisy and chronic fibroid phthisis with cavity formation in the left lung were found; other lesions included those of interstitial nephritis, chronic interstitial splenitis, perihepatitis, fibrous goiter, and a calcified uterine fibroma. Although no puncture hole could be found, a small perforation by the needle seemed proven by exclusion. Operation upon the chest would have been ineffective because the asphyxia was due to the collapse of the only serviceable lung. The chief object in reporting this case was to emphasize the danger that existed in puncturing cases in which chronic inflammatory processes were present. A second case of fatal pneumothorax following exploratory puncture was that of a man, 30 years of age, who was suffering apparently from lobar pneumonia involving the right lower lobe. Signs of consolidation of the right lower lobe and the apex of the upper lobe persisted, especially near the spine of the scapula, where they suggested an interlobar empyema. Signs of a suppurative process in the left shoulder developed and an abscess was drained through the deltoid muscle. The *x*-ray showed infiltration of much of the right lung and signs of consolidation became more marked. A needle was inserted in the upper portion of the left chest posteriorly in search of other collections of pus. A few minutes after this puncture the patient complained of a choking sensation and became dyspneic with profuse sweating. Physical signs of pneumothorax developed and the patient died from asphyxia. At autopsy, universal thick pleural adhesions were found over the right lung, which was filled with innumerable tubercles. The apex of the left lung contained many tubercles and the overlying pleura was adherent. The rest of the lung was collapsed. The site of the puncture was not found, but was probably in or near the adherent pleura. As in the first case, it was almost incomplete disability of the unwounded lung which led to the fatal termination from pneumothorax. The point that these cases emphasized above all was that the most serious and sudden results of the occurrence of pneumothorax due to exploratory puncture followed injury, not of the diseased, but of the efficient lung, when, as in the two cases, the diseased lung was so incapacitated by consolidation and adhesions as to be incapable of adjusting itself to the unusual task. The conclusion seemed inevitable that in the presence of probable chronic inflammatory disease of the lung, exploratory puncture should be restricted to cases in which there were good reasons for suspecting the existence of purulent exudate which would require surgical treatment.

The balance of the evening was devoted to contributions from the wards of the second medical division of Bellevue Hospital.

Metabolism Studies on a Case of Typhoid Fever Complicated by Glycosuria.—Dr. Warren Coleman and Dr. E. F. Dubois reported this case. The patient was twenty-seven years old and of obese habit. There was nothing new to be learned from the histories of the parents, brothers, or sisters. In his own history there was nothing that pointed to the fact that the sugar was more than temporary in the urine. Charts were shown of the temperature, weight, and food curve as well as the heat production. There was nothing special to be said in regard to the temperature. The weight curve fell during the fourteenth and twenty-eighth day. It was an interesting fact that sixty calories per day was not sufficient to sustain the patient in weight equilibrium. What he wished especially to call attention to was that the retention of water was responsible for the sustenance of the weight. It was very difficult to hold patients in a nitrogen equilibrium. The nitrogen balance was markedly irregular in the nitrogen excretion. The amount of sugar excreted corresponded very well with the amount of carbohydrates the patient received. An interesting point was that they must assume that it was not the amount of carbohydrates the patient received that was responsible for the glycosuria. Among fifty cases that had been carefully studied there had occurred no acidosis and no acetone bodies had appeared.

Observations on a Case of Paroxysmal Hemoglobinuria.—Dr. Robert A. Cooke presented this communication. He said that in 1904 Donath and Landsteiner attributed the attack characteristic of the disease to a specific hemolyzing substance in the blood of these patients and they demonstrated its presence by experiments *in vitro*. Since that time a number of observations had been made by different investigators, all of whom confirmed the presence of the autolysin, but with regard to the mode of action of this substance there was no unanimity of opinion. The following case was studied with a view to clearing up some of the disputed points. The case was a typical one of paroxysmal hemoglobinuria in a man without history and with none of the stigmata of congenital or acquired syphilis, but with a positive Wassermann reaction and positive luetin test. The writer considered the hemolysin under the following headings and described his experiments: 1. Demonstration of the autohemolysin. 2. Absorption of the autoantibody from inactive serum. 3. Dissociation of corpuscle antibody combination. 4. Absorption of complement from active serum. 5. Action of complement on red blood corpuscle sensitized with inactive hemolytic serum. 6. Mode of action of the autohemolysin. 7. Etiology of paroxysmal hemoglobinuria. He summarized the results of his experiments as follows: The serum contained a complex hemolysin capable of dissolving the red blood corpuscles of the individual himself or other individuals by means of the cold-warm experiment. Positive results were obtained in all of the twelve experiments made at different times. Autoantibody was absorbed from serum in the absence of complement and on elevation of temperature was more or less completely but slowly dissociated. Complement was absorbed from active serum on exposure to the corpuscle in the cold. It would join with the antibody after the latter had united with the corpuscle, but this union took place solely under the influence of cold. Corpuscles sensitized with inactive serum showed slight hemolysis on the addition of complement as a result of complementoid inhibition. As a result of clinical observation, the Wassermann reaction, the luetin test, and the serological studies in metasyphilitic disease, it seemed safe to say that syphilis was the most important, and perhaps the only, etiological factor in paroxysmal hemoglobinuria, but there were as yet no observations on the presence or absence of the hemolysin after the disappearance of the Wassermann reaction as a result of syphilitic treatment. The case under observation still had a Wassermann reaction, but the writer hoped to report later on this point when the Wassermann reaction had become negative.

Coarctation of the Aorta.—Dr. M. Goodridge reported this case. He said that by coarctation of the aorta was meant a narrowing or stenosis of the descending arch at or immediately below the so-called isthmus of the aorta, that portion of the aorta between the origin of the left subclavian artery and the ductus arteriosus. In extreme cases of stenosis the blood supply of the extremities was dependent upon the establishment of the collateral circulation, and necessarily if the construction was marked this collateral circulation would depend upon the compensatory dilatation of the vessels arising at a point above the stenosis and their anastomoses with vessels arising from a point below the narrowing. In 1903 Bonnet described two types of this condition, the infantile, in which there was a diffuse narrowing of the aorta which was often associated with a patent ductus or other congenital cardiac anomaly, and the adult type characterized by an abrupt constriction of the aorta at or near the insertion of the ductus arteriosus and associated with the development of an extensive collateral circulation. The case reported was of the latter type. On January 29, 1912, a man, 55 years of age, was admitted to Bellevue Hospital whose family history was negative and who had had no serious illness since childhood. The patient admitted a soft chancre twenty-two years ago but denied syphilis and gonorrhea. The patient said that he used alcohol in moderation and tobacco to excess. About one week before admission he began to suffer from palpitation and severe dyspnea on exertion, which increased in severity up to the time of admission. The patient was small of stature and weighed only one hundred pounds. He was mentally defective, his speech being at times unintelligible. The most striking thing revealed by physical examination was the surprising dilatation of the surface vessels in the neck, over the front of the chest, the upper part of the abdomen, and the back. Two inches below the costal margin in the left hypochondrium there was a considerable mass of varicose, dilated,

pulsating arteries. The picture that the back presented was even more striking than that observed over the chest. The posterior scapular arteries on both sides were tremendously dilated, being almost the size of a lead pencil. On the left side there was a mass of tangled, varicose, pulsating arteries forming a clump about two inches in diameter. Over the lower part of the thorax behind several large tortuous vessels were seen extending from the internal border of the scapular to the spinal column, compression of which brought out the fact that the blood was flowing through them toward the aorta instead of in the normal direction. The dorsal branches of the aortic intercostal arteries could be distinguished to the level of the tenth rib on the left side and to the eleventh rib on the right. In these vessels as well the blood was flowing toward the aorta. The apex beat of the heart was not visible. On percussion the left border of the heart was made out 12.5 c.m. from midsternum, the right border 4.5 c.m. to the right and the upper border in the second interspace on the left side. On auscultation the first sound at the apex was obscured by a soft murmur which extended through systole and which was transmitted to the left as far as the midaxilla; at the base a soft systolic murmur was heard, the point of maximum intensity being in the third interspace 4 c.m. to the left of the mid-sternal line and transmitted down the sternum to the apex; the second aortic was accentuated. A loud murmur, systolic in time, was made out along the inner margin of the left scapular behind. The respirations were Cheyne-Stokes in character, the period of dyspnea lasting for twenty-five seconds and the period of apnea thirty-five seconds. Tactile fremitus was diminished, the percussion note was boardy in character over both sides of the chest in front and behind, the breath sounds were diminished, and there were a few moist râles at the end on inspiration over both bases. The radial arteries were thickened, the pulse being 80 during the period of dyspnea and 54 during the period of apnea. The blood pressure in the left arm was 185 millimeters during apnea and 210 during dyspnea; in the left leg it was 170 during apnea and 200 during dyspnea. The blood pressure was higher in the arm than in the leg, which was the reverse of the normal. No pulsation could be made out in the abdominal aorta. Pulsation in the femorals was barely perceptible; the upstroke was distinctly slower and appreciably delayed as compared with the radial arteries. The liver was palpated eight c.m. below the free border of the ribs and the spleen also was palpable. The patellar reflexes were exaggerated, but there was no ankle clonus and no Babinsky. There was a fine tremor in the hands. A clinical diagnosis was made of coarctation of the aorta, hypertrophied and dilated heart, arteriosclerosis, emphysema, and chronic nephritis.

The Effect of Meteoric Conditions on the Vascular System.—Dr. B. RAYMOND HOOBLER read this paper. He called attention to the fact that for some time past weather conditions were becoming more and more recognized as important etiological agents and were receiving more study both from climatologists and from experts in ventilation. The factor in weather conditions most largely studied was that of barometric pressure. B. P. Pomeroy (*Interstate Medical Journal*, Vol. 18, page 731) had recently studied the literature and added his own observations on the effect of barometric pressure on the blood pressure and stated that "The results of nearly all experimental data showed that diminished barometric pressure lowered blood pressure." C. F. Gardiner had shown conclusively that persons changing from an elevation of six thousand feet to one of fourteen thousand feet experienced a fall in blood pressure and a rise in pulse rate. Schneider and Hedblom working with an Erlanger instrument noted that considerable elevation in altitude, that was, in regions of lower barometric pressure, tended to lower systolic and diastolic blood pressure and increased the rate of the heart beat. The fall in systolic pressure was slightly greater and more certain to occur than the fall in diastolic pressure. Another important factor was the relative humidity of the atmosphere. Collis and Penbrey had reported on the effect of warm, humid atmosphere on man. They did their work in the English cotton weaving sheds, where a warm, moist atmosphere was required. They found that the temperature gradually rose from 68° to 101° F., that the relative humidity remained about the same, that the actual humidity was greatly increased; under these conditions the pulse rate increased from 80 to 118 and respiration from 18 to 29. In another experiment in which the atmospheric temperature rose from 70° to 92° F. and relative humidity from 51 to 82 per cent., there was an increase in pulse rates from 80 to 102. These experiments were made on the weavers, both at work and at home resting, and they showed marked variations in pulse rates, in some instances increasing as many as 34 beats during the working period, the temperature of the weaving shed being ten degrees warmer than at home and the relative humidity but slightly increased. Their findings showed that warm, moist atmosphere had a tendency to establish a more uniform temperature of the body as a whole and to throw a tax upon the powers of vascular accommodation as indicated by the low blood pressure, notwithstanding the rapid rate of the pulse. Open air also had a decided effect upon the normal individual. P. P. Aminet examined a large number of healthy children from seven to fifteen years of age in an attempt to find out the influence of outdoor life on the pulse and blood pressure. He found that children living out of doors showed an increase in blood pressure in some cases as much as thirty millimeters of mercury. In only seven out of 140 was there a decrease in pressure. The rate of the pulse was increased by outdoor life. Children living in good surroundings had in general higher blood pressure than those in poor surroundings. These findings were in keeping with the result obtained by the writer in studying the effect of cold fresh air on the blood pressure of children suffering from tuberculosis or pneumonia. L. S. Peters in referring to the effect of temperature on blood pressure said that apparently the higher the temperature the lower the blood pressure, but the writer had found that the converse was true, namely, the colder the temperature the higher the blood pressure. Another meteoric element was that of wind pressure. Starling in a recent communication to the *British Journal of Physiology* (Feb. 17, 1912) stated that a cold wind had a definite influence in raising the pulse rate and that this effect might be so distinct that variation in the wind might be recognized even in individual counts. A number of individuals standing in the wind with a temperature of 44° F. had an average pulse rate of 87.2, while the same individuals in shelter had an average pulse rate of 77.6, a difference of ten beats per minute. Similar tests were made with a number of different groups and all showed the same difference and led to the conclusion that the effect of continued exposure to cold wind or the movement of the body through cold air might be progressive. For example, during a ride in an open car the pulse rate was found to mount gradually from 90 to 100, to 112, to 120, in the course of one and one-half hours' ride. The writer had studied the effect of barometric pressure, temperature, and wind pressure in relation to the occurrence of cerebral hemorrhage, basing his findings on cases that came to autopsy, taking the meteorological records of the United States Weather Bureau. The barometric pressure in New York City varied from 30,024 to 28,420 inches. When estimated in terms of altitude this represented 2,500 feet. In other words, patients might be living at sea level atmospheric pressure and within the space of a few hours be changed to the atmospheric pressure of a mountain top and *vice versa*.

Demonstration of Some Micrographic Tracings.—Dr. F. S. MEARA and Dr. A. C. CREHORE gave a lantern slide demonstration showing tracings recorded by the micrograph, an instrument designed by Dr. Crehore which utilized the phenomenon of the interference of light for registering minute physiological movements and which was demonstrated in detail to the Academy about a year ago. The tracings showed normal phlebograms and cardiograms which detailed, in addition to the usual waves, the valvular events in the heart and registered cardiac murmurs in a number of pathological cases.

SECTION ON OBSTETRICS AND GYNECOLOGY.

Stated Meeting, Held May 23, 1912.

DR. F. A. DORMAN IN THE CHAIR.

Intramural Abscess of the Puerperal Uterus. Intraperitoneal Rupture. Hysterectomy and Recovery.—Dr. ANTONY HART HARRIGAN reported this case. The patient had given birth to a male child four days previous to her admission to the hospital. She had had a severe chill, pain in the lower abdomen, fever, cough, and a bloody fetid lochial discharge. Examination showed the uterus enlarged and boggy, reaching to a level half way between the umbilicus and the symphysis. The cervix was soft and dilated about three inches. Upon opening the peritoneal cavity a large mass was found consisting of the uterus and adherent sigmoid colon, occupying most of the pelvis. On stripping the sigmoid colon, a large abscess with necrotic wall was found on the posterior wall of the uterus, which had ruptured into the parametric tissues. The tubes and broad ligaments were clamped and cut at the ovarian ends. The uterus was completely removed, leaving the cervical

stump. The peritoneum over the uterus was necrotic and friable and much hemorrhage occurred, especially at the site of the left uterine artery. The peritoneum was sewn over the cervical stump with chromic gut. No drainage was instituted. There was free discharge of pus from the wound, but under appropriate treatment the wound gradually granulated and the patient finally made a good recovery. The pathologist's report showed that the uterus measured 6 x 8 x 13 cm. It weighed 250 grams. The walls were thickened and the entire left side on the anterior surface was replaced by a large necrotic mass. The left ovary and tube were adherent to the mass posteriorly. The mass showed no connection with the endometrium. Miscroscopically the section showed a large area of complete necrosis. The muscle cells showed extensive round-celled infiltration and well-marked cloudy swelling. Two small areas of focal necrosis were found between the muscle fibers. The blood vessels were markedly congested. There was a moderate amount of new formed fibrous tissue throughout the section.

Dr. F. A. DORMAN said that he had seen but one case of the type described in addition to one upon which Dr. Boldt had operated. He asked Dr. Harrigan what the temperature was and if any cultures had been taken.

Dr. Harrigan replied that the temperature ranged from 99 to 103.2° F. Cultures were then taken.

Partial Removal of the Bladder for Carcinoma.—Dr. ROBERT T. MORRIS reported this case. The patient was about 50 years of age and had much blood and pus in the urine. A cystoscopic examination made by Dr. H. D. Furniss showed a growth and the question arose as to what was to be done. Finally it was decided to open the abdomen. The bladder was drawn out, split in half, and the right ureter transplanted. The patient now had a sausage-like bladder with a transplanted ureter. The capacity of this bladder was five ounces and the patient could retain her urine for two hours.

Complete Removal of the Urinary Bladder for Carcinoma After Preliminary Bilateral Lumbar Ureterostomy.—Dr. H. D. FURNISS reported this case. He had seen the patient, a woman 50 years of age, for the first time on February 19, 1912. Her previous history was negative. She had one child fifteen years of age. Last summer she had first noticed bladder irritation and some hematuria. This cleared up under medication. For three months before seeing Dr. Furniss she had been suffering from painful and frequent urination. She passed urine easier when standing. The patient lost in weight and strength and the urine was very turbid and contained sufficient blood for her to notice it herself. There was some rectal protrusion from straining. A cystoscopic examination showed a more or less smooth rounded mass arising from the right side of the bladder from above and to the outer side of the urethra. At its base it appeared to be about the thickness of a thumb and extended inward for an inch. The trigonum was very red, infiltrated, and thrown into small folds. The case was diagnosed as one of primary carcinoma of the bladder. The patient was not seen again until April 10, when she complained of severe tenesmus of the bladder, constant inclination to void, and rectal prolapse. The urine had become ammoniacal and caused severe burning and eczema of the thighs. Examination *per vaginam* showed a mass about the size of a duck's egg in the bladder region, most of it lying to the right of the median line. On April 12, a bilateral lumbar ureterostomy was done, a ureteral catheter being tied into each ureter. Both ureters were moderately dilated. A silk ligature was placed at the upper angle of each wound, passing through the external coats of the ureter. On the following day the urine from both ureters showed a moderate amount of pus, a few epithelial cells, and a moderate ring with Heller's test. A fistula into the ureter occurred on the left side at the site of the retaining suture. To close this a catheter was left in for several days. This caused an infection of the renal pelvis which was clearing up under treatment with boric acid solution. On April 27, the bladder was moderately distended with boric acid solution and a ligature placed around the urethra. A median abdominal incision was made, both internal iliac arteries ligated, the peritoneum divided in the median line over the posterior surface of the bladder as low as the anterior cul-de-sac, and the bladder was peeled out with very little hemorrhage. When the bladder had been so separated that the only attachment was the urethra, the vagina was opened from above under the urethra and then by continuing the incision around the urethra through the vagina, the whole bladder and urethra were removed. As the operation was almost finished a small opening was accidentally made into the bladder through which some foul fluid escaped. An iodoform drain was placed from the anterior cul-de-sac, through the space from which the bladder was removed, and into the vagina. The abdomen was closed in layers. The wound broke down and there was extensive sloughing of the fascia. Aside from this and the infection of the left kidney the patient had done well. The specimen exhibited showed that springing from the right side of the bladder, above the urethra, was a large growth, the size of a duck's egg, which in the section of the bladder had been so divided that a small portion of the growth was on one side and the larger portion on the other side of the specimen. The specimen had been mounted without removing a piece for microscopical examination, though there was no doubt but that it was carcinoma. No glands were felt in the pelvis at the time of operation.

Ectopic Gestation in an Anomalous Tube.—Dr. M. M. STARK reported this case which occurred in a patient, 27 years of age, who had been delivered of a child instrumentally two years previously. Her menses since that time had been regular and normal until April 13, when she began to bleed three weeks after her regular menstruation. On April 21 she had a very severe attack of pain in the epigastrium, but after being in bed a few hours she felt as well as ever. A mass was discovered the size of the specimen presented. Three days later she had sharp severe pain and went into collapse. The abdomen became much distended and the patient complained of rectal tenesmus. A diagnosis of ectopic gestation was made and an operation performed immediately. A diagram of the specimen was presented which showed the ectopic gestation in an anomalous tube.

The Relation of Athletics to the Reproductive Life of Women.—Dr. ANGANETTE PARRY read this paper. She stated that the literature on this subject was distinguished by its paucity of material, giving few statistics or even opinions. It was even difficult to define just what was meant by athletics. There were all degrees of athletics from the moderate careful training under a wise director to the violent stunts of overzealous young women. The writer had communicated personally or by letter with a considerable number of obstetricians, college physicians, directors of physical training in gymnasiums and universities, and with some athletes whose experience could be relied upon. The answers had varied greatly on important points but in the main they were frankly indefinite. The question of sterility had been studied statistically among college graduates and it seemed that it did not depend upon any particular physical training, but rather upon sociological and economic considerations. The change in the life of the people from the simple life about the home to the complex life of the cities and the indoor confinement made a study of the effects of athletics of great importance. One of the best known obstetricians had said that the great need of women to-day, especially of the upper classes, was muscular exercise. If women would not do normal manual labor athletics seemed to be the next best thing. In general the large majority of those consulted on this subject approved of moderate athletics. Even this was indefinite as with some it would include running and vaulting, while others would rigorously exclude them. A few had laid emphasis on the early systematic training in carefully graded educational work, and perhaps the majority objected to so-called violent work at any time. Some had expressed their appreciation of the value of a good foundation in early childhood, if upon it was to be built "that most complex and noble structure, a perfect womanhood." The Japanese began to train their girls at the age of four or five years in their jiu-jitsu and in Japan the women were not weaker than the men. They were carefully and systematically trained so that at puberty most of them did not find it necessary to make any break, but went steadily on without any apparent injury. If our little girls led the unconventional lives of their small brothers without any distinction as to sex until they reached the age of puberty they would arrive at the first great epoch in their reproductive lives well prepared for the change which was to take place. In preparatory and private schools athletic work, games, gymnastics, etc., should be supervised by an intelligent physical educator, each girl having been carefully examined by a physician conversant with the scope of athletics and the effects of specific forms of exercise. The student should have the advantage of a thorough grounding in the physiological facts essential to her highest physical development; she should be fully aware of the inevitable penalties to be paid for carelessness, recklessness, and exercise too violent or stimulating for her individual organization. She should understand clearly what she might and what she might not do during the menstrual period. While a rational amount of activity was most beneficial at

this period, and often invaluable as a therapeutic agent in dysmenorrheas and other pelvic disturbances, immoderate exercise could be safely indulged in only by the exceptional few. High nervous tension during the menstrual period should be avoided. Those who had expressed themselves on the point of intercollegiate games were unanimously inclined to believe that they should be discouraged because it was impossible to suit the time of the contests and preparatory training to the individual girl. The nervous strain in such contests was tremendous and used up more vital energy than most girls had to give. All seemed to agree that moderate athletic exercises between periods were beneficial for girls; some allowed moderate exercise to normal girls during periods as well as between, but believed that violent exercise during periods was dangerous to all women. A few approved of violent work at any time where the girls were in full training. In their anxiety to be always on the safe side they must not deprive the girls of their birthright—the right to enjoy and be benefited by all that sports and exercise could do for them. Often the negations of older people were the result of ignorance. In this athletic age they must face the responsibility of intelligently advising young women and old along athletic lines. Very often this would render drugs unnecessary by substituting far more natural and effective therapeutics. In regard to parturition, among forty answers the opinion was almost universal that the general condition of athletic patients was much better than that of others. As to displacements five out of twenty gynecologists believed that displacements could be caused by violent exercise, especially during the menstrual period. Several stated that the girl who started up pelvic trouble was the one out of training, with relaxed muscles, who suddenly went into rigorous competitive games or contests. One physical and medical director referred to athletic work begun early as prophylactic treatment and believed that existing displacements were lessened under suitable gymnastic work. Ten out of twelve observers were more or less enthusiastic as to the effects of physical training in relation to convalescence after labor. Several testified that these women were better able to nurse their babies. The two most reliable observers, however, reported that nursing was no better in the athletic women. One observer, indeed, wrote that women who did hard daily work were often unable to nurse their babies.

Dr. C. Ward Crampton, Director of Physical Training and Secretary of the Public School Athletic League, said that inasmuch as the Department of Education had to deal with 350,000 girls and young women it had studied the subject of athletics with much care. The physical and social differences between boys and girls were recognized to be of paramount importance in determining what exercises should be given to girls, and the endeavor to adapt boys' exercises to girls had been definitely abandoned. The strenuous athletic competition in which boys naturally indulged fitted them for the strenuous masculine life; the life of women was entirely different and therefore the physical activities in which girls would naturally indulge under normal circumstances were taken as a guide. It was early determined that folk dances fulfilled the conditions imposed by girlhood better than any other procedure. These provided vigorous exercise, happy recreation, and trained girls to be graceful as well. As these dances were mostly of the peasant type the movements were vigorous, involving the larger muscles of the body. The rhythmic jar involved was mild enough not to damage the various sustentacular abdominal ligaments, but just sufficient to strengthen them materially. These two results were of paramount importance. The carefully guarded life of the civilized woman weakened the natural abdominal supports. The wearing of corsets provided artificial support and relieved the anatomical structure of much of its responsibility. The results were weak abdominal ligaments and general ptosis, with their train of gynecological and toxic disturbances. Other games of similar appropriate nature had been introduced and the team element with emphasis on cooperation had been made prominent. Individual competition had been discarded as it was not deemed advisable for the girl to have the almost hysterical responsibility involved in running a hundred-yard dash for the purpose of winning a championship. He did not approve of the tremendous jar involved in the running broad jump. On the other hand they encouraged long walks into the country and trained their girls to swim well. He did not believe that violent or dangerous feats should be introduced into the public schools. It was more important to train their young women to be vigorous and somatically sound rather than to train them to do unusual and strenuous athletic feats.

Books Received.

The Medical Record *is pleased to receive all new publications which may be sent to it, and an acknowledgment will promptly be made of their receipt under this heading, but it must be with the distinct understanding that it is under no obligation to notice or review any publication received by it which in the judgment of its editor will not be of interest to its readers.*

Direct Laryngoscopy, Bronchoscopy, and Œsophagoscopy. By Dr. W. Brunings. Translated and edited by W. G Howarth, M.A., M.B., B.C., F.R.C.S. 370 pages; illustrated; cloth; price $5.00 net. William Wood & Company, Publishers, New York.

The Influence of Caffein on Mental and Motor Efficiency. By H. L. Hollingworth, Ph.D. 166 pages; paper; price $1.50. Archives of Psychology, Publishers, New York.

The Theory of Schizophrenic Negativism. By Prof. E. Bleuler. 36 pages; paper; price 60c. The Journal of Nervous and Mental Disease Publishing Company, Publishers, New York.

Resoconto Sommario Delle Sedute, VII Congresso Internazionale Contro la Tubercolosi. 45 pages; paper.

Seventh International Congress Against Tuberculosis. Section I, Social Defence; 93 pages; paper. Section II, Medical Pathology and Therapeutics; 109 pages; paper. Section II, Surgical Pathology and Therapeutics; 78 pages; paper. Section III, Etiology and Epidemiology; 58 pages; paper. Congress to be held in Rome 14th to the 20th of April, 1912.

An Index of Treatment by Various Writers. By Robert Hutchison, M.D., F.R.C.P., H. Stansfield Collier, F.R.C.S., and Warren Coleman, M.D. Sixth Edition, revised and enlarged, 1051 pages; illustrated; cloth; price $6.00 net. William Wood & Company, Publishers, New York.

Recent Advances in Hematology. By Walter K. Hunter, M.D., D.Sc. 111 pages, with a colored plate; cloth; price $2.25 net; William Wood & Company, Publishers, New York.

A Dictionary of Medical Diagnosis. By Henry Lawrence McKisack, M.D., M.R.C.P. Second Edition. 590 pages; illustrated; cloth; price $4.25 net. William Wood & Company, Publishers, New York.

Theorie und Praxis der inneren Medizin. By Dr. Erich Kindborg. Vol. II. 634 pages; illustrated; cloth; price 10 M. S. Karger, Publisher, Berlin.

Die Entstehung der Kurzsichtigkeit. By Georg Levinsohn. 88 pages; paper; price 2.50 M. S. Karger, Publisher, Berlin.

Die Tabes der Frauen. By Kurt Mendel and Ernst Tobias. 77 pages; paper; price 2.50 M. S. Karger, Publisher, Berlin.

Die Ulnaris-Lahmung. By Dr. Kurt Singer. 130 pages; illustrated; paper; price 4 M. S. Karger, Publisher, Berlin.

Cornell University Medical Bulletin. Vol. I, No. 3. Studies from the Department of Medicine, Including Therapeutics and Applied Pharmacology. Published by Cornell University, New York.

Der Gynäkologische Operationskursus. By Dr. Wilhelm Liepmann. 488 pages; illustrated; cloth; price 24 M. August Hirschwald, Publisher, Berlin.

Immunity. Methods of Diagnosis and Therapy and Their Practical Application. By Dr. Julius Citron. Translated by A. L. Garbat, M.D. 209 pages; 27 illustrations, 2 colored plates, and 8 charts; cloth; price $3.00 net. P. Blakiston's Son & Co., Publishers, Philadelphia.

Diagnose und Therapie der Magen- und Darmkrankheiten. By Dr. Walter Zweig. 502 pages; illustrated; price $4.00. Rebman Company, Publishers, New York.

Nervöse Angstzustände und ihre Behandlung. By Dr. Wilhelm Stekel. 448 pages; paper; price $4.25. Rebman Company, Publishers, New York.

Essai sur l'Anatomie et la Médecine Operatoire du tronc Coeliaque et de ses Branches de l'Artere Hepatique en Particulier. By Dr. P. de Rio-Branco. 828 pages; illustrated; paper. G. Steinheil, Publisher, Paris.

The Care of the Skin and Hair. By William Allen Pusey, A.M., M.D. 182 pages; cloth. D. Appleton & Co., Publishers, New York.

The Care of the Insane and Hospital Management. By Charles Whitney Page, M.D. 155 pages; cloth; price $1.00. W. M. Leonard, Publisher, Boston.

Taschenbuch der klinischen Hämatologie. By Dr. Von Domarus. 201 pages; illustrated; cloth; price 4 M. Georg Thieme, Publisher, Leipzig.

Medicolegal Notes.

Use of Word "Doctor" by Osteopath.—Colorado Rev. Stat., 1908, Section 6069, prohibits the practice of medicine without a license, but declares that the act shall not apply to "the practice of osteopathy when not prescribing medicine or administering drugs." In an action against an osteopathist for practising medicine without a license, the defendant's lawyer and the district attorney filed a stipulation of facts, the defendant admitting that he held himself out to the public as being engaged in the diagnosis and treatment of diseases and injuries of human beings; that he attached the title "Doctor" and the abbreviation "Dr." to his name. The district attorney admitted that the defendant was a graduate from a college of osteopathy, recognized as a reputable institution for teaching osteopathy, that he held a diploma from the college and a certificate from an osteopathic association; that he styled himself "Osteopathic Physician" and at no time had attached the word "Doctor" or "Dr." to his name except in connection with the words "Osteopath" or "Osteopathic Physician," and that he was engaged in the practice of osteopathy without prescribing medicine or administering drugs. It was held that he was not guilty of a violation of the act.—Jones v. People, Colorado Supreme Court, 120 Pac. 125.

Qualification as Expert Witness on Insanity.—In a murder case, where the defense was insanity, a physician called as an expert witness on the subject testified that he was a graduate of a medical school and had been a practicing physician since 1886, but that his experience in the treatment of persons mentally afflicted has been very limited, being covered by two or three cases, and that he had read some works upon diseases of the mind, but could not remember their names. It was held that he was not qualified to testify as an expert on insanity. Another physician, who had practiced medicine about 44 years, but was not a graduate of any school, held no diploma, had very little experience in treating insanity, had never prescribed for a real insane person, had read some books on insane diseases but did not consider himself as well posted on mental diseases as on general diseases, was also held not qualified to testify as an insanity expert.—Ashby v. State, Tennessee Supreme Court, 139 S. W. 872.

When Limitation Begins to Run Against Action for Negligence.—In deciding whether the statute of limitations of one year had run against an action for negligence in unskillfully resetting a broken arm, it appeared that the injury, which was a simple fracture of the radius of the forearm, at about the junction of the lower and middle third, was treated between August 24 and September 26, 1908, but not after the latter date, and the action was commenced on November 13, 1909. The acts of negligence having taken place before September 26, 1908, the mere fact that there was no discharge of the defendant on that date was immaterial. The statute of limitations began to run when the cause of action accrued, and that accrued when the negligent acts were committed, without reference to the time of discharge. The complaint was therefore ordered dismissed.—Lotten v. O'Brien, Wisconsin Supreme Court, 131 N. W. 361.

Liability of Corporation for Its Surgeon.—In an action against a railroad company for injury caused by the malpractice of its surgeon, it was held that the evidence must show either actual knowledge of the unfitness of the surgeon appointed or retained by it, or that his general reputation was so bad that the law will impute knowledge. It is not competent to show specific acts of unskillfulness not brought home to the company.—Atlantic Coast Line R. Co. v. Whitney, Florida Supreme Court, 56 So., 937.

Effect of Party's Refusal to Submit to Medical Examination.—In an action for injuries received in a street car accident the plaintiff had the advantage, on the trial, of the testimony of three physicians of her own selection, whom she allowed to examine her, not only when she was first injured, but at the time of the trial, but she never would permit any physician representing the defendant to examine her at all. When during the trial, the defendant's counsel moved the court to appoint experts for that purpose the plantiff's counsel objected, and the objection was sustained. On appeal it was said by the court, that whether or not that ruling was correct (which it did not find it necessary to decide), the expert testimony for the plaintiff stood upon much the same footing as would that of an expert accountant, named by one litigant, in a case in which the other litigant was denied all access to the account constituting the subject of the litigation.—Grant v. New Orleans Ry. & Light Co., Louisiana Supreme Court, 56 So., 807.

Medical Items.

Kinesitherapy in Mucomembranous Enteritis.—E. Lanel believes that mucomembranous enteritis is essentially a nervous disorder affecting the intestine through the solar plexus. There is a spasmodic condition of the intestine which produces constipation, and this alternates with apparent diarrheal movements in which the scyballæ are mixed with loose feces. Hyperexcitability of the sympathetic system is at the bottom of this condition. Another etiological factor is hereditary arthritism, which in the descendants causes vulnerability of the vascular and nervous systems. Mucomembranous enteritis is, then, a trophoneurosis, secretory and motor, caused by irritation of the sympathetic system. Spasm of the vessels and irregular nutrition of the intestinal walls, accompanied by lack of function of the intestinal glands and liver, cause prolonged digestion and putrefaction of the albuminoids and favors the growth of bacteria in the feces. Irritation causes increase of mucus, pain, and spasm, and one has presented the whole syndrome. In the treatment of this condition one should be guided by the degree of the disease at which the patient has arrived. In slight degrees the treatment consists of simple movements in which the patient's strength is not taxed; these take up the interest and attention; general massage and passive movements are also used. Circulation is improved, cellular nutrition increased, and the function of the glands and muscles is increased. The massage used locally over the abdomen should be very gentle and consist of stroking motions in the line of the colon. As the health grows better open-air sports should be gradually begun. When inflammatory symptoms are present the abdominal massage may be done over the hand of the operator with a vibrator, which has an anesthetic effect on the intestines. Kinesitherapy permits of many forms of graded movements, adaptable to the different conditions of the patient. It allows of active and passive movements, and such as call upon the use of the intelligence and will of the patient, and give a physical reeducation. Thus it is a complete method. —*Annali di Elettricita Medico e Terapia Fisica.*

Health Reports.—The following cases of and deaths from smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine Hospital Service, during the week ended July 19, 1912:

Places	Date	Cases	Yeaths
CHOLERA			
India: Bombay	June 2–8	21	21
Calcutta	Apr. 2–27	..	87
Received out of date			
Calcutta	May 5–25	..	116
Madras	June 2–8	1	1
Rangoon	Apr. 1–30	25	24
Straits Settlements	May 19–June 1	2	5
YELLOW FEVER			
Chile: Toco district	May 1–16	62	17
Tocopilla	May 1–16	237	85
Mexico: San Juan Bautista	July 14	3	..
Venezuela: Macuto	June 1	1	1
Maiquetia	June 17	1	1
PLAGUE			
China: Chifu	June 2–8	..	..
2 deaths on S.S. *Cheongshing* between Tientsin and Taku.			
Hongkong	May 19–June 8	672	542
Tientsin	June 2–8	1	1
From S.S. *Cheongshing* from Hongkong.			
Cuba: Habana	July 12	1	1
India: Bombay	June 2–8	33	26
Calcutta	Apr. 21–27	..	119
Calcutta	May 5–25	..	166
Karachi	June 2–8	11	9
Rangoon	Apr. 1–30	51	46
Japan: Formosa	Apr. 22–June 1	49	33
Java: Passoeroean Residency	May 26–June 1	11	9
Porto Rico; Dorado	July 15	1	1
San Juan	July 13	2	..
Straits Settlements; Singapore	May 19–June 1	3	3
West Indies; Trinidad	July 11	1	..
SMALLPOX			
China; Hongkong	May 19–June 8	7	5
Tientsin	June 2–8	..	1
France: Nantes	June 17-23	1	..
Paris	June 16-22	1	..
India: Bombay	June 2–8	31	23
Calcutta	Apr. 21-27	..	2
Calcutta	May 5–25	..	8
Rangoon	Apr. 1–30	154	57
Japan; Kobe	June 3–16	2	..
Java: Batavia	May 26–June 1	6	1
Mevico; Durango	June 1–30	1	1
San Luis Potosi	Apr. 14–20	1	1
Portugal; Lisbon	June 16–22	3	..
Russia: Moscow	May 19–June 8	12	2
Odessa	June 16–22	3	..
Riga	June 9–22	7	..
St. Petersburg	June 9–15	13	1
Siberia; Vladivostock	May 17–23	1	
South Africa; Durban	May 26–31	2	1
Spain; Cadiz	May 1–31	..	2
Valencia	June 16–22	19	1
Straits Settlements ; Singapore	May 26–June 1	..	1
Turkey in Asia: Beirut	June 16–22	5	..
Turkey in Europe; Constantinople	June 17–23	..	8

Medical Record

A Weekly Journal of Medicine and Surgery

Vol. 82, No. 5.
Whole No. 2178.

NEW YORK, AUGUST 3, 1912.

$5.00 Per Annum.
Single Copies, 15c.

Original Articles.

THE EFFECT OF SPECIFIC TREATMENT ON THE CEREBROSPINAL FLUID.*

By W. F. LORENZ, M.D.

MENDOTA, WIS.

The parasyphilitic affections of the central nervous system are invariably accompanied by pathological cerebrospinal fluids. This pathology comprises an increase of the globulin constituent, a lymphocytosis, and less frequently a positive Wassermann reaction. The purpose of this investigation was to ascertain the changes brought about in these three factors after the case had been subjected to an antisyphilitic treatment.

Conflicting reports also have appeared in the literature. Javorski[1] found an alteration in the fluid of paretics following mercurial treatment. He reported a reduction in the number of lymphocytes and likewise in the amount of globulin. Milan and Levy Valense[2] noted a rapid fall in the number of lymphocytes following the use of "606" in cases of tabes and general paralysis. In Brown's[3] report on the use of "606," he speaks of the reduction in the number of lymphocytes though the amount of globulin remained unchanged. Upon the other hand, Ducastel and Paraf[4] found no suppression of lymphocytes in the fluid of paretics as the result of treatment, nor was there a reduction in the case of tabes treated with mercury and three injections of "606" reported by Dufour.[5] Kleinberger[6] found little change in the spinal fluid of paretics or tabetics treated with mercury and potassium iodide. In some of his cases of paresis thus treated the lymphocytes were more abundant following the treatment.

For this investigation I selected nine cases of general paralysis, representing all stages of the disease, and three cases of Huntington's chorea. The treatment employed was the Ehrlich-Hata preparation and sodium cacodylate. To more fairly compare the results of these two arsenical preparations I had to use each in a similar manner. The intravenous method was thought to be the most desirable for the "606," and consequently I had to experiment with sodium cacodylate in order to administer this by the same route.

My report upon the intravenous use of sodium cacodylate is incidental to this paper, and I hope to make a more complete report at some future time. Very little has appeared upon the use of this drug in this manner. L. Anelli[7] gave 0.05 gm. in 1 c.c. of water directly into the vein. Mendel[8] commented upon this mode of administration as being superior to any other. He used one to three c.c. of a 5 per cent. aqueous solution.

*Read at the meeting of the West Side Branch of the Chicago Medical Society, held April 17, 18, and 19, 1912, at Chicago.

The dosage, method, intervals between administration as well as results have been variously reported upon. Dawes and Jackson[9] used sodium cacodylate hypodermically in doses of 0.2 to 0.3 gm. They reported very favorable results in the anemias, neurites, eczemas, neuralgias, and chronic rheumatism. In syphilis Dawes suggests a massive dose of 0.6 gm., and Murphy[10] used it in doses of 0.17 to 0.3 hypodermically in early syphilis with good results. Caffrey[11] reported favorably upon its use in early syphilis. He gave 0.07 gm. deep into the muscle for eight days, doubling this amount, and finaly gave 0.2 gm. Schirrman[12] employed it in gumma of the brain with very favorable results. He gave 0.2 gm. hypodermically. Sugget[13] reported favorably upon its use in early secondary syphilis, hemiplegia, and in congenital syphilis. His method was the intramuscular injection of 0.05 to 0.2 gm. Spivak[14] concluded that it was a valuable adjunct in the treatment of syphilis, the best results being obtained in early cases. He gave it subcutaneously in doses of approximately 0.3 gm. The authors quoted used this preparation in daily administrations. Cragler[15] gave the drug at intervals of two weeks. He used it in tertiary syphilis in doses of 0.05 to 0.1 gm., with favorable results. Cuthbertson[16] reported favorably upon its use in erythema. His method was 0.05 gm. hypodermically every three days. In a recent communication Herzfeld[17] draws attention to his use of sodium arsenite subcutaneously in two cases of syphilis with favorable results.

Those reporting unfavorably upon its use in syphilis are Long[17] and Nichols.[18] The latter showed very definitely that this preparation had no effect upon the spirocheta when used experimentally in rabbits, and could not be substituted for "606."

I began the intravenous use of sodium cacodylate in very small doses. The first four cases received each 0.02 gm. dissolved in 50 c.c. of normal saline. No untoward symptoms were manifested and I rapidly increased the dose until 0.4 gm. dissolved in 100 c.c. of normal saline was given. This was borne without apparent ill effects, although now I first noticed the characteristic odor to the breath. This increase from 0.02 gm. to 0.4 gm. was made in three weeks. In each case four intravenous injections were made. I now attempted to ascertain how long this drug remained in the circulation and whether or not it appeared in the spinal fluid. For this purpose six cases of dementia præcox, showing a mild anemia, though otherwise physically healthy, were given 0.4 gm. of sodium cacodylate by the intravenous method. The first case, "A," was punctured for spinal fluid and for blood twenty-four hours after the administration, the second case, "B," forty-eight hours, and the third case, "C," seventy-two hours. The blood serum, clotted blood and spinal fluid were tested for the presence of arsenic. The Marsh test was employed and was

made by Mr. E. J. Tully of the State Hygienic Laboratory, Madison, Wis. The reports returned were all negative. I then gave cases "E," "D," and "F" 0.8 gm. of sodium cacodylate intravenously and secured specimens of spinal fluid and blood, three, six, and twelve hours after the administration. The urine of this last series of cases was taken by catheter one-half hour after the administration of the drug and subsequently a specimen obtained when the urine was voluntarily voided. The blood serum and spinal fluid were again reported negative. I then took a case ("G"), gave 1 gm. of sodium cacodylate intravenously and punctured for spinal fluid and for blood one hour after administration, again saving the urine for similar tests. This time both the spinal fluid and blood serum showed a trace of arsenic.

TABLE I.—RESULTS OF TESTS FOR ARSENIC IN SPINAL FLUID, BLOOD AND URINE—DRUG USED—MAXIMUM LAST DOSE—METHOD—TIME SPECIMEN WAS TAKEN AFTER DRUG ADMINISTRATION

Case	Drug and Method	Specimen Tested	Time After Administration When Specimen Was Taken	Result
"G"	Sod. Cacod. 1.0 Gm. Intra-ven.	C-S. Fluid	1 Hour	T.
		Blood	1 Hour	T.
		Urine	1 Hour	P.
"E"	Sod. Cacod. 0.8 Gm. Intra-ven	C-S. Fluid	3 Hours	N.
		Blood	3 Hours	N.
		Urine	½ Hour	P.
		Urine	2 Hours	P.
		Urine	6 Hours	P.
		Urine	22 Hours	N
"D"	Sod. Cacod 0.8 Gm. Intra-ven	C-S. Fluid	6 Hours	N.
		Blood	6 Hours	N
		Urine	½ Hour	T.
		Urine	8½ Hours	P.
		Urine	22 Hours	N
"F"	Sod. Cacod. 0.8 Gm Intra-ven.	C-S. Fluid	12 Hours	N.
		Blood	12 Hours	N.
		Urine	½ Hour	T.
		Urine	6 Hours	P.
		Urine	24 Hours	S.T.
"A"	Sod. Cacod 0.4 Gm. Intra-ven.	C-S. Fluid	24 Hours	N.
		Blood	24 Hours	N
"B"	Sod. Cacod 0.4 Gm. Intra-ven.	C-S. Fluid	2 Days	N.
		Blood	2 Days	N.
"C"	Sod. Cacod. 0.4 Gm. Intra-ven.	C-S. Fluid	3 Days	N.
		Blood	3 Days	N.
"I"	Sod. Cacod. 1.0 Gm. Intra-mus.	C-S. Fluid	4 Days	N.
		Blood	4 Days	N.
XI.	Sod. Cacod. 1.0 Gm. Intra-mus.	Blood	4 Days	N.
VI.	Sod Cacod. 1.0 Gm. Intra-ven	Blood	6 Days	N.
VII.	Sod. Cacod. 0.8 Gm Intra-ven.	C-S Fluid	6 Days	N.
IX.	Sod. Cacod. 1.2 Gm. Intra-ven.	Blood	6 Days	N.
XIII.	"606" 0.6 Gm. Intra-ven.	Blood	3 Hours	N.
		Blood	24 Hours	N.
		Blood	48 Hours	N.
		Urine	2½ Hours	P.
		Urine	13 Hours	T.
		Urine	27 Hours	T.
		Urine	38 Hours	T.
		Urine	57 Hours	S.T.
II.	"606" 0.5 Gm. Intra-ven	C-S. Fluid	21 Days	S.T.
		Blood	21 Days	N.
IV.	"606" 0.5 Gm. Intra-ven.	C-S. Fluid	21 Days	N.
		Blood	21 Days	N.
V.	"606" 0.5 Gm. Intra-ven	C-S. Fluid	21 Days	N.
		Blood	21 Days	N.

Abbreviations P.—Present. T.—Trace. S.T.—Slight Trace. N.—Negative C-S. Fluid.—Cerebrospinal fluid. Sod. Cacod.—Sodium Cacodylate.

In all fifty tests for arsenic were made. This includes the cases that were given "606." The amount of material used in each instance for the arsenic test was approximately four c.c. of spinal fluid, fifteen to twenty c.c. of blood, and thirty c.c. of urine. The clotted blood gave the same results as the blood serum so that in the accompanying table "blood" refers to either clotted blood or blood serum.

Table I shows the results of the Marsh test for arsenic in the cerebrospinal fluid, blood, and urine of cases treated with sodium cacodylate and with "606"; the dose, method of administration, and time after administration when the specimen was taken.

If detectable arsenic by the Marsh test can be taken as an indication of the presence of sodium cacodylate or "606" in the cerebrospinal fluid and the blood, one must conclude from the results of these examinations that sodium cacodylate is present one hour after administration, and disappears within three hours. Under the same conditions "606" seems to disappear from the blood within three hours, and excepting Case II, in which a slight trace of arsenic was found in the spinal fluid after twenty-one days, no other serum or spinal fluid gave any indication of its presence. The case reported by Dr. Balzer[20] is likewise an exception to these findings. This was a case of death while under treatment with salvarsan in which the spinal fluid showed the presence of arsenic seven days after the injection of 0.3 gm. of the drug.

The urine shows arsenic in fair amounts within one-half hour after the administration of sodium cacodylate, and in the case of "606" arsenic was found in the voluntarily voided specimen two and three-quarter hours after administration. The arsenic continues present in the cases injected with sodium cacodylate, approximately twenty-eight hours, gradually becoming less marked. In the cases given "606," arsenic continued present in the urine until the fifty-seventh hour, when very slight traces only were obtained.

I would conclude from these findings that sodium cacodylate is very rapidly eliminated and likewise "606," and that both drugs disappear from the circulation within a few hours after administration. The rapidity with which sodium cacodylate is excreted was shown in several cases. Before the intravenous injection was completed, this usually requiring fifteen minutes, in several instances the characteristic odor was detected on the breath. It follows that the daily method of administration, at least in the use of sodium cacodylate, would be indicated, furthermore the safe dose of sodium cacodylate is much larger than that usually given. Two of the cases in this series received 1 gm. intravenously at one dose and another 1.2 gm. in the same manner yet none showed ill effects. Two of the cases received 1 gm. deep into the muscle. This injection was without pain or discomfort. I consider it to be absolutely safe. This experimental work with sodium cacodylate was coincidental to the original investigation and I could not take advantage of the results in the series in which the spinal fluid was to be examined.

The dosage and methods of administration of sodium cacodylate in the cases where spinal fluid examinations were made are as follows: Case I and XI were given deep muscular injections. The first dose was 0.2 gm.; three days later 0.4 gm.; two weeks later 0.6 gm., and eight days following 1 gm. This last dose of 1 gm. was re-

peated the week following; in all 3.2 gm. were given. Cases VI, VII, VIII, IX, XII, XIV, and XV received the drug by the intravenous method. The first dose was 0.02 gm. This was increased, and at the fourth injection Cases XII, XIV, and XV received 0.4 gm., while Cases VI, VII, and VIII received 0.8 gm. Case IX was given 1.2 gm. The solution was prepared by first dissolving 4 gm. of sodium cacodylate in 10 c.c. of distilled water. This solution was brought to the boiling point. The final dilution used for the intravenous injection was in the proportion of 10 mg. to 1 c.c. of freshly prepared normal saline—thus 100 c.c. equaled 1 gm. of the drug.

The intravenous administrations were borne without apparent ill effect and I believe that 1 gm. can be given in this manner with perfect safety. In fact two cases, VII and VIII, in which the drug was used in doses of 0.8 gm., have well defined focal lesions with left hemiplegia. Case VIII, which will again be referred to, is especially interesting.

Four of the original series in whom the cerebrospinal fluid was to be examined received "606." In one case (IV), owing to faulty technique, the first intravenous injection was not successful and he received only 0.1 gm. The remaining three cases received 0.3 gm. Four weeks later three of the original four received 0.5 gm. The first administration was followed within one-half hour by severe vomiting and diarrhea, temperature rose to 104° and 106° and a flush very much resembling scarlet fever appeared. The temperature fell to normal within twelve hours, the flush gradually disappeared, and the vomiting ceased after three hours. Three days after this reaction a pustular eruption appeared upon the lips, which gradually disappeared at the end of a week. This intense reaction was due without doubt to the distilled water not being fresh. The second administration in which 0.5 gm. was given was not followed by any of these symptoms. This time I was careful to use water that was distilled the same day the injection was made.

Sicard and Bloch[21] have claimed that changes in spinal lymphocytosis occur without treatment. My own experience has been that early in paresis the lymphocytosis as well as globulin content is high and that late in its course both of these factors are somewhat less involved. In order to satisfy myself upon this point in the series under examination, I made a second puncture at intervals of three to thirteen months after the initial puncture. During these intervals no antisyphilitic treatment was given, and any change in lymphocytosis or globulin content could be ascribed to the progress of the disease process uninfluenced by treatment. Excepting Case VIII the results obtained at the first puncture do not vary greatly from those obtained at the second.

TABLE II.—RESULTS OF SPINAL FLUID EXAMINATIONS BEFORE AND AFTER TREATMENT, SHOWING CELL COUNT, GLOBULIN CONTENT, AS ESTIMATED BY THE NOGUCHI BUTYRIC ACID TEST AND THE AMMONIUM SULPHATE TEST—DRUG USED—INTERVALS BETWEEN PUNCTURES

Case	First Puncture Cells per Cu. Mm. Globulin Content	Interval of Non-treatment	Second Puncture Cells per Cu. Mm. Globulin Content	Drug Used	Interval of Treatment	Third Puncture Cells per Cu. Mm. Globulin Content	Approximate Stage of Disease
I.	13 Nog. P. Am. Sul. P.	7 Mo.	14 Nog. P. Am. Sul. P.	Sod. Cacod.	2 Mo.	2 Nog. N. Am. Sul. N.	Early
II.	66 Nog. P. Am. Sul. P.	3 Mo.	76 Nog. P. Am. Sul. P.	"606"	2 Mo.	13 Nog. P. Am. Sul. P.	Early
IV.	25 Nog. P. Am. Sul. P.	11 Mo.	30 Nog. P. Am. Sul. P.	"606"	2 Mo.	23 Nog. P. Am. Sul. P.	Well advanced
V.	34 Nog. P. Am. Sul. P.	3 Mo.	30 Nog. P. Am. Sul. P.	"606"	2 Mo.	4 Nog. N. Am. Sul. P.	Early
VI.	60 Nog. P. Am. Sul. P.	15 Mo.	57 Nog. P. Am. Sul. P.	Sod. Cacod.	2 Mo.	133 Nog. P. Am. Sul. P.	Late, 4 Years' Duration
VII.	33 Nog. P. Am. Sul. P.	7 Mo.	27 Nog. P. Am. Sul. P.	Sod. Cacod.	2 Mo.	15 Nog. N. Am. Sul. N.	Early Left Hemiplegia
VIII	73 Nog. P. Am. Sul. P.	7 Mo.	120 Nog. P. Am. Sul. P.	"606" Sod. Cacod.	2 Mo.	29 Nog. P. Am. Sul. P.	Early Left Hemiplegia
IX.	52 Nog. P. Am. Sul. P.	5 Mo.	43 Nog. P. Am. Sul. P.	Sod. Cacod.	2 Mo.	30 Nog. P. Am. Sul. P.	Well Advanced
XI.	40 Nog. P. Am. Sul. P.		Second Puncture Not Made	Sod. Cacod.	2 Mo.	33 Nog. P. Am. Sul. P.	Well Advanced
XII.	4 Nog. N. Am. Sul. P.		Second Puncture Not Made	Sod. Cacod.	17 Mo.	2 Nog. N. Am. Sul. N.	Huntington's Chorea
XIV.	1 Nog. N. Am. Sul. N.		Second Puncture Not Made	Sod. Cacod.	2 Mo.	1 Nog. N. Am. Sul. N.	Huntington's Chorea
XV.	1 Nog. N. Am. Sul. P.		Second Puncture Not Made	Sod. Cacod.	15 Mo.	1 Nog. N. Am. Sul. N.	Huntington's Chorea

Abbreviations: Nog.—Noguchi Butyric Acid Test. Am. Sul.—Ammonium Sulphate Contact Test. P.—Positive. N.—Negative. Sod. Cacod.—Sodium Cacodylate.

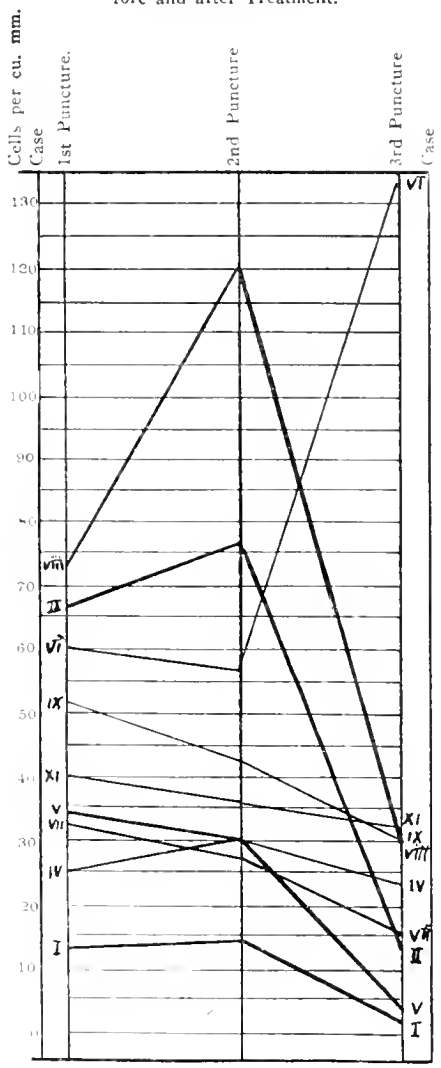
Table II shows the results of the spinal fluid examination at the time of the first puncture, after a specified interval the examination of the fluid obtained at the second, the drug used in each case

previous to the third puncture, and the interval elapsing between the second and third puncture.

The lymphocytosis was estimated by the cell chamber method. The same technique was followed throughout the investigation. As a rule three cu. mm. of fluid were counted and an average taken. The most marked changes occurred in Cases I, II, V, VI, and VIII. Two cases, I and V, showed fluids that from the cytological and chemical examination could be called normal. In Cases II, VII, and VIII, the reduction in the number of cells was very marked. In Cases IV, IX, and XI, the change was less, in fact no greater than may occur during the interval of non-treatment. Case VI showed a marked increase in the number of lymphocytes. This case is one of paresis of over four years' duration. The general trend of the change in the amount of lymphocytes of the spinal fluid following treatment is well shown in Table III.

TABLE III.

Graphic Chart of changes in Lymphocytosis of the Spinal Fluid before and after Treatment.



The globulin content of the fluid was examined for by the Noguchi butyric acid test and the contact test with saturated ammonium sulphate. In the use of the butyric acid test it frequently occurs that the precipitate is unusually heavy and very prompt in its appearance: in other cases the flocculi are fine and the precipitate after settling is considerably less in amount. It has also been observed that the time for the appearance of the characteristic precipitate is in some cases several minutes while in others it appears in less than half a minute. An effort was made to note these types of reaction and it was observed that in several cases the reaction was slower in its appearance and the precipitate was less in amount after treatment. If time of appearance and amount of precipitate can be taken as an index of the relative amount ot globulin, it follows that in several cases the pathological increase of globulin as shown by the Noguchi test is materially reduced after treatment. Furthermore this reduction is accompanied by a reduction in the lymphocytosis.

Case I shows a positive reaction to both tests upon two occasions previous to treatment and was negative following the use of sodium cacodylate. Case V changed from positive to negative after the use of "606." The same change was observed in Case VII. In these three cases the most marked reduction in lymphocytosis took place. Cases II, IV, and VIII showed a change in the reaction with the Noguchi test after the medication. While the reaction was positive yet it was slower in its appearance and the precipitate was considerably less in amount. Cases VI, IX, and XI, all well advanced in the disease, showed no change in the character of the reaction with the Noguchi reagents. In two of these (Cases IX and XI) the reduction in the number of lymphocytes was relatively slight, while Case VI showed a marked increase of cells.

At this point special reference must be made to Case VIII of this series. A marked increase of cells occurring during an interval of non-treatment seems to have a special significance in view of the subsequent course of this case. Two days following the intravenous injection of "606" this case developed a complete and well marked hemiplegia. This hemiplegia gradually disappeared although considerable muscular weakness persisted. The case was then given sodium cacodylate also by the intravenous route. The examination of the fluid obtained at the third puncture showed a great reduction in the number of cells and the Noguchi test was slower in its appearance with considerably less precipitate. I am inclined to look upon the sudden rise of lymphocytosis as a premonitory sign of a focal lesion and in this instance would not ascribe the hemiplegia to the actions of "606."

The Wassermann tests reported in this series were made by Dr. W. T. Mefford. He employs the following signs to indicate the degree of reaction: "+" indicates a faint reaction, "++" a weak reaction, "+++" a positive reaction, "++++" a strongly positive reaction.

Specimens of cerebrospinal fluid and blood were examined for the reaction to the Wassermann test before and after treatment. In most of the cases two examinations with the blood serum were made after treatment. With the spinal fluid but one was made following treatment. The results of these examinations are shown in Table IV.

An extremely interesting finding was the positive reaction with the blood serum and spinal fluid of the cases of Huntington's chorea. To my knowledge but one case of Huntington's chorea had been reported upon in this regard. In the series of examinations made by Rosanoff and Wiseman,[22] they included one case of this disease. Their findings were negative. The cases examined in this series showed a positive Wassermann with the blood serum of all three before treatment and with the spinal fluid of one. In two of these cases, XIV

TABLE IV.—RESULTS OF WASSERMANN TESTS MADE WITH THE SPINAL FLUID AND BLOOD SERUM BEFORE AND AFTER TREATMENT—DRUG USED—TIME AFTER ADMINISTRATION THE TEST WAS MADE.

Case	Spinal Fluid	Blood Serum	Drug Used	Days After Treatment	Blood Serum	Days After Treatment	Blood Serum	Spinal Fluid
I.	P. + +	P. + +	Sod. Cacod.	18 Days	N.	4 Days	N.	N.
II.	P. + +	N.	"606"	19 Days	P. + +	21 Days	P. + +	N.
IV.	P. + +	P. + + + +	"606"	20 Days	P. + + + +	21 Days	P. + + + +	P. + +
V.	N.	N.	"606"	20 Days	N.	21 Days	N.	N.
VI.	N.	N.	Sod. Cacod.	18 Days	N.	7 Days	N.	N.
VII.	.....	P. + +	Sod. Cacod.	18 Days	P. + +	7 Days	P. + +	P. + +
VIII.	P. + + + +	P. + + + +	"606" Sod. Cacod.	20 Days	P. + + + +	7 Days	P. + + + +	P. + + + +
IX.	P. + +	P. + +	Sod. Cacod.	.....	.....	7 Days	P. + +	P. + +
XI.	P. + +	P. + + +	Sod. Cacod.	18 Days	P. + + +	4 Days	P. + + +	N.
XII.	P. + +	P. + +	Sod. Cacod.	.....	.....	7 Days	N.	N.
XIII.	.....	P. + +	"606"	.....	.....	.....	.....	.....
XIV.	.....	P. + +	Sod. Cacod.	.....	.....	7 Days	N.	N.
XV.	.....	P. + +	Sod. Cacod.	.....	.....	7 Days	P. + +	P. + +

Abbreviations: P.—Positive. N.—Negative.

and XV, the Wassermann test was not made with the spinal fluid before treatment; in fact at the time these cases were selected it was not thought that a positive Wassermann was to be entertained in Huntington's chorea. In all three of these cases both acquired and inherited syphilis can be ruled out with a fair degree of certainty and it seems as though this disease must be included with the few other non-syphilitic ailments that occasionally give positive Wassermann reactions.

The change from positive to negative in both spinal fluid and blood serum following treatment occurred in Case I. This case it will be recalled received sodium cacodylate. In Case II the blood serum became positive after the first injection of "606." The final examination with the spinal fluid gave a negative finding while the blood serum continued faintly positive. No change took place in Cases IV, VII, VIII and IX. In Cases V and VI the reaction was negative at all times. In Case XI the spinal fluid was negative following the use of sodium cacodylate. Cases XII and XIV (Huntington's chorea) gave a negative reaction in both the spinal fluid and blood serum seven days after the use of sodium cacodylate, while Case XV (Huntington's chorea) showed no change in the reaction although this case received the same medication in the same manner and same dosage.

The number of cases examined is small and I realize the danger of generalizing from these few cases. The variability of reaction occasionally encountered during the course of parasyphilitic diseases when no treatment has been used must be considered. Upon the other hand the failure of effect of treatment upon the Wassermann reaction has also been frequently mentioned. In short no conclusions will be attempted from the changes that occurred in the Wassermann reaction in this series following treatment.

In briefly reviewing the results of this investigation the conclusion is forced that marked changes occur in the spinal fluid, presumably as the result of treatment. These changes tend toward a reduction in the number of lymphocytes and in the amount of globulin. When paresis is approached from either its histopathological aspect or its general clinical course, these findings should not be surprising. In the first instance the cortical changes accompanying paresis indicate in part a fairly active process while clinically the disease is steadily progressive, and argues the probability of the presence of an active toxin. This in conjunction with about seventy per cent. of positive Wassermann reactions, the latter being claimed by many to mean the presence of spirocheta, favors the contention that paresis and therefore tabes should receive active energetic treatment. It is not thought that degenerated nerves can be made to functionate nor that highly specialized tissue will be replaced by similar kind, yet if the parasyphilitic diseases can be halted early in their course much will have been accomplished.

This investigation is not complete. The cases that showed improvement must again be examined after considerable time has elapsed in order to exclude remissions that are occasionally encountered during the course of the parasyphilitic diseases, yet this significant fact remains—definite changes occur in the pathology of the spinal fluid following treatment. The question as to whether these changes in the spinal fluid indicate a halting in the progress of the disease cannot as yet be answered.

The conclusions resulting from this investigation are as follows:

1. The lymphocytes of the cerebrospinal fluid is reduced following the use of either sodium cacodylate or "606" in early cases of paresis.

2. The excess of globulin in the spinal fluid as shown by the Noguchi butyric acid test is less marked following the use of sodium cacodylate or "606."

3. The lymphocytosis and the globulin content of the spinal fluid tend to parallel one another in this reduction.

4. Sodium cacodylate and "606" disappear from the blood within three hours after administration.

5. Arsenic is present in the spinal fluid and the blood serum one hour after the administration of sodium cacodylate.

6. Following the administration of sodium cacodylate or "606" the urine very soon shows the presence of arsenic, and sodium cacodylate is probably entirely excreted within two days.

7. One gram of sodium cacodylate is a safe dose both by the intramuscular or the intravenous route.

8. Three cases of Huntington's chorea gave a positive Wassermann reaction with the blood serum and two with the spinal fluid.

I wish to acknowledge my indebtedness to Dr. M. P. Ravenel, Director of the State Hygienic Laboratory, Madison, Wis., for the help rendered, to Dr. W. T. Mefford of Chicago for the Wassermann tests, and to Dr. Charles Gorst, Superintendent of the Wisconsin State Hospital, and my colleagues, Dr. M. K. Green and Dr. A. Sauthoff, for their kind cooperation.

REFERENCES.

1. Javorski: Abstr., *Rev. of Neurol. and Psych.*, vol. ix, No. 3.
2. Milian and Levy Valense: Abstr., *Rev. of Neurol. and Psych.* vol. ix, No. 9.
3. Brown, R. Dods: *Rev. of Neurol. and Psych.*, vol. ix, No. 11.
4. Ducastel-Paraf: Abstr., *Rev. of Neurol. and Psych.*, vol. ix, No. 5.
5. Dufour, H.: Abstr., *Rev. of Neurol. and Psych.*, vol. ix, No. 9.
6. Kleinberger: *Archiv für Psychiat.*, Bd. 48, H. 1, 1911, 5264: Abstr., *Rev. of Neurol. and Psych.*, vol. ix, No. 8.
7. Anelli, L.: *Merck's Archives*, March, 1912.
8. Mendel: *Merck's Archives*, March, 1912.
9. Dawes, S. L.; Jackson, Holmes C.: MEDICAL RECORD, July 15, 1911.
10. Murphy, John D.: *Journ. A. M. A.*, Sept. 24, 1910.
11. Caffrey, A. J.: *Journ. A. M. A.*, Dec. 24, 1910.
12. Schirrman, Harry A.: *N. Y. Med. Journ.*, April 8, 1911.
13. Sugget, O. L.: *N. Y. Med. Journ.*, April 8, 1911.
14. Spivak, L. J.: *N. Y. Med. Journ.*, March 2, 1912.
15. Cregler, L. W.: *Journ. A. M. A.*, March 25, 1911.
16. Cuthbertson, William: *Journ. A. M. A.*, Jan. 6, 1912
17. Hertzfeld, A. J.: *Journ. A. M. A.*, Feb. 25, 1911.
18. Long, J. H.: *Journ A. M. A.*, July, 1911.
19. Nichols, Henry J.: *Journ. A. M. A.*, Feb. 18, 1911.
20. Balzar: *Journ. A. M. A.*, March 16, 1912, Paris Letter.
21. Sicard, J. A. & Bloch, M.: Abstr., *Rev. Neurol. and Psych.*, vol. ix, No. 9, p. 516.
22. Rosanoff and Wiseman: State Hosp. Bull., N. Y., vol. 11, No. 4.

EXAMINATIONS OF THE EYES OF COLLEGE STUDENTS.

By M. DRESBACH, M.D.,

ITHACA, N. Y.

FROM THE DEPARTMENT OF PHYSICAL CULTURE, CORNELL UNIVERSITY.

It has become an almost universal practice in the colleges and universities of this country to require a physical examination of entering students, and many institutions require a prescribed course in physical culture extending over one or more years. In making such requirements the schools assume the function of guarding the health of the young men and women during a part or the whole of their study years. In this respect our educational system is unique; but, as might be supposed, the attitude taken towards this subject is by no means the same in all institutions. This fact is shown by the varying extent to which emphasis is laid upon athletic sports at different schools, and by the extremes in the methods employed in examining the students for physical defects. An inquiry into these methods shows that they range from superficial inspections, by untrained persons in charge, to rigid tests and thorough examinations by specialists with a medical training. Until very recently but little careful attention has been given to ocular defects (and still less heed has been paid to ear, nose, throat, and kidney conditions), it having been deemed sufficient to know whether or not the student was sound in heart and lungs, or whether or not he met certain so-called standard tests of measurement and strength. In other words, the physical examinations have often been far from complete, some very important organs having been omitted. It is one of these neglected organs that I wish to consider in this paper, which is based upon facts revealed by the examination of the eyes of a large and representative body of students.

The problem of how to inspect a large body of entering students in the shortest time compatible with efficiency is a difficult one. For the good of the students it is desirable that they should have the complete examination as soon after entrance as possible, preferably within three months after enrollment. Where a thousand or more individuals must be examined, it means, of course, that either a few examiners will work many hours a day for several weeks or months, or that a larger examining force must be secured to complete the work within the desired length of time. At this institution it has been necessary during the past two years to examine from 1400 to 1600 men students and from 200 to 300 women students on entrance. This work has been done by two examiners for the men and one for the women, but during the present year a third physician has been secured for the men in order that certain features of the work might be extended and improved.

The object of the examination.—While my principal duty was to make the eye, ear, nose, and throat examinations, the general object of the entire physical inspection, as conducted at this institution, may be stated as follows: (1) To detect those students who have physical defects or states of health of such a nature that immediate medical attention is advisable, as, for example, in the case of those with cardiac and pulmonary lesions, ocular troubles, infectious diseases, etc. (2) To pick out those with minor defects and faulty development, in order that corrective exercises may be begun. (3) To determine the fitness of candidates for special athletics to go into contests, and to advise such candidates about their physical condition from time to time. (4) To tabulate vital statistics which may be of value.

Objects, methods, and limitation of the examinations for visual defects.—As stated above, it is desirable to have these examinations made as soon as possible after the student enters college, in order that he may have the benefit of the information obtained. The practice here is to require the student to report at once to the physical director after registration in order to make an appointment for the complete physical examination. In this inspection approximately one-half the time is devoted to the eye, ear, nose, and throat tests. The eye-tests have included the following steps, each eye being taken separately: (1) Inspection for external signs of inflammation or other evidence of disease. (2) Determination of visual acuity by means of test letters. (3) Examination for refractive errors, myopia, hyperopia, and astigmatism. (4) Examination for muscular imbalance. (5) Testing of the power of accommodation. (6) Elicitation of symptoms of eyestrain.

In steps 3, 4, 5, and 6, we made use of the trial lenses,* and took into account errors of 0.25 D. or more. Heterophoria of less than 5 degrees was not recorded. By means of well directed questions the history of each student was obtained and noted, and if there were objective or subjective signs of eyestrain; if glasses worn were poorly adjusted or without correction for astigmatism; if the last examination had been made without a cycloplegic or

*The trial frame used was devised by Dr. George M. Gould. It is accurate and permits one to work rapidly.

"drops," or if it had been made more than two years before the student registered for examination at this institution; if lenses worn had been ordered by some optician, optometrist, or "eyesight specialist;" in short, if any suspicion arose that examination by a competent physicain was advisable, the student was so informed. He was also requested to report later as to what he had done about the matter.

In carrying on these tests there have been certain limitations which should be mentioned. First, no cycloplegic was used (as is done at the University of Pennsylvania). While this restriction made it impossible to diagnose accurately the nature, amount, etc., of the refractive error in some cases, it was always possible to decide whether or not a more thorough examination was needed. All cases of doubtful diagnosis were appropriately marked and most of such students were sent to an oculist at once. These cases are included among the "unclassified" in the table below. Secondly, there was the time-limit. The average time given to each student was from 10 to 15 minutes. In some instances this was increased and in particular cases a special appointment was made for more extended testing. Thirdly, the ophthalmoscope was not often used. However, all cases in which inspection of the fundus was indicated were sent to the oculist. In spite of these limitations, the results have been very encouraging and have shown that it is possible for one or two men to examine rapidly a large number of students with a degree of success that justifies the time, labor, and expense devoted to the work.

In the tables below are collected certain data which have been accumulated during the past three years. Many points of clinical and scientific interest have been observed but they could not be brought within the scope of this paper. Thus, to mention only one, the subject of muscular imbalance has not been discussed in any way though it is important. The data given are not presented because they offer anything new, but because they help to emphasize the too greatly neglected factor of eyestrain in its relation to health and happiness, and therefore to efficiency of work. The statistics have been classified in a way that is purely personal with the writer. An attempt has been made to present them in a form which is clear and which will make them available for comparison with others of the kind. The separation of the students into two groups—those wearing glasses and those not wearing them—has no special significance. It simply serves to indicate the number who, for one reason or another, have found it necessary to pay some attention to their eyes. How well this duty has been performed is another matter which must be determined in each separate case. The data are given as percentages, and a word of explanation as to how the percentages are calculated is necessary. The table is divided into sixteen subdivisions in which will be found the numerical values upon which the calculations are based. Thus, for example, the table shows (in division 3) that there were 2161 students who had hyperopic astigmatism, compound or simple, and who did not wear glasses. Of these 2161, 89 per cent. had normal visual acuity. Division 6 shows that 320 (wearing glasses) had myopic astigmatism, compound or simple, and that 50 per cent. of these had a reduction of acuity to between 20/40 and 20/100 (that is, to between 1/2 and 1/5 normal), etc.

Another point that will be noted is that the classification of refractive errors is limited practically to a division into hyperopic and myopic types, though a few figures are given relating to asymmetric and mixed astigmatism, to unequal visual acuity of the two eyes, and to some other matters. This arrangement has been unavoidable for the rea-

TABLE OF STATISTICS.

From Examination of 3326 Regularly Enrolled Men.

The asterisk printed after the numbers in the right hand column indicates that glasses were worn.

Astigmatism—simple and compound.

(1) 2484
Per cent. with hyperopic type 87
Per cent. with myopic type.. 8
Unclassified (including mixed astig., doubtful diagnoses) 3.0

(2) 842*
Per cent. with hyperopic type 50
Per cent. with myopic type..39
Unclassified cases ..... 8 (as in division 1)

Astigmatism (hyperopic type).

(3) 2161
Per cent. with acuity normal in both eyes 89
Acuity subnormal in both eyes 5
Acuity in left eye normal but subnormal in right..... 4
Vice versa 2
Acuity reduced to 20/40 or less in one or both eyes...10†

(4) 427*
Acuity normal in both eyes, 60 per cent
Acuity subnormal in both eyes, 32 per cent.
Acuity normal in one eye, subnormal in other.. 8 per cent.
Acuity reduced to 20/40 or less in one or both eyes...19

†Percentage calculated from those with subnormal acuity.

Astigmatism (myopic type).

(5) 222
Acuity 20/40-20/100 both eyes, 34 per cent.
Acuity 20/40 or less one eye, 13 per cent.
Acuity 20/100 or less in one or both eyes ..... 4 per cent.

(6) 320*
Acuity 20/40-20/100 both eyes, 50 per cent.
Acuity 20/40 or less in one eye, 6 per cent.
Acuity 20/100 or less in one or both eyes .....2-3 per cent.

(7) Asymmetric and mixed.
Percentage asymmetric axes in hyperopic eyes (yr. 1910) with normal vision.....40
Percentage of axes at or near 180° in asymmetric class...50
Mixed astigmatism, with v. = 20/40 or less—approximately 2 per cent of those with subnormal vision.

(8) Anisometropia.
Total percentage with unequal visual acuity in the two eyes due to errors of refraction, including both myopic and hyperopic types, amounting to 0.25 D. or more (no glasses worn) .....10 per cent.
Emmetropia.
Total *number* in whom no refractive error below 0.25 D could be demonstrated 18 or 20

Hyperopia and Myopia.

(10) Simple hyperopia and myopia (glasses not worn), 2.0 per cent.
Myopia of 5 D or more—a half-dozen cases.
Proportion of hyperopes to myopes among those who have subnormal vision: Hyperopes slightly in excess.

(11) Simple hyperopia and myopia (glasses worn) 3 per cent.
Myopia of low degree, 88 per cent.
Myopia of medium degree, 6 per cent.
Myopia of high degree, 12 per cent.
Cases with one eye myopic and one hyperopic.....30

Miscellaneous Data.

(12)
Percentage of 3326 students wearing glasses 27
Percentage wearing glasses constantly .....3 or 4
Percentage of 842 wearing glasses needing change of lenses 40
Number blind or practically so in one eye 15
Number totally blind in both eyes (year 1911-12)..... 6
Percentage with weak accommodation (no glasses worn) 4
Total per cent. with subnormal acuity 30
Percentage of students who have never consulted a specialist 40
Percentage with symptoms of eye strain (no glasses worn), approximately 25
Showing symptoms and glasses worn 22
Muscular imbalance of 5 degrees or more (no glasses worn) .....2 per cent
Nystagmus .....1 case
Diplopia .....Several

Women Students (360 examinations).

(13) 205
Vision normal both eyes, 70 per cent.
Hyperopic astigmatism, 88 per cent.
Myopic astigmatism.. 7 per cent.
Unclassified astigmatism, 3 per cent.

(14) 155* 43 per cent.
Hyperopic astigmatism, 40 per cent.
Myopic astigmatism..50 per cent.
Unclassified .....10 per cent

Miscellaneous Data.

(15)
Percentage of those not wearing glasses who showed symptoms of eye strain.....36 per cent.
Showing symptoms and glasses worn .....26 per cent
Number of serious cases of eye strain 28
Women who had never consulted a specialist .....40 per cent.
Asymmetric astigmatism, vision normal (no glasses), 42 per cent.
Anisometropia (no glasses), 12 per cent.
Simple hyperopia and myopia (no glasses)..... 2 per cent.

(16) Short Course Students (agricultural).† Total 1091.
Hyperopic astigmatism, 77 per cent.
Myopic astigmatism..17 per cent.
Unclassified astigmatism, 6 per cent.
Never examined by oculist, 50 per cent.
Wearing glasses.....12 per cent.
Glasses wrong.....40 per cent.
Showing symptoms (no glasses worn) .....13 per cent.
Marked anisometropia but no symptoms ..... 7 per cent.

†Mainly from rural districts, and attending courses for 12 weeks only.

son that, under the restrictions mentioned above, refraction work must necessarily be only qualitative. An attempt has been made in each case to determine the *manifest* myopia or hyperopia, and to locate as closely as possible the axes of astigmatism. The data given on this last point are presented as approximate figures only.

Discussion of some phases of the subject of eyestrain suggested by the above statistics.—The importance of visual defects in school life is now pretty generally recognized, though there is still a woeful lack of intelligent cooperation among parents, teachers, and physicians in dealing with children handicapped by malfunctioning eyes. This condition of affairs exists in spite of the fact that attention was long ago called to the prevalence of eye defects in school children by the papers of Erismann[1] and Conrad[2] (1874) in Europe, and by Vance[3] and Loring[4] (1877), Risley[5] (1878, 1881), and Randall[6] (1882) in this country. The results of these earlier writers have been abundantly confirmed by many ophthalmologists, both in America and abroad. That many children do not have their eyes examined at the critical time is well known.[7, 8, 9, 10] This neglect has been strikingly shown by our statistics, too, from which it appears that from 30 to 40 per cent. of the students have never consulted an oculist.* Among these young people have been found many with deplorable conditions of the eyes, conditions which are frequently due entirely to neglect or to ignorant treatment. This point will be considered later.

There are many phases of the subject of eyestrain suggested by the above tables, but only a few can be considered here. In the first place it should be stated that we have used the generally accepted standard of visual acuity, viz., the Snellen test letters at a distance of twenty feet. Those who could read the letters subtending an angle of 5 minutes were set down as having an angle of normal acuity, expressed as 20/20. If we had held the men up to the higher standard of 20/15, as some of the best oculists are now doing, there would have been found a much larger number with subnormal eyesight. With the standard used here 30 per cent. of all students had subnormal acuity in one or both eyes.

The next fact to be noted is the high percentage of hyperopic errors. The figures given are in fair accord with those of Posey and McKenzie[11] and with those of Zimmermann,[12] which, excepting the work of Derby[13] and Randall,[14] are about the only published statistics relating to eye defects among college students. The fact that the majority of eyes are hyperopic would seem to be too well known to deserve mention, but it is a fact which, after all, cannot be overemphasized, particularly in explaining to students and non-medical people generally the causes of eyestrain. When we consider that the hyperopic eye is relieved of work only a moment at a time during the whole of the waking period, and that when focussed upon near objects, as in reading or doing any close work, the strain put upon such an eye is tremendously increased, the wonder is that poor vision and resultant ill health are not more prevalent. It may be stated that in a large body of individuals as strong and healthy as the majority of American college students are, at least 10 per cent. will have subnormal sharpness of vision as a result of the strain induced by hyperopia and particularly by hyperopic astigmatism.

The importance of astigmatism was first clearly demonstrated by the epoch-making work of Donders,[15] and since his time volumes have been written upon the subject. It has been shown that the majority of eyes are astigmatic to a greater or less degree. Gould, basing his statement on the examination of 15,000 or more pairs of eyes, says that little or much of this form of ametropia is present in 99 per cent. of eyes. There is no doubt that astigmatism holds a commanding place as a pathogenetic factor.[16, 17, 18, 19, 20, 21] It is not the purpose of this paper to discuss this subject, however. It is permissible, though, to plead for a recognition of the importance of astigmatism as a cause of eyestrain and many forms of ill health, and to call attention to the fact that it is a condition which is often overlooked, because with the ordinary trial frame and lenses, and with some of the methods general employed, it is impossible to measure low refractive errors with any degree of accuracy. It should be appreciated, too, that often in normal visual acuteness, astigmatism, pernicious in almost every case, cannot be found, much less measured, without the use of drops or, in technical language, without cycloplegia. The inaccurate work done in ignorance of, and in open defiance of, such well-established facts is accountable for many failures to relieve distress caused by eyes laboring under the handicap of refractive errors.

In this connection may be mentioned other important facts. It is well to remember that hyperopic eyes, which are known to be so prone to set up disturbances of one sort and another, may, in the beginning at least, cause no other result than gradually failing vision. In many instances we have noted marked reduction in acuity without the individual having suspected it. The explanation seems to be that the brain in such cases early fails to secure binocular vision, in that it neglects the impressions from one eye. In this way the individual may escape the sufferings of eyestrain, because of monocular vision, which, in the course of time, may result in permanent and severe injury to the neglected eye as a consequence of disuse. This means, of course, a great handicap; and there is the added danger of total blindness, or near approach to it, in case the better eye be injured by accident, of which there is no small risk among those students who work in chemical laboratories, machine shops, and the like. Generally, these eyes which are going out of function by reason of the disuse which the refractive error entails may be saved in these young people by proper glasses.

Another phase of the results of hyperopia, and of the astigmatism nearly always associated with it, is the matter of reflex disturbances met with in so called *nervous* individuals. These are persons with nervous systems of such a nature that persistent strain of any kind easily disturbs the equilibrium of the nervous organization, with the result that symptoms of the disturbance develop in one direction or another. Often these patients either fall into the hands of unscrupulous quacks who style themselves "specialists," or else wander into some sort of a sanatorium where a vague diagnosis is made and some such loosely used term as "neurasthenia" set down as the difficulty. They may be then treated by every therapeutic measure except accurately fitted glasses. In many instances a pair of scientific

*Gulick, in the MEDICAL RECORD, Vol. 70, page 12, says: "Not less than 30 per cent. of all children in our (New York City) elementary schools are suffering from ocular defects demanding correction, and not less than 17 per cent. have ocular defects so severe as to be a serious menace to their progress."

spectacles, properly worn, is all that is needed to restore the individual to health. We do not often meet with such cases in a body of college students, but we do encounter not a few students who have constitutions which can but poorly stand the pressure of a four-year course of study plus the extra strain which even a low grade of refractive error necessitates.

Allusion to this type usually calls to mind the poorly nourished, anemic person, more frequently a woman, who has difficulty in doing mental work and who often complains of being *nervous*. But these are not the only sufferers from eyestrain. There is another type altogether different, but not so frequently met with, represented by the big, healthy boy, whose strength and virility enable him to take part in such vigorous sports as football, hockey, etc., but whose life is often made miserable by severe headaches, and occasionally by insomnia, photophobia (hypersensitiveness to light), or indigestion. Most frequently the trouble first manifests itself as sleepiness on attempting to study, or as conjunctivitis or inflammation of the eyelids, etc. The symptoms are relieved to a large extent by strenuous exercise but often this fails to mitigate the discomfort which follows close work with the eyes. On examination, hyperopic astigmatism is usually found to be the cause of the difficulty, which disappears under proper treatment with glasses.

Myopia is also such a common defect, and people generally are so familiar with the prevalence of "near sight," that an additional word on the subject would seem quite unnecessary. The intention here is not to discuss myopia but to speak of the way in which it is, unfortunately, so frequently treated. Myopia may or may not be a very dangerous disease. Some oculists would say that it is always serious, inasmuch as it distinctly limits the field of vision. Certainly in progressive myopia we have a dangerous condition of the eye, and one which demands the most careful treatment. It is pitiful to see how some cases of near sight are handled, or even allowed to go unattended altogether. I remember one poor boy who came for examination about a month after entering college. He could not see a single letter on the test chart. It was quickly discovered that he had a myopia of about 2.50 D. with oblique axes of astigmatism. He had never had his eyes examined and was not aware that his vision was poor. He only knew that he did not see as well as some people. As the examination proceeded he became ill at ease, and when asked if the tests bothered him, he said that they made him feel "sick." The next moment he fell over in a faint. He was placed under the care of a good oculist, who had considerable trouble in carrying his examinations of the boy to completion at first, because of the nervous condition of the patient. Eventually the young man was enabled to continue his four-year course. How he could have done this without glasses is difficult to imagine. Many other instances of the neglect of eyes could be given, as could also many examples of the bungling attempts to relieve near sight. Many times have students come up for examination, which revealed that they had well advanced compound myopic astigmatism that had been entirely overlooked, or, what is worse, disregarded, by some one who had simply given plain concave lenses to improve vision.

At this point it should be stated that a fearful amount of botch work is done, both in the refraction of eyes and in the supplying and adjusting of glasses, with the result that there is almost as much *glass strain* as eyestrain.[22] We find refraction being done without cycloplegia when "drops" are absolutely essential for determining the true statical errors; patients are not required to return for confirmatory examinations and inspection of their glasses; they are not told the importance of keeping their glasses properly adjusted and cleaned; their eyelashes are allowed to rub against the lenses, and foolish notions about spectacles are permitted to interfere with the oculist's work. The most astonishing thing is the employment of incorrect test lenses, of which there must be an amazing number in the land, because it has been found that even the best optical firms have put out test cases, pronounced perfect, which in some instances have proved to contain many wrongly marked lenses, particularly among the cylinders. One such "perfect" set contained nearly 17 per cent. of incorrect cylinders.[23] In addition, the opticians who grind the lenses for the patient frequently do miserable work. They interchange the lenses, or reverse them, center them improperly, locate the axes wrongly, and adjust the frames badly. It is no wonder that people often fail to obtain relief, become discouraged, and eventually resort to almost anything in their despair.

Here a word may be said about the unfortunate and vicious legislative errors which have been made in this country. Our laws have made it possible for people to do refraction work without having any knowledge of the eye and its diseases, and particularly without the slightest idea of the close relation of ocular conditions to pathological states of other organs,[24] and thus it comes about that many persons, ignorant of the complexity of the eye, and of the skill and knowledge required to treat its diseases, generally due to refractive errors, place themselves in the hands of "eyesight specialists" and persons who make a great point about testing the eyes without the use of "poison drops." The result is that miserable refraction work is done and serious lesions of the eye are overlooked. Not infrequently these ocular disturbances are due to disease processes located primarily in other organs, and thus the diagnosis of dangerous maladies is delayed. Twenty-six states in this country encourage work to be done in this way by licensing people to practise "optometry"[25] [26] without a medical education and with no more experience than a few weeks' or months' training in elementary optics. And what is more to our shame, we are not yet rid of quacks who do not refract but who prey upon ignorant people by offering to cure for stated sums all sorts of serious ocular diseases by "magic eye treatment" of one kind and another. These are conditions which seem impossible when we think of how we pride ourselves on our twentieth century methods of education. They are serious matters which call for intelligent and careful consideration.

Allusion has already been made to the importance of astigmatism and of unequal visual acuity of the two eyes, or anisometropia, as this condition is technically called. The two subjects may well be given brief consideration together because the latter condition, which is much more common than usually supposed, is so frequently caused by the former. It is important to note that the percentage of eyes having unlike axes of corneal curvature is high. (We should remember that it is such eyes that most frequently cause trouble.) Further, it is interesting to observe that quite a number will have the axes exactly reversed in the two eyes, that is,

the planes of abnormal curvature will be at 90 and 180 degrees respectively, for example. All possible deviations from the vertical axis, 90, are found, and the percentage of odd axes is large. When we remember that, in addition to this, the amount of curvature defect in the two eyes may differ greatly, thus producing the condition called anisometropia, we can easily see how difficult it is, in many cases, to obtain binocular vision, and how great the corresponding strain upon the nervous and visual mechanisms may be. Dr. George M. Gould has emphasized the fact that an ametropic defect which throws the focus only 1/300 of an inch away from the point where it ought to be may interfere distinctly with the sharpness of vision. In the majority of ametropic eyes the misplacing of the image is more than 1/300 of an inch. Furthermore, because of the fact that the refractive power of the two eyes is generally not the same, the size, shape, and position of the two images are such that it is difficult, or impossible, to fuse the two impressions into one mental picture. It comes about that with this effort the coincident strain aggravates the defect, and sooner or later reflex functional disturbances arise, such as headache, nervousness, indigestion, and many other symptoms which presage the approach of ill health.

The author[27] just quoted, who has done so much in this country to emphasize the importance of exact correction of astigmatism and anisometropia, is of the opinion that these two conditions are the great causes of eyestrain, and secondarily of a large number of systemic diseases. The beginning of ill health is certainly often to be traced to reflex disturbances of ocular origin. One of the most interesting and valuable things that this writer has pointed out is the connection between right and left-handedness and right and left-eyedness, and the important practical bearing this relation may have in the treatment of visual defects.[28], [29] It is a subject incompletely investigated as yet, but it is doubtless of great significance. We have not appreciated fully the harm done to left-handed children in attempting to make them right handed, nor the damage that may follow when a left-eyed individual is compelled by an ocular defect to be right-eyed, or a right-eyed one to be left-eyed. In this connection it is important to recall that not every person with bad eyes has general symptoms. We have found many instances of astonishing degrees of ametropia, both of hyperopic and myopic varieties, with absolutely no symptoms of eyestrain. It may be said that it sometimes happens that no symptoms develop in these subjects until some unskilled person attempts to render the eyes emmetropic by glasses. It is clear that the danger of badly impaired vision in these insidious cases is great.

In completing this division of the subject brief allusion will be made to the relation of college work to increase of eye defects. We have not had opportunity here to follow up this subject, but we have undoubted proof that many eyes fail during the college course. It seems to be most noticeable here among architectural and engineering students, and is doubtless due to the great amount of drawing required of these men. One important factor in the production of failing eyes is poor artificial light and poor distribution of such light. There are thousands of students working many hours at night, and even many hours in daytime, with glaring electric lights shining directly into their faces. Lights are generally arranged in libraries, reading rooms, and laboratories without much reference to the comfort of those who must use them. There are great public and university libraries where hundreds of eyes are treated daily to the most unhygienic distribution of light imaginable. When shall we learn the injustice of this sort of thing?

Another cause of failing students' eyes is the use of skull caps, which furnish no protection from bright sunlight. To compel boys, especially those with sensitive retinas, to wear these caps in obedience to college customs is a vicious practice. More sensible caps could just as well serve to distinguish freshmen and sophomores, etc., and a vast amount of eye trouble would be prevented.

Eye-tests at various colleges and universities.—In the introduction it was stated that the thoroughness of the physical examinations at various institutions varies greatly. Bearing upon this point, I have collected statistics by sending a questionaire, with especial reference to eye examinations, to about 150 institutions of learning in this country. Replies were received from 105, and to those who were kind enough to answer the questions my thanks are due. Twenty-two of the institutions from which replies were received do not require eye examinations. Some of these institutions do not consider such work practical, others are indifferent, while a few have a genuine interest and enthusiasm in the work. Among those which do not require these examinations were three prominent schools of technology, two well known schools for women, and one great university, all having a large number of students. In most instances where the tests are made they are made by the physical director in charge, who is often not a physician. In only about a dozen institutions is an eye specialist engaged. Eighteen replies indicated that this sort of work was done with care and interest, to a degree that an effort had been made to get at important facts regarding the influence of eyestrain upon the college work and the health of the students. From the replies of these few schools it could be seen that the tests were being made carefully and that results were being recorded and studied. The writer was interested to know what estimate had been made elsewhere of the number of students needing glasses. In seventeen colleges and universities the estimates ranged from 10 to nearly 100 per cent., the latter figure being that from a government institution, where, it is stated, practically every student wears glasses before he finishes his course. The average of the percentages quoted is 34, which is probably not far from the truth. Taking the regularly enrolled men at this institution, the lowest estimate I can put upon the proportion whose eyes are defective enough to justify the wearing of glasses is 40 per cent. Among the women it will be higher by at least 5 per cent. In one well known college for women where careful examinations of the eyes are made, the physician in charge estimates that from 50 to 60 per cent. of the students wear glasses or need them.

From the facts given in this paper it may be seen that ocular defects must be an important factor in determining the efficiency of the work done by college students (witness the case cited). It is also apparent that we are sorely in need of means for examining more thoroughly the eyes of the public school children. Rough tests for myopia alone are all that are usually attempted, so that many cases of astigmatism and hyperopia are overlooked.

These are often the most serious cases. In

spite of the agitation which has been made, eye strain is a matter which has been too greatly neglected. There is no doubt that many a worthy student has been dropped in disgrace from his college when he might have completed his course with credit had his eyes permitted him to study as he desired to do. It is important to recognize, therefore, that eyestrain is not a fad and not simply a pet subject for eye specialists to harp about. Defective vision is a real condition afflicting most seriously the lives and careers of great numbers of people, and among our college students it is one of the most important factors which have to do with progress and success.

I wish to acknowledge my indebtedness to Drs. L. Coville, A. C. Durand, George M. Gould, J. S. Kirkendall, S. A. Mumford, and R. C. Wilson of Ithaca for assistance in collecting data for this paper. By the help of these gentlement the labor connected with the work has been made a pleasure.

REFERENCES.

1. Erismann: "Ein Beitrag zur Entwicklungsgeschichte der Myopie," *Archiv. für Ophthalmologie,* 1874, XVII, i. page 1.

2. Conrad, M.: "Die Refraktion von 3036 augen von Schulkindern," Inaugural Dissertation, Königsberg, 1874.

3. Vance, R. A.: "The Development of Myopia Among the School Children of America," *Detroit Medical Journal,* 1877, page 561.

4. Loring: "Is the Human Eye Changing Its Form and Becoming Nearsighted under the Influence of Modern Education?" Medical Society, County of New York, November, 1877.

5. Risley, S. D.: "Weak Eyes in the Public Schools of Philadelphia," Transactions of the Medical Society of Pennsylvania, 1881. "Good Vision an Important Factor in the Educational Process," *Bulletin of the American Academy of Medicine,* Vol. VI, No. 4.

6. Randall: "Hypermetropia in Public School Children," *Medical News,* 1882, XL, page 141.

7. Bray, A.: "Eye Strain Among School Children," International Clinics, Philadelphia, 20, S. I., page 140, 1910.

8. Claiborne, J. H.: "The Nervous Symptoms Produced in Children by Uncorrected Refractive and Muscular Errors," *Journal of the American Medical Association,* 1904, XLIII, 1754.

9. Adams, A. L.: "Subjective Symptoms of Eyestrain and Their Effects upon Pupils' Work," *Illinois Medical Journal,* 1906, X, page 581.

10. Cornell, W. S.: "Eyestrain in School Children," *New York Medical Journal,* 1907, LXXXIII, page 1022. "Health and Medical Inspection of School Children," Philadelphia, 1912, page 201.

11. *Journal of the American Medical Association,* Vol. XLVIII, page 1010, 1907.

12. *Annals of Ophthalmology,* October, 1905.

13. *Boston Medical and Surgical Journal,* XCVI, 1877.

14. *Transactions of the Medical Society of Pennsylvania,* Philadelphia, XVII, 1885.

15. "Astigmatismus und cylindrische Gläser," Berlin, 1862.

16. Pyle, W. L.: "Asthenopic Reflexes," Cohn's System of Physiologic Therapeutics, Vol. VII, page 367, 1904.

17. Dixon, L. S.: "Eyestrain," *Journal of the American Medical Association,* 44, II, page 1256, 1905.

18. Reber, W.: "Some Unusual Effects of Eyestrain," *Opthalmoscope,* London, VIII, page 880, 1910.

19. Alger, E. M.: "Reflex Disturbances Depending upon Eyestrain," *Boston Medical and Surgical Journal,* CLXIV, page 142, 1911.

20. Hunter, D. W.: "Some Phases of Asthenopia—A Study of Eyestrain," *New York Medical Journal,* XCIII, page 122, 1911.

21. Pohlman, A. G.: "The Etiology of Eyestrain from a Phylogenetic and Ontogenetic Standpoint," *Journal of the American Medical Association,* 44, II, page 1434, 1905.

22. Gould, G. M.: "Sixty-eight Reasons Why Glasses Did Not Give Relief," Biographic Clinics, Vol. II; *American Medicine,* July 4, 1903.

23. Hartshorne, Isaac: "Accurate Optics," *Boston Medical and Surgical Journal,* CLXIV, 12, page 786, 1911.

24. Thorington, J.: "Refracting Opticians," *Pennsylvania Medical Journal,* 1909, XIII, page 369; *Journal of the Medical Society of New Jersey,* 1910-11, VII, page 403

25. Jackson, Edward: "The Optometry Question and the Larger Issue Behind It," *Journal of the American Medical Association,* 1911, LVII, page 265.

26. Hall, G. C.: "The Optometry Question; Its Relation to the General Profession and Public Health," *American Practitioner and News,* Louisville, XIV, page 567.

27. Gould, G. M.: Biographic Clinics, 1903-1909. "The Cause, Nature, and Consequences of Eyestrain," *Popular Science Monthly,* November, 1905. Borderland Studies, 1896, 1908.

28. "Right-eyedness and Left-eyedness," *Science,* New Series, XIX, page 591, 1904.

29. "Right-handedness and Left-handedness," 8vo, 1910.

For more extended references and discussions bearing upon this subject and others considered in this paper see the excellent work of Professor C. Hess: "Die Anomalien der Refraktion des Auges." Graefe-Saemisch Handbuch der Gesamten Augenheilkunde, 1910.

THE PROBLEM OF VENEREAL PROPHYLAXIS.

By ROBERT A. BACHMANN, M.D.,

SURGEON, UNITED STATES NAVY; EXECUTIVE SURGEON UNITED STATES NAVAL HOSPITAL, NEWPORT, R. I.

In the matter of medical interest preventive medicine as contrasted to therapeutics has always been, more or less, the under dog. Metchnikoff's experiments proving that syphilis can be prevented by the application of a 30 per cent calomel ointment created quite a stir of attention, but nothing like the veritable storm of interest, even extending to the laity, which followed the announcement of Ehrlich's curative agent. Yet of the two, eventually, in the course of time the former will be adjudged the more valuable contribution to medical science and mankind. Where literally thousands of medical men rushed to the employment of salvarsan and a torrent of reports resulting from its worldwide use flowed in upon the medical press, only the most casual use was made of calomel ointment as a prophylactic and laboratory as well as practical corroboration was extremely meager.

In our army and navy, perhaps the greatest amount of interest was shown and attempts were made towards the practical application of Metchnikoff's discovery, but even here it cannot truly be said to have been the subject of much productive study, particularly systematic and scientific experimentation. The amount of work done in the two services, to put the question, of not only luetic but gonorrheal and chancroidal prevention on a sound basis, has been exceedingly conscientious as well as painstaking, but unfortunately the results are so lamentably at variance that at the present time the question—Does venereal prophylaxis prevent venereal diseases?—put to a dozen service medical officers will bring forth quite a diversity of opinion. The report of the Surgeon General of the Navy is what might be called only lukewarm in its comment:

"Venereal diseases continue to be the most potent factor of damage to the naval service. During the past year 138,083 sick days were caused by venereal disease alone. During the past year a system of prophylaxis against venereal disease has been carried out. The Bureau is of opinion that prophylaxis against venereal disease is of value. The decrease in the number of cases of syphilis is striking. It is believed that some form of prophylactic packet, which can be taken by the men and used immediately after exposure, will prove more effective. That there is not a more marked decrease is due to the more rigorous search for concealed cases; also a more widespread knowledge of the dangers of venereal infections has brought to the surface an increment of hitherto carefully concealed disease. To-day we

are obtaining a more accurate admission rate for venereal disease than the statistics of the Navy have hitherto shown."

That gonorrhea is not mentional as having suffered a "striking" decrease is significant, and as a matter of fact in the detailed report it holds its undisputed place at the head of the list of diseases. The admission rate for all venereal diseases for the last three years which comprise the era of prophylaxis, and the year 1906 for comparison, is as follows:

	Total Navy.			
	1906	1909	1911	1911
Personnel	41,513	52,913	57,172	58,340
	Gonorrhea			
Admissions	2,085	3,015	5,861	6,062
	Chancroid			
Admissions	537	665	1,573	1,968
	Syphilis			
Admissions	981	1,001	1,476	1,315

Now as the venereal propaganda was probably carried on more rigorously on board ship, where it could be done with greater efficiency, the statistics for the force afloat are also given:

	Force Afloat			
	1906	1909	1910	1911
Personnel	34,820	32,181	34,688	35,567
	Gonorrhea			
Admissions	1,641	2,054	3,956	3,906
	Chancroid			
Admissions	458	512	1,178	1,409
	Syphilis			
Admissions	710	564	829	849

From these figures it is rather difficult to see where the decrease in the prevalence of syphilis is accounted for, but this is evidently shown in special reports. The poor showing of the statistics is partly explained by the fact that the closer examinations of the men since prophylaxis was begun resulted in a much larger number of cases being detected and reported.

The Surgeon of the Army in his latest report makes this rather favorable statement: "The propaganda for the prevention of venereal diseases in the Army which was initiated by this office in January, 1909, has begun to show good results as demonstrated by the rates for 1910, as compared with the preceding year. These were as follows, for the whole army:

	Entire Army		Army in the United States Proper	
	1909 Per Cent.	1910 Per Cent	1909 Per Cent.	1910 Per Cent.
Admissions per 1,000	196.99	174.95	177.46	155.51
Original admissions (cases)	169.61	154.91	151.35	137.98
Constantly non-effective rate	13.07	11.51	11.44	10.14

The admissions from each disease per 1,000 are as follows:

Gonorrhea and results	
1910	102.44
1909	125.27
1908	123.50
1907	107.68
1906	105.21
1905	118.31
Chancroid	
1910	26.42
1909	25.33
1908	28.20
1907	34.78
1906	26.41
1905	20.39
Syphilis	
1910	26.65
1909	26.85
1908	23.15
1907	25.36
1906	27.28
1905	30.02
Total venereal.	
1910	155.51
1909	177.46
1908	174.84
1907	167.82
1906	158.91
1905	178.72

The campaign in the Army against the venereal evil was very active and particular attention was paid to the educational feature of it, in fact, some of the Army surgeons reported that this was the most important single factor. The Surgeon General's opinion, after detailed reports had been received from every station in the Army as to the value and results of the respective methods employed, is as follows: "It is plainly necessary for the War Department to take hold of the matter, and it is believed that sufficient experience has accumulated to accord a basis for a clear-cut, vigorous and successful policy. From these reports the following deductions may fairly be drawn: (1) Instruction of the men by lectures, printed circulars, and by medical officers and company commanders regarding the dangers of illicit and promiscuous sexual indulgence and the undoubted advantages of self-control and continence.

"Most of the reports bear testimony to the value of this instruction, and at some posts it is stated that a distinct improvement in the venereal record followed the delivery of lectures on these subjects. A few officers expressed skepticism of its value. One post surgeon in the United States and one commanding officer in the Philippines expressed the opinion that this is the only agency which should be used. It seems quite certain that this instruction is valuable directly in proportion to the earnestness devoted to it and the imagination and skill which is employed in making the instruction interesting and attractive.

"It is also clear that the efforts of the medical officers cannot accomplish much without the constant interest, moral support, and active assistance of the commanding officers and company officers. (2) Instruction in the employment of personal cleanliness and the use of disinfectant applications to prevent contagion by those men who will not be restrained by moral and prudential considerations from exposure to venereal diseases."

As I desire in this article to deal solely with the value of venereal prophylaxis as far as it concerns the efficiency of the present medical measures as distinct from educational, I have abstracted this last paragraph so that proper allowance may be made in studying the Army's figures, for the moral impression upon the men, its consequent increase of continence and resulting decrease of venereal admissions due entirely to that source. The above extracts may be assumed to represent the condensed opinion drawn from all the statistical reports sent in to the Army and Navy medical heads.

Venereal prophylaxis for the purpose of classification may be divided into two heads: the double method and the single method. Both can be applied immediately or later. The double method requires the application of two distinct substances to completely protect against the three diseases most common—gonorrhea, syphilis, and chancroid. The single method aims to accomplish the same result by the application of one medicament.

Various preparations and chemicals have been tried in the double method, but one is common to all—calomel ointment. The only variation in its use is in its strength. This ranges from 20 to 50 per cent. and is intended to protect against syphilis and chancroid. To prevent gonorrhea solutions of bichloride of mercury, silver nitrate, potassium permanganate, the organic silver salts, carbolic acid,

thymol, and eucalyptol have been used. The steps of application are about as follows: (1) Wash external genital organs thoroughly with Hg Cl_2 solution, 1-5000. (2) Inject into the urethra 4 centimeters of a solution of whatever chemical is thought best and retain this from 1 to 5 minutes. (3) Smear entire penis with a 25-50 per cent. calomel ointment, particularly about frenum.

This comprises the salient features of almost every one of the various double methods in use and is supposed to be efficient for as long as eight hours after exposure.

In the Army and Navy the double method is given the men after they return to the ship or barracks from shore liberty on the following morning. But attempts have been made to devise a means of immediate application. This has resulted in the getting up of various packages containing a syringe or dropper, an antiseptic solution, and calomel ointment. Collapsible tubes, being loaded on one end with protargol or argyrol solutions and on the other with calomel ointment, have been constructed, plain, or made to resemble a cartridge to disarm suspicion. The Army packet "K" consists at present of a protargol (20 per cent.) or argyrol (10 per cent.) solution, a medicine dropper or syringe and a vial of 30 per cent. calomel ointment. Different medical officers have modified this to suit individual ideas. The original packet, gotten up by Col. Raymond, contained no calomel ointment and was intended merely as prophylactic against "clap." So much for the double methods.

The single method consists of one medicament, usually an ointment, which protects against all venereal diseases. The bases of these various ointments are lard, lanoline, and vaseline, alone or in combination. Calomel is the principal ingredient and by some is considered a sufficient prophylactic against gonorrhea as well as chancroids and syphilis. Carbolic acid, thymol, argyrol, protargol, lysol, and trikresol have been used incorporated with the calomel to increase its preventive value against chancroid and gonorrhea. A collapsible tube of metal-paper, or celluloid is filled and is meant to be used as soon after exposure as possible. As with the double method no claim for efficiency longer than eight hours is made.

I think that at present throughout both services the double method has been generally adopted, this being particularly true of the Navy, where it is used almost exclusively. So the results obtained in the Army and Navy may, with approximate accuracy, be taken to represent the results of this one method. Two of the most recent reports, one from each service, are a good sample of how the double method is producing results. The first is by Holcomb and Cather,* and deals with 3,268 treatments on board the U. S. S. *Virginia:* the second is by Major Howard, U. S. A.† and gives his experience with 305 treatments at Jefferson Barracks, Missouri. The Naval prophylaxis consists of this procedure: "(1) Wash penis, head, shank, and under frenum with 1-5000 bichloride of mercury solution with a cotton sponge. (2) Pass water. Take urethral injection of 2 per cent. protargol solution and hold to count 60. (3) Rub 50 per cent. calomel ointment well into foreskin, head and shank of penis, with particular care about frenum. Either side of the frenum is the most frequent site of sores."

The results were:

Treatments, 3,268.

Gonorrhea	
With prophylactic	64 infections
Without prophylactic	50 infections
Sixteen cases took prophylactic within 10 hours.	
Chancroid	
With prophylactic	35 infections
Without prophylactic	27 infections
Nine cases took prophylactic within 10 hours.	
Syphilis	
With prophylactic	3 infections
Without prophylactic	12 infections

All cases infected after using prophylaxis were over the 10-hour interval. This is a rather good showing, particularly in syphilis. Major Howard's method was as follows: "(1) Wash external genital organs thoroughly with bichloride of mercury solution (1-5000). (2) Inject into urethra 4 c.c. argyrol solution (20 per cent.) using ordinary penis syringe. Solution to be held in urethra for full five minutes. (3) The entire penis will be smeared with calomel ointment (20 per cent.) and allowed to remain undisturbed. About 2 grams of ointment will be sufficient ordinarily. Especial care to be taken that the head of penis and foreskin are thoroughly covered." The report gives no comparative figures, but in 393 treatments covering two months, three cases of infection occurred. The total number of men exposed is not given, but 22 cases of venereal infection (not classified in report) occurred in men not taking any preventive.

From these reports it seems fair to conclude that prophylaxis is possible, but that it requires a great deal of attention on the part of the medical officers and that the double method itself must be very rigorously applied in order to be effective. Even then cases will occur. So it cannot be counted, at least in gonorrhea and chancroid, as a certain safeguard. In civil life where the strict routine and facility for controlling men are impossible it is impracticable. As for its immediate application it is so full of objections, such as difficulty of application, bulk of necessary packages, staining of clothes, etc., that we can confidently expect it never to be used.

The single method has had no extensive trials and reports on its efficiency are few. Colonel L. M. Maus, U. S. A., who is a warm advocate of the single method, made a favorable report* on the use of a special tube of his own invention, containing calomel ointment and 5 per cent thymol. He claims no cases of venereal disease occurred in troops assembled at Chicago for a military tournament, but he gives no figures. At Fort Benjamin Harrison, Colonel Maus gave his tube another test. I quote his report: "During my recent service at the Camp of Instruction, near Fort Benjamin Harrison, Indiana, I had another excellent opportunity to observe the effects of the prophylaxis. The regular troops, which remained here during the month, consisted of eleven companies Tenth Infantry, ten companies Twenty-sixth Infantry, eleven troops Sixth Cavalry, Company "A" Signal Corps, Company "I" Engineers and one-half Company "C" Hospital Corps. Each of these organizations was given a physical examination a few days previous to its arrival at camp to determine its fitness for field duty, and a list was submitted to my office of the men who were suffering from venereal diseases. All of the organizations were supplied with the prophylactic tubes shortly after arrival, and the men, in lectures by the regimental surgeons were instructed as to its use. I endeavored to have the tubes distributed to the

United States Naval Medical Bulletin, January, 1912.
†*The Military Surgeon,* December, 1911.
*The *Military Surgeon,* Dec., 1910.

men, but experienced no little trouble in so doing. Although the regimental surgeons, regimental commanders, and company officers were thoroughly satisfied as to the efficiency of the tube and its expediency, few of them took any interest whatever in the matter, so much so that quite a number of the men, who contracted venereal diseases during the encampment, informed me that they were not supplied with the tubes, and many of them that they had not heard of it, nothwithstanding the fact that each first sergeant was supplied with sufficient for each company, and was supposed to advise the men as to their use. In spite of the difficulties, however, nearly 3,000 tubes were issued during the month. A few days before breaking camp the command was given a second physical examination, this time in order to ascertain their fitness for the impending practice march, which had been ordered. A series of questions were asked each man examined regarding his sexual history during the month in connection with the tube, and, from the table compiled, the following facts were learned: (1) That 504 men had indulged in sexual intercourse during the encampment, who had used the tube after each contact. The number of contacts amounted to 1,301. Of these men two reported with gonorrhea, though one of them made glaring contradictions in his statements regarding the use of the tube, while the other man claimed that he had used the tube but did not understand it. (2) That 302 men had indulged during the encampment, who had not used the tube. The contacts of this class amounted to 763. As a result of these unprotected contacts one contracted syphilis, 26 gonorrhea, and 12 chancroids. In the first class of men, those who were protected, the percentage of infections per thousand amounted to ¼ of 1 per cent, while in the second class, the unprotected, the percentage amounted to 13 per cent. While I am not able to state it as a fact, I am morally satisfied that the three men who contracted the disease and claimed the use of the tube, had either not used it properly, or had failed to use it after the last contact during the seance in which they were infected."

In regard to syphilis, and perhaps chancroid, but at all events the former, the value of the single method needs no pointing out. Calomel ointment is the most potent half of the double method, as shown in almost every report. Applied immediately it can only be still more valuable. The best of evidence, namely, positive experimentation, is in its support. Metchnikoff and Roux demonstrated the action of fatty mercurial preparations as protectors against infection in monkeys, and incidentally also proved that non-fatty solutions were inert. Maisonneuve, as a result of their studies doubly inoculated himself with fresh virus and fresh virus from a luetic subject. Four monkeys were inoculated with virus on the same day, and one hour after inoculation Maisonneuve and one of the monkeys were rubbed on the site of the inoculation for five minutes with an ointment specially devised by Metchnikoff. The man, in the words of Metchnikoff, "notwithstanding the inoculation of a vastly larger quantity of active virus than would have been received in the ordinary way, remained absolutely free from any manifestations of syphilis." Metchnikoff therefore considers that this experiment shows that the application of calomel ointment within an hour of inoculation is preventive of infection both in the man and in the monkey. Experiments on monkeys showed that when the ointment was applied twenty hours after inoculation, the preventive action did not take place. G. N. Blech, at Michigan City, reports the case of a sergeant who exposed himself to a woman having a chancre on her right labium. He was protected within an hour by calomel ointment and escaped infection. Both direct and indirect evidence coincide with establishing the position of calomel ointment securely as a positive protection against syphilis. As the same ointment, reinforced by some other antiseptic, is designed by the advocates of the single method to protect also against gonorrhea, I shall bring some evidence to bear in support of this claim.

The indirect evidence is very scarce. Assistant Surgeon Reginald B. Henry, U. S. Navy, in his brief paper on "Calomel in Gonorrheal Prophylaxis," gives the result of a six-months' experience of the use of an ointment containing 50 grams of calomel, 80 c.c. of liquid petrolatum and 70 grams of lanolin among the men of the U. S. S. *Rainbow*, on the Asiatic station. During the period named, there were 529 admitted exposures, with four cases of gonorrhea. Of these four patients, one denied exposure and did not receive the treatment; two received treatment more than twelve hours after the exposure, so that only one possible failure of treatment remained, a percentage of .189. He finds the calomel cheap, efficacious, cleanly and non-irritating. The ordinary glass penis syringe was used for the injection of the ointment.

Direct evidence is furnished again by Dr. Blech. He infected with gonorrheal pus both eyes of a litter of pups, four in number and two weeks old. A few minutes later he injected 25 per cent. calomel and lard paste into the right eye of each pup, leaving the left eye unprotected as a control. In each case the protected eye escaped infection, while the unprotected eye became the seat of a severe attack of gonorrheal ophthalmia. This is a valuable contribution to the subject of prophylaxis and really affords more satisfying proof than any number of cases of indirect evidence. By indirect evidence I mean the adduction of proof through stating a given number of exposures with prophylactic treatment who have escaped infection. After all, an "exposure" does not mean an exposure to an active gonorrhea, and my own experience on the U. S. S. *St. Louis*, while sailing around South America, where the crew had great opportunity to contract venereal diseases, but actually escaped with less cases than the average ship reports now with prophylaxis, causes me to think that this fact has been overlooked altogether too regardlessly. One may refer back for instance to Surgeon Holcomb's report. He has 64 infections with prophylactic treatment and 50 without. Yet he states as his opinion elsewhere in the report that "with reference to the effectiveness of the treatment we would say that we feel reasonably certain that at least one-half of the men exposed present themselves for treatment. On this basis if 3,258 exposures took treatment we liberally estimate that 3,258 did not take treatment. This adds an element of uncertainty in reading these reports to anyone trying to arrive at some logical conclusion therefrom and the direct evidence of Metchnikoff, Roux, Maisonneuve and Blech affords a welcome element of stability and conclusiveness.

Having been convinced a long time of the worth of the single method I designed a tube and compounded an ointment last year which should overcome all the obstacles usually urged against the single method. In brief it consists of a collapsible

metal tube holding 6 grams of 33 per cent. calomel ointment reinforced by 1 per cent. trikresol. The main feature of the tube to which I ascribe its efficiency is a soft rubber nozzle 1.5 inches long which is inserted into the urethra and places the ointment well up beyond any possible area of infection and allows also a long time of contact with the ointment before it flows from the meatus. After a great many modifications the tube was brought to a satisfactory completion and the following experiments were made with it:

A patient having been confined in bed for a month with a fracture was given liberty. He reported gonorrheal infection a few days later. He had had no other liberty and named a certain inmate of a Newport brothel as the cause of his illness, and stated also that he had only exposed himself once very briefly and had taken the ordinary precautions such as washing, etc. This woman was easily identified from his description and slides made from the urethra, vagina, and cervix. All positive. Ten exposures were obtained. All of them escaped infection save one man, about the middle of the series, and his case presents some interesting features. A few days after his exposure it was reported to me that this man had taken a liking to the woman and repeatedly revisited her. The woman was interviewed, admitted his return engagements and stated he had not used tubes at these times. The woman was cautioned not to use douches during the time of the experiment and was again examined at the conclusion. All three slides as before were positive.

Medical Director Diehl, U.S.N., who has had a great deal of experience in venereal prophylaxis, being one of the first medical officers to observe its results while Fleet Surgeon of the Asiatic Fleet; P. A. Surgeon K. C. Melhorn, U.S.N., who instituted systematic prophylactic routine aboard the U. S. S. *Dixie,* and Assistant Surgeon A. H. Dodge, U.S.N., all watched this experiment, corroborated the slides, and were satisfied as to its completeness and accuracy. Considering the conveniences, practicability for the layman as well as for the army and navy, low cost, and efficiency, the tube method seems to be the ideal prophylactic and is well worthy of further study.

The question of a venereal disease is complicated and presents many aspects. As long as doctors are not the lawmakers, such legal measures as should be taken in controlling or eliminating prostitution, placing venereal diseases on the reportable list, giving freer education about sexual physiology and pathology, etc., will be matters of slow accomplishment. But why agitate for free dispensaries for venereal disease and direct other efforts along therapeutic lines? Why not class venereal infection with yellow fever, malaria, tuberculosis, typhoid fever, and plague and attack the evil at its inception? That is within every physician's power—the pioneer work has been done and justifies further effort. Why are medical men and medical societies so indifferent?

United States Naval Hospital, Newport, R. I.

Temperature Elevations in Children.—A. Wolff has found that a rise of temperature amounting to as much as 1.5° C. may occur in children, and may have no diagnostic significance. Moderate exercise, such as a short ten minute walk, and climbing the stairs a number of times, is sufficient to cause this rise of temperature. If such children are delicate or give a positive von Pirquet they are sometimes treated for tuberculosis, even though the disease may not be present.—*Zeitschrift für Kinderheilkunde.*

RECTAL ADMINISTRATION OF THE SALICYLATES IN THE INFLUENZA OF INFANCY.

By GEORGE WESLEY BEATTY, M.D.,

BROOKLYN, N. Y.

In a pediatric practice extending over a period of ten years, I have been called upon repeatedly to treat cases of influenza in young children, and during that time I have employed many agents noted for their efficacy in the treatment of this protean malady.

Quinine, in one or another of its forms, has justly held its place among this number and I believe we have no cause to alter our opinion of it. The salicylates are the next agent we have at our command and they held forth much promise, reinforcing our armamentarium very materially. Taken as a whole, the action of the salicylates is laudable, but owing to certain unpleasant symptoms following their use it becomes necessary to limit the amount of the dose, or to find a new form less irritating or a method of administration of the salicylates whereby their irritability is reduced to a minimum consistent with potentiality.

When salicylic acid or any of its derivatives is administered to adults, it must be greatly diluted—this is very well for the average adult, but even then its administration cannot be continued indefinitely. If this is the case with the adult, how much more are we handicapped when dealing with the stomach of an infant.

Sodium salicylate was introduced into the U. S. P. at the 1880 revision. This is a handy preparation, but there are those who prefer to make the salicylates themselves, and for these Dr. Hager (*New Remedies*, Nov., 1879) gave the following rule, whereby in the absence of the crystallized salicylate of sodium the salt might be prepared *in solution* by using the following proportions, in parts by weight of salicylic acid and sodium bicarbonate: "To make of sodium salicylate four parts by weight, take 3.3 parts of salicylic acid and 2.0 parts of sodium bicarbonate." This did nicely for the adult, but the infant stomach was still neglected. We had salicin—a neutral principle obtained from several species of *Salix* and *Populus.* This has, aside from its irritating effect upon the gastric mucosa, an objectionable feature in its intensely bitter taste. Salicin, when decomposed in the bowel, becomes salicylic acid—and in spite of its insolubility becomes rapidly absorbed. Statistics point to the fact that it is absorbed probably as salicylate of sodium; at least, this is the form in which it circulates in the blood. This occurs whether we administer salicin, salicylic acid, or sodium salicylate. Some believe that it exists in the blood as an albuminate, but of this there is no evidence nor is there any evidence that when sodium salicylate meets with carbon dioxide, salicylic acid is set free. Some of the salicylic acid of the sodium salt uniting with glycocol forms salicyluric acid and appears in the urine. The reaction which takes place is as follows: $HC_7H_5O_2 + C_2H_5NO_2$ (glycocol) = $HC_9H_8NO_4$ (salicyluric acid) + H_2O. The conversion of benzoic acid into hippuric acid by uniting with glycocol is analogous to this change occurring in ortho-oxybenzoic acid or salicylic acid.

Let us look now to another form of salicylate—methylsalicylate or synthetic salicylate. As far back as 1875 Professor Proctor discovered that salicylic

acid could be procured from oil of wintergreen (*Gaultheria procumbens*). Modern research has shown that methylsalicylate exists in many of the essential oils—oil of wintergreen contains 90 per cent. of this ether. Methylsalicylate or methylsalicylic acid when taken internally is broken up and eliminated as salicyluric acid. The bad effects reported following the use of the synthetic product were undoubtedly due to impurities in the preparation, such as metacresotic and orthocresotic acids.

Salicylic acid and all its derivatives are more or less irritating to the stomach, giving rise to pain, nausea, vomiting, etc., unless well diluted. An adult can stand large amounts of diluent, whereas a child, and especially an infant whose stomach capacity is small, cannot tolerate or accommodate the large amount of diluent necessary in the case of the salicylates. While sodium and lithium salicylates and salicin are less irritating they require dilution and this militates against their employment in young children. Another feature is salicylism—statistics show this to exist in 60 per cent. of the patients taking the salicylates.

The symptoms of salicylism are very like those of cinchonism. Both the natural and synthetic salicylates produce salicylism. Deafness, tinnitus aurium, headache (sometimes delirium), nausea, vomiting, a slow, low-tension pulse, flushed face, epistaxis, hematuria either alone or accompanying albuminuria, erythema, and urticaria are some of the untoward symptoms that may present from time to time. We learn of idiosyncrasies only after they develop, and they are not easily explained away to the apprehensive parents. Without going into detail concerning the symptomatology of influenza, with which we are all familiar, I would like to recapitulate some of the symptoms frequently found in very young infants—infants under six months old. Here we find peculiar features. The temperature here is often but slightly above normal, but the prostration is extreme—out of all proportion to the findings—pale face, sunken eyes, decided apathy, loss of appetite often to the point of refusing all alimentation. In some we find all the symptoms of acute pulmonary congestion, rapid breathing, cyanosis, feeble respiratory sounds, and yet auscultation reveals only feeble respiration.

Frequently we find undigested stools pointing to indigestion, also purpuric spots on thighs, chest, buttocks or back. These are usually few in number and resemble the rash of measles and when these occur with coryza, sneezing, suffused eyes, and slight photophobia and cough, they are often mistaken for measles, until subsequent developments reveal the true nature of the disease. In these little patients there seems to be a profound poisoning of the system which has produced such a severe shock that there is frequently not enough vitality to overcome it and the child rapidly succumbs. Frequently pleurisy develops. It is in these cases that I prefer some form of the salicylates; it is in these cases particularly that the salicylates are distinctly contraindicated, owing to their irritation of the gastric mucosa.

It is in these cases, especially with pleurisy, that I have good results with the salicylates. I am ever jealous of my patients' digestion, therefore I administer all or nearly all medication *per rectum*. In this medication I include the salicylates. Some years back in the treatment of dysentery and acute intestinal catarrh it was the custom to irrigate the large intestine with solutions of salicylic acid. This method was formerly employed for the removal of the *Oxyuris vermicularis*.

My treatment, aside from sustaining the heart, is to use quinine and methylene-citryl-salicylic acid (novaspirin); incorporating them into suppositories with oleum theobroma and introduce one such suppository into the rectum every six hours. First cleanse the bowel with a saline injection. The absorptive power of the rectum is practically 4 per cent., and as is the case in all rectal medication, the dose must be larger than it would be *per os*. I have never seen any untoward results from this method, aside from expulsion of the suppository; but if the nurse is instructed to compress one buttock against the other for a little time, the bowel will retain the suppository, which melts rapidly.

The patient almost invariably finds relief after half an hour and sinks into a quiet sleep, with usually a slight perspiration all over the body. Occasionally the urine will have a greenish tinge—this will be slight in infants and is undoubtedly due to either indican or pyrocatechin. My little patients have never presented hematuria, erythema around the anus, nor epistaxis with this method of administration, besides the stomach is kept uncontaminated and ready for food—the anorexia disappears usually in twenty-four hours, so that a milk diet may be utilized without fear and thus time and strength have been saved for the little sufferer.

204 Hancock Street.

THE MODERN MEDICAL CLINIC.

ITS PURPOSE AND ITS REQUIREMENTS.

By WM. HILLS SHELDON, M.D.,

NEW YORK.

CHIEF OF CLINIC, OUT-PATIENT DEPARTMENT AND INSTRUCTOR IN MEDICINE, CORNELL UNIVERSITY MEDICAL COLLEGE.

Up to a few years ago the standard of work in a clinic was gauged by the quantity of patients treated and not by the quality of the treatment. We are now ready to acknowledge that this standard is wrong and that the modern clinic is not a place where the largest number of persons are treated with the maximum of speed and the minimum of attention, but an institution in which the most advanced results of medical science are applied to the diagnosis and treatment of disease. The time has past when patients can be shot in one door and out the next, receiving, as they pass through, a number, a ticket, and a prescription for compound cathartic pills or rhubarb and soda.

The conditions that exist in the dispensaries today, however, are too well known by those who have worked in them—and who of us has not—to need description here. The problem that now confronts the medical profession is, how are these conditions to be remedied?

The Purpose of the Modern Clinic.—Before any suggestion can be made with a view of solving this problem we must begin with a clear and definite appreciation of the purpose of the modern clinic. It exists for (1) the efficient diagnosis and treatment of disease; (2) the advancement of medical knowledge; (3) the prevention of disease by the instruction of patients in hygiene.

The system, or lack of system, now employed in the large majority of clinics renders the fulfilment of this purpose impossible, for careful diagnosis, research, and the instruction of patients takes time, a great deal of time, and time we have not got. Since, therefore, the present state of the dis-

pensaries is not—to put it politely—conducive to good work, this state will have to be changed, for careful, efficient, and scientific work must be done.

In considering the requirements necessary to each of the three above-mentioned branches of work, I think it will be found that this broad development of the medical clinics will result in benefit, not only to the sick poor, but to the doctors working among them.

1. *The Efficient Diagnosis and Treatment of Disease.*—The two great essentials for efficient diagnosis and treatment are: (a) A sufficient number of doctors to work, (b) the scientific facilities to work with. (a) There will, of course, be differences of opinion as to what constitutes a "sufficient" number of doctors, but I think a conservative estimate should allow one doctor to every six patients in a two-hour clinic. This would enable the physician to spend half an hour each on the examinations of three new patients, and ten minutes each on the treatment of three old patients. For a fair-sized clinic averaging forty-eight patients, a daily staff of eight men would be required, each man working a full two hours a day, and not one hour or one hour and a half. (b) Equal in importance to the necessity of an adequate staff is an up-to-date equipment, for the time has passed when a doctor can be expected to do good work with a persuasive manner, a fountain pen, and a prescription blank.

A Well-Equipped Laboratory is absolutely necessary if a clinic is to be scientifically run, and it should be connected with the department, and be in charge of a skilled laboratory worker and his assistants. Routine examinations of urine for all new patients can thus be made on the spot, and this very often enables the physician to complete his diagnosis at the patient's first visit. Sputum and blood examinations, Wassermann and Widal reactions, and all the modern tests can be made in suitable cases, and such data are essential, if a careful and thorough diagnosis is to be made. Moreover, by situating the laboratory in connection with the medical clinic the clinicians have the advantage of consulting frequently with the laboratory men, and each has the opportunity of correlating the laboratory diagnoses with the physical signs of the patient.

Scientific Instruments of Precision have become of such value to the diagnostician that no clinic can be considered properly equipped without them. Blood pressure cannot be accurately gauged except by a sphygmomanometer, and the sphygmocardiagraph not merely frequently reveals abnormal conditions of the heart which could not be determined by the stethoscope, but also enables the physician to analyze cardiac irregularities.

The venous pressure apparatus offers great possibilities for research, as do other instruments of this kind, and it is not the least part of their value that they direct the attention of the physician to the newer work upon the heart.

An X-Ray Department is a most important adjunct to a medical clinic. It is not merely indispensable in the diagnosis of obscure conditions and an aid to research, but it is also a great stimulus to careful diagnosis, as the *x*-ray photograph shows up any errors in a most impartial and indisputable manner. The advantages of the *x*-ray are too well known to need discussion and I merely wish to emphasize the desirability of employing this apparatus as a diagnostic factor in the medical clinics.

A Mechanico-Hydrotherapeutic Equipment is of the utmost importance, for this method of treatment is of the greatest benefit in various diseases. This is particularly true of chronic joint conditions, as numbers of these patients become cripples simply for lack of this treatment. Some nervous cases, which have been drugged for years without improvement, are greatly helped by hydrotherapy and mechanicotherapy, while in circulatory and kidney diseases its value is well known. Diseases of metabolism and chronic intoxications are more often relieved by this method than by any other.

We are far behind the European clinics in regard to this valuable therapeutic measure. In a city like New York, where there is so much wealth, there should be little difficulty in obtaining the funds necessary to its installation in certain of our dispensaries. I venture to say, moreover, that if this equipment were more generally installed the osteopaths and others would soon be forced out of business. Doctors have shaken public confidence by promiscuous drugging, and they must restore it by the intelligent use of other therapeutic agents.

An Accurate System of Filing and Indexing Histories is an important point of equipment, for all the time spent upon patients in the dispensary is absolutely wasted unless careful histories are taken and filed in such a manner as to be easily referred to. These histories are of vital importance during the treatment of the case, and when it terminates they are of great value from the standpoints of research and statistics. It is, therefore, necessary that they should not merely be carefully preserved, but be easy of access.

I should like to suggest to those who may be contemplating new indexing systems, that the vertical filing system is infinitely superior to the horizontal system, and gives twice the space at one-eighth the cost. The using of large single-sheet histories still further economizes space; these should be filed by number and not by name, as they are then more quickly referred to.

The system of nomenclature employed by the Bellevue and Allied Hospitals is excellent, and the result of an exhaustive study into the subject on the part of the authorities. A uniform system of indexing and nomenclature among all clinics is greatly to be desired, and would put an end to one of the most insidious temptations that beset a chief of clinic, *i.e.* to improve whatever system happens to exist in his dispensary.

2. *The Advancement of Medical Knowledge.*—It is of the utmost importance to encourage research in the medical clinic, for not only does the physician have the broadening influence of the work itself, but it also does away with the deadly monotony of clinic routine. In the medical clinic of Cornell University we have put in practice a system of division and specialization of work that has proved satisfactory in every way. At the present time one physician is making a specialty of gastrointestinal diseases and doing the necessary analyses, assisted by the laboratory; another is making a study of occupational diseases; a third has taken up diseases of the thyroid; a fourth is interested in *x*-ray diagnosis, cooperating with the *x*-ray department, and studying also medicosurgical conditions; and another is working on diseases of the heart. In this way each physician studies those cases in which he is particularly interested and the special knowledge that he acquires is of considerable value in consultations over unusual cases.

3. *Prevention of Disease by the Instruction of Patients in Hygiene.*—The highest ideal of the medical profession is not simply to treat and cure disease, but to prevent disease, and it is the duty of the medical clinic, just as it is the duty of the private physician, to teach patients how to avoid sickness by the observation of hygienic rules. A great responsibility rests upon the medical clinic in this respect, inasmuch as the patients with which it deals are the poor and uneducated, who know nothing of the necessity for proper ventilation, food, exercises, and cleanliness, or their relation to the laws of health. What is more, a large proportion of the diseases from which dispensary patients suffer are brought about, in the beginning, by ignorance of these laws; and I believe that in the future much may be accomplished by persistent education in hygiene.

In a previous article* I have dealt with the advantages, to both patient and physician, of printed forms of instructions. By this method much time is saved and better results secured than when the directions are given verbally. In the Cornell Medical Clinic we have six leaflets, entitled "Rules for General Health," "What to do for Constipation," "Directions for Persons with Heart Disease," "Directions for Persons with Kidney Disease," "Instructions for Persons with Chronic Joint Disease," "Instructions for Persons Exposed to Industrial Diseases, Especially Lead." We intend to add to these leaflets from time to time. We have also given out a dietary containing a list of cheap, nourishing foods, with instructions how to cook them properly.

The first obstacle to be overcome in the betterment of clinic conditions is the difficulty of systematizing and coordinating the city dispensaries. It has been suggested that the city be divided into districts, each district having its own clinic, and that the patients in each district be required to attend the district clinic. This would be a great economy in time and labor, for both the patient and the doctor. Under the present system patients wander from clinic to clinic, just as they please, consuming the attention of the doctors, various boxes of pills, and many car fares. It is a most unprofitable arrangement for all concerned, and the sooner it is changed the better. If, moreover, a social service nurse were attached to each clinic to investigate the circumstances of all new patients, the element of grafting patients could be largely done away with, and the number of persons attending public clinics greatly diminished. This would relieve the overcrowding of the dispensaries and enable the physicians to give proper attention to those who really need free medical attention.

The difficulty of obtaining the right kind of men to work in the clinics is equally grave. While it is comparatively easy to get men for the eye and ear, nose and throat, genitourinary, and other specialities, there is undoubtedly an increasing difficulty in getting men for the medical clinics. A good many physicians are anxious to perfect themselves in one or other of the specialties, for these offer greater opportunities in private practice as regards both professional and financial success.

There are several causes that are partly responsible for this shortage in the medical dispensaries. One is, that during the past few years there have been more clinics established and fewer students graduated from medical schools. Then again, the laboratories and the Department of Health offer salaried positions which are very acceptable to the young physician.

Lastly, and perhaps most important of all, the clinics themselves are responsible, for they have not kept pace with the precepts of medical education or modern medical thought.

The staff of a clinic is largely made up of young men, newly graduated from medical schools and hospitals. These men, during their years of training, have been imbued with the idea of oding good, scientific work, so that eventually they may contribute something to their profession. These men will not work in the clinics as they are run today, for the clinics offer them nothing; certainly not the opportunity to do good work; still less a salary, and the prospect of advancement is too remote to be a great attraction.

These are the physicians we need, and it is obvious that inducements must be held out to them to attract them to our clinics. Every facility for diagnosis in the way of equipment must be given them, and every effort should be made by encouraging research to make the clinic work interesting and of scientific value.

Apart from these considerations I think it will be found necessary to attach a salary, even if small, to dispensary positions. The expense of medical education is so great, and the cost of living so undeniably high, that the young physician must necessarily favor those positions which pay, rather than those which do not.

784 Park Avenue.

*"Printed Instruction for Clinic Patients," Medical Record, November 11, 1911.

THE PHYSICAL SIGNS OF PULMONARY TUBERCULOSIS CAUSED BY NASAL STENOSIS.

By MARY E. LAPHAM, M.D.,

HIGHLANDS, N. C.

HIGHLANDS CAMP SANATORIUM,

When we find a lack of development in the upper part of the chest because of insufficient expansion of the chest wall and lack of inspiratory force, we urge with great earnestness the necessity for the expansion and development of the lung by means of vigorous breathing. This flat, sunken chest appeals to us at once, and we do not underestimate the importance of correcting the fault by deep breathing. But there are other dangers due to an insufficient transmission of atmospheric force through the nose that are not so apparent, and are far more easily overlooked because the outward signs are not there to suggest the hidden condition. The chest wall is well developed, the breathing is deep, and yet hidden away above the first rib is a spot where the force of the entering air is not sufficient to keep all the air passages open, and so some of them collapse, and an atelectatic area is formed which will sooner or later be invaded by connective tissue and converted into the collapse induration due to stenosis of the nasal air passages.

The collapse of a few air passages in the apex does not cause any physical manifestations. There is no irritation, no cough, absolutely nothing to call attention to the danger, but gradually, as the induration increases, complications occur; dust and bacteria settle out from the blood and lymph currents transporting them, and eventually an active inflammation produces the physical signs of a chronic

fibroid bronchitis that may well be mistaken for tuberculosis.

Until within a year I did not know that such a bronchitis in an apex could be due simply to nasal stenosis. I did not know that loss of strength and weight and appetite, that a bad cough and expectoration, that breathlessness and palpitation on exercise, that night sweats and hemoptysis could all be caused merely by obstructing the free passage of air through the nose. Nor did I know that simply for the same reason the apex could be markedly shrunken, Kronig's field narrowed, and nearly the whole of the upper lobe become dull and infiltrated. During the last year I made two mistakes in diagnosis in consequence of this ignorance.

The first was that of a young woman who had been exposed to tuberculosis for some time in taking care of a relative. She had lost weight and strength. There was a slight cough but no expectoration. The right apex was shrunken; the percussion note was higher; there were wet râles; the breath sounds were suppressed and the expansion of the Alveoli uneven—precisely like an initial stage of tuberculosis when the nodules are still isolated and dry, before the development of collateral edemas in the perituberculous areas. Taking the history and physical signs and the patient's condition altogether, I made the diagnosis of an initial tuberculosis in the apex. There was also a chronic follicular pharyngitis. The vault was stuffed up with a thickened oral lymphatic ring, and the posterior turbinate was enlarged. After these faults were corrected by operation the structural changes in the lungs disappeared and I had to admit that my diagnosis was wrong.

The second case was that of a young girl of thirteen, pale, not strong, not eating well, with daily temperature of over 99°. The family were afraid of tuberculosis, and wanted to be assured that there was no cause for anxiety. There were wet and dry râles over the right apex, and a good deal of irritation down to the second space in front and to the spine of the scapula behind. There were enlarged tonsils, adenoids, and a thickened posterior turbinate. After these were removed the physical signs in the lungs became normal, and the patient improved in every way.

Blumel[1] and Richter[2] have reported cases of structural changes in the apex, associated with such typical tuberculous manifestations that it seemed as if nothing but tuberculosis could be the cause. The patients were weak, there were dyspnea and palpitation on exertion, breast pains, cough, expectoration, night sweats, and hemoptysis. The physical signs were: Prominence of mouth breathing conditions, hypertrophy of lymphatic oral ring, enormous nasal hypertrophy, and no nose breathing. The right lung was affected much oftener than the left, both in children and adults. There was shrinkage of the right apex with a narrowing of Kronig's field, marked dullness and altered breath sounds, from simply slight suppression and uneven expansion, up to catarrhal characteristics, and even bronchophony. The lung was affected down to the second rib in front and spine of the scapula behind. The physical signs were clearly those of a chronic fibroid interstitial bronchitis, absolutely typical of tuberculosis, but which disappeared by the correction of the nasal faults and establishment of free breathing through the nose.

Why should nasal obstruction cause atelectatic areas in the apex that go on to collapse induration and chronic fibroid bronchitis? Why is it that only the apex is affected in this way? It is because it is more difficult to fill the air passages and alveoli in the apex than it is those of the rest of the lung. It is harder to get air up into the apex and to keep the apical air passages open, because there are no muscles of inspiration and no chest wall to expand and pull the alveoli open. How do we get air into and out of the lungs? We enlarge the thoracic cavity by pulling out the chest wall, and because the lung is not large enough to fill the thoracic cavity it stretches as it follows the chest wall, and in stretching the walls of the alveoli are pulled apart. Then the pressure of the atmosphere upon the column of air, reaching from the nose to the alveoli, forces it to follow these retreating walls; the column of air sinks until the alveolar walls remain stationary, and then inspiration is over. Inspiration is the removal of the support to the base of the column of air reaching from the alveoli to the nose by pulling the alveolar walls upon which it rests away from it, so that the pressure of the atmosphere transmitted through the nose forces the air column to instantaneously follow the retreating walls of the alveoli. When the distention of the alveoli is accomplished the chest wall collapses, the elastic fibers in the alveoli contract, and the column of air is driven up again. The length and diameter of the column of air moved in respiration are out of all proportion to the base upon which it rests. It is so trifling and insignificant that it may be said to be all base. The diameter is only that of the trachea, while the base consists of millions of alveoli, which, if spread out, would cover approximately 100 square feet. Small wonder that the slightest change in the base affects the column intensely, and that, *per contra*, the base is only with difficulty affected through the column.

Inspiration is the pulling open of alveolar sacs because the lung is not large enough to fill the thorax, and when it follows the chest wall it has to stretch, and so the walls of the alveoli are pulled open. Those alveoli that are most pulled upon by the expansion of the chest wall will be best filled by the descending column of air, and this occurs where the motion of the chest wall is greatest, where the thoracic cavity is most enlarged, and where the lung has to stretch most, which is in direct proportion to the distance from the first rib. The thorax hangs from the first rib, which is nearly rigid. From the second rib down to the lowest ones the expansion and the enlargement of the thoracic cavity progressively increase, so that we have more distension of the alveoli and better inspiration the farther away we get from the first rib. More than this, the distention of the alveoli is greatest upon the surface of the lung immediately beneath the pleura. The pull of the chest wall is not felt very deeply within the lung, so that those alveoli lying next the pleura breathe most, and those within the central portions of the lung hardly breathe at all. The functional activity of the alveoli depends upon their walls being pulled open, and to accomplish this we have the powerful muscles of inspiration and the expansion of the chest wall. But what mechanism is there above the first rib? There is no way to pull these apical alveoli open and they have to depend upon changes of pressure transmitted from below. The inspiratory pressure filling the apical alveoli is secondary and indirect. When the air column is driven downward it forces some air on up into the apex, but with nothing like

the force that it presses into the air passages farther down. If the force of atmospheric pressure is destroyed by preventing its free transmission through the nose, the transmitted pressure may not be great enough to distend equally all the passages in the apex, and if any one of them fail to obtain their due supply of air those that are better filled will press against them, and, lacking sustaining support from within, they will be crushed together and atelectatic areas develop. At first this is not permanent, but repetition gradually establishes it, and from atelectasis some lobules go on to collapse induration. The stasis of blood and lymph encourages an overgrowth of connective tissue in these collapsed areas, and when dust and bacteria are deposited out from the slowed currents of the blood and lymph circulation there results a chronic fibroid bronchitis or a streptococcic softening or other structural changes corresponding to the irritant. Above all, we have a good preparation for the growth of tubercle bacilli.

Why do these collapse indurations only occur at the apex of the lung? Because this is where atmospheric pressure is least able to keep the air passages open. It would seem as if breathing through the mouth would transmit atmospheric pressure thoroughly enough to keep these alveoli open. Collapsed areas occur in the apex even with pronounced mouth breathing. The demand for oxygen sufficient for respiration is supplied, but the pressure is not adequately transmitted to the apex by mouth breathing, because it disturbs the fine mechanism upon which perfect respiration depends. There is no doubt of the rapid entrance of air. It is quite possible that it is too rapid and that the alveoli farther down, where the pull of the chest wall is greatest, are filled relatively long before the apical alveoli can get their share. General alveolar pressure being equalized over the greater portion of the lung, expiration follows before the inspiratory wave has reached the apical alveoli. In order for the inspiratory wave to have sufficient time to reach these apical alveoli, we must have the prolonged action of nose breathing, which has the same effect upon the distribution of air pressure to these alveoli that the diaphragm of a camera has to the diffusion of light rays. A small aperture enables the light rays to slowly and adequately affect the circumference, while a large aperture affects the center long before the periphery. Besides the lack of cleansing, warming, and moistening the air, mouth breathing must have this sin laid to its charge: It fails to expand the apical alveoli and to maintain the force of the blood and lymph circulation through the paravertebral region.

The relation of nasal obstruction to asthma is fully admitted. Is there an equally intimate connection between nasal obstruction and tuberculosis of the apex? Finding some form of nasal obstruction so frequently in my cases of tuberculosis, I have come to believe that this is so. Nasal obstruction disturbs the mechanism of respiration in the weakest part of the lung, *i. e.* the right apex, and causes symptoms and physical signs that are absolutely typical of tuberculosis. It may be that the establishing of good, free breathing through the nose may not only alter the conditions threatening the physical and mental development of the patient, but also lessen his chances for a tuberculous invasion.

In all cases of tuberculosis of the apex associated with nasal obstruction we should remember that there is danger of diagnosing the chronic fibroid bronchitis of collapse induration as tuberculous, and, therefore, reserve our decision until the effect of correcting the nasal faults is observed.

Since a comparatively slight hindrance to the transmission of atmospheric pressure through the nose may cause the formation of atelectatic areas in the apex that go on to collapse induration and chronic fibroid bronchitis, we should be more careful than ever to see that our patients have good, free breathing through the nose.

THE ICE-BAG AND APPENDICITIS.

By A. M. FAUNTLEROY, M.D.,

SURGEON, U. S. NAVY.

To advance an idea at this late date with reference to the treatment of appendicitis seems rather presumptuous in view of the enormous amount of literature on the subject, and the only excuse the writer has to offer is that there seems to be at least one point in the varied pathology of this organ which has been overlooked or for lack of certain data not recorded. The idea to be advanced is in the nature of a warning with reference to the more or less common use of the ice-bag as a part of the preoperative treatment in this condition and is the result of observations in a series of seventy cases which have come to operation during my surgical service on the U. S. Hospital Ship *Solace*.

In this series sixty per cent. of the cases were either gangrenous, or about to perforate, or there was pus formation. The ice-bag had been used in about fifty per cent. of all the cases, as noted in the health records of the patients, prior to being sent to the hospital ship for operation. In each one of these cases a careful white count (sometimes two) was made immediately upon admission and recorded in the health record. The cases were as promptly operated upon as their condition seemed to indicate and in cases where the ice-bag had been used, sometimes one day and sometimes two days prior to operation, there was a noticeable lack of effort on the part of nature to wall off from the rest of the abdominal cavity, the appendix which was frequently very much congested, gangrenous, or perforated. It was also noted in these ice-bag cases that there was a suprisingly low white count when one took into consideration the condition found in the abdomen at the time of operation. From eight to eleven thousand white cells was the rule in these ice-bag cases when one would be justified in saying that the pathological condition warranted a constitutional reaction of between twenty and thirty thousand leucocytes or even higher. On the other hand, in those cases in which the hot water bag or morphine had been used prior to operation (the ice-bag not being used at all) the white count corresponded to what one would expect from the condition encountered in the abdomen and, in the type of cases mentioned, there was also a distinct walling off of the acutely inflamed or gangrenous appendix from the general peritoneal cavity, showing that Nature had been able to use successfully all of her forces in localizing the process.

In view of these observations, I am forced to conclude that the ice-bag is distinctly harmful in appendicitis and should never be used. Undoubtedly the ice-bag has been used with the idea of relieving pain and spasm, but if in relieving these symptoms

it does harm it should be discarded in favor of some other remedy which is equally efficient along these lines and which is not detrimental to the patient.

There is no surgeon of any experience who is not convinced of the soundness of the principle which underlies Bier's hyperemic treatment, and this being accepted there is every reason to discard the ice-bag since the latter brings about a condition directly opposite to what we strive to accomplish in carrying out this principle in the treatment of inflammation involving the peritoneum. While undoubtedly in most cases it relieves pain it also decreases the hyperemia for the time being, thereby driving away, so to speak, the protecting leucocytes from that quadrant of the abdomen and eventually bringing about a condition of stasis and consequent devitalization which is doubtless analogous to the action of cold in connection with the condition commonly known as frostbite. The pain of appendicitis is due to the local engorgement and consequent stretching of the peritoneum in the neighborhood of the appendix and its relief by the application of cold is very probably due to the numbness or lack of sensation on the part of the peritoneum brought about in practically the same manner as the familiar numbness of a frostbitten ear or toe. It would also seem that the application of cold and consequent numbing of the peritoneum so deludes Nature that she does not call out the reserve leucocytes and hence one valuable point of information is suppressed, namely, leucocytosis, the degree of which in connection with other symptoms is a valuable indication as to whether or not immediate operation is necessary.

The writer is well aware of the difference of opinion which exists among medical and surgical men with reference to the use of the ice-bag in appendicitis and it is not claimed that the opinion expressed in this paper is original, but as far as can be learned by conversing with a number of prominent surgeons, who are also authors of textbooks, these particular points with reference to the leucocytes and the findings at operation have never been brought out and it is at the urgent suggestion of these surgeons that this paper is submitted with the hope that at least a discussion of the subject will be precipitated and others will be led to record and publish their findings.

The above series were all young and active men between the ages of twenty and forty. A very small percentage (5 per cent.) had a history of previous attacks. The invariable rule in the Navy is to operate in every case in which a diagnosis is made, so that practically recurrent attacks can be ruled out except in the few who gave a history of trouble in the right iliac region prior to enlistment. They were also young men whose general health had been excellent prior to admission and in whom there was every reason to think that there would have been a sharp systemic reaction in case of any serious trouble with the appendix.

U.S.S. "SOLACE."

The Effects of Depancreatization.—H. Labbé studied the effects on the general nutrition of the dog of partial resection of the pancreas. When subjected to conditions giving rise to an acid intoxication the animal is capable of eliminating an excess of ammonia, like the normal dog. This would show that the functional activity of the liver is, if at all, but slightly affected. The production of urea is the same as in the normal animal. These results are not entirely in accord with those of histological examination, which show a certain degree of degeneration of the hepatic cells, which is probably the result of previous intoxications.—*Revue de Médecine.*

Neuropathies and Psychopathies of Genital Origin.—L. M. Bossi advocates the gynecological examination of every woman who comes before a court of law for the commission of a crime, whether it be stealing, or a crime of violence, or attempted suicide, and that it be ascertained whether she has any genital anomaly before she is tried or condemned. In the same way every woman who becomes insane should go through an examination for the presence of utero-ovarian anomalies before she is sent to an insane asylum. If she has genital troubles she should be treated and will often recover entirely. It is not the serious lesions like cancer, fibroma, and peritonitis that cause alienation, but the slow, insidious infections, and the displacements that render the life of the victim insupportable, and make her unable to do her work or mix with society, that by the presence of a slow infection and the symptoms of autointoxication affect the nervous system. The author cites cases known to him and treated by him in which kleptomania occurred only at the menstrual period, which with its added nervous irritability made a criminal of the woman. Many violent crimes are the result of such a condition eventuating in a sudden access of insanity from some slight excitement occurring at a neuropathic period. It is the duty of physicians to recognize these facts and endeavor to educate the public so that these persons should receive proper gynecological treatment, instead of being incarcerated in prison or committed to asylums. Under proper treatment many a hysteric, epileptic, or insane woman will recover from both her uterine and her mental disease.—*Revue Mensuelle de Gynécologie, d'Obstetrique, et de Pédiatrie.*

Genital Hypernephromata in Women.—H. Alamartine and G. Maurizot state that abberrant suprarenal capsules are found in connection with the tissues of the broad ligaments in women, as well as in the neighborhood of the pancreas and liver; they are seldom seen in men. The suprarenals are derived from the celomic epithelium of the internal face of the mesonephron. Masses of cells become separated and form separate accessory glands. Overgrowths of the accessory suprarenal glands are rare in women; they are peculiar in that they are enucleable, but show malignancy. They cannot be diagnosticated before the abdomen is opened, but when they come into view may be immediately recognized by their characteristic structure. They are seen either in young immature girls, or in women between fifty and sixty years of age. The cytological characteristics of the cells are marked, and especially the contents of fat in them. Obesity accompanies their presence. Circulatory disturbances result from hypersecretion and the production of suprarenal hormones, causing slowing of the pulse and hypertension.—*Revue de Gynécologie et de Chirurgie Abdominale.*

The Incidence of Streptococci in Urine.—H. W. Crowe states that two distinct cocci occur in the urine with comparative frequency, and both are probably streptococci. When certain symptoms suggesting slight toxemia are associated with chronic rheumatism, streptococci may usually be found in the urine. Vaccine treatment in such cases is remarkably beneficial. In acute rheumatism the organisms described are usually absent from the urine. The isolation of the organisms and the preparation of vaccines are greatly facilitated by the use of neutral red egg medium. In general, if one is justified in drawing any conclusions from the small number of cases studied by the author, streptococci are met with in the urine more frequently in slight ailments than in severe diseases. The latter believes he has made out a case for systematic cultural examination of urine, whether attention is directed thither by symptoms or not, with the likelihood of its proving a fruitful field, both from the pathological and the therapeutic standpoint. —*Proceedings of the Royal Society of Medicine.*

MEDICAL RECORD.

A Weekly Journal of Medicine and Surgery.

THOMAS L. STEDMAN, A.M., M.D., EDITOR.

PUBLISHERS

WM. WOOD & CO., 51 FIFTH AVENUE.

See fourth page following reading matter for Rates of Subscription and Information for Contributors and Subscribers.

New York, August 3, 1912.

THE MEDICAL REVOLUTION IN GREAT BRITAIN.

THE passage of the National Insurance Bill of Great Britain is a matter of supreme importance to the medical profession. The crisis has been reached and the medical practitioners have decided they will not be bound down by the provisions of the act. At a special plenary session of the British Medical Association at Liverpool on July 23 the resolution passed a few days before to the effect that the members of the association refuse to act under the present conditions of the bill was passed with enthusiasm. Thus the British government is placed in the position of being unable to give the chief benefits promised to the people by the act. Sir James Barr, the president of the association for 1912, who is notorious for his outspokenness, went so far as to characterize the insurance act as "the most gigantic fraud ever perpetrated on a confiding public since the days of the South Sea Bubble."

The scheme has been severely criticised from various standpoints, but the proposed treatment of the medical profession is that which has caused the present deadlock. A short sketch therefore of its main features, so far as the profession is concerned, will not be out of place. To anyone who is familiar with or even fairly cognizant of the conditions of the poor in the big cities of Great Britain a plan which seems likely to better their lot will find universal favor. The scheme of national insurance has been called great, and from many points of view it undoubtedly is great. In the first instance, when Mr. Lloyd George suggested the scheme his suggestion was received with acclamation by men of all shades of politics. Some indeed have decried the plan, urging that it tends to pauperize the working classes and to perpetuate the unfit rather than to bring about lasting improvement to the race. On the whole, however, men of all creeds and political opinions in Great Britain hailed with fervor any method which was calculated to amend or ameliorate the existing state of affairs. Consequently the British statesman appeared to open his new campaign under most favorable auspices and to have the opportunity of deeply engraving his name on the scroll of fame as one of the greatest benefactors of his race. How, then, has it happened that instead of this glorious consummation the act, after its provisions were known, became a source of contention and dispute almost without parallel in the history of English legislation? We will not attempt to deal with other parts of the bill open to criticism, but will confine our comments to those which intimately affect the medical profession. The benefits of the Insurance Act from a medical point of view are: (1) Medical treatment with drugs, etc., throughout life; (2) pay during incapacity from sickness; (3) a maternity allowance; (4) some provision for the treatment of tuberculosis, principally by means of sanatoriums. The essential of the scheme then may be said to be an adequate command of competent medical skill, necessarily implying for its successful carrying out the earnest cooperation of the medical profession. What were the inducements offered to the medical practitioners in order to secure this cooperation? The pay offered for the services of the profession was $1 a year per head with an allowance of 50 cents a year for drugs, etc. The scale of remuneration is said to be somewhat higher than that in club practice in Great Britain, but this extra remuneration is altogether outweighed by the loss of private practice which must follow as the result of the extension of medical benefits from 6,500,000, the number now served by contract, to 14,750,000, many of whom are well to do and able to afford a fair fee for medical services. Again, the reduction of income is intensified by the fact that, unlike present club practice, which is confined to selected lives and healthy persons, those benefiting by the act will comprise all sorts and conditions of men, women, and children and will accordingly bring about a totally different kind of practice. Not only, however, does the British practitioner face inadequate pay and a probable considerable money loss, but what he resents most bitterly, the act places him in the hands of the "approved societies." He has already had such experience of the ways of these societies as to dread his position if the provisions of the bill are rigidly enforced.

The British Medical Association has laid the following demands before the Chancellor of the Exchequer: (1) An income limit of $10 a week; that is, a person receiving beyond that amount would not be eligible for the benefits under the act. (2) Free choice of doctor by patient. (3) Medical and maternity benefits to be administered by State insurance committees and not by friendly societies. (4) Two dollars and ten cents to be the minimum capitation fee, not including extras and medicine. To all of these apparently just demands Lloyd George has given a *non possumus* and has moreover treated the medical men throughout the negotiations with much contumely and has endeavored to prejudice the profession with the community as standing in the way of the public weal, swayed solely by selfish interests. Earning a capitation fee of $1 a year with 50 cents added for drugs, etc., in order to gain the barest of livings the medical man must do an amount of work which is out of all proportion to the recompense. Judging from the results of the Insurance Act of Germany, the average earnings of a medical man under the British Act would be between $1,000 and $1,500 a year. When it is considered that the medical education of the physician is the longest, hardest, and most costly of any technical

education, that his position as a physician entails great responsibility, the assurance of Mr. Lloyd George in expecting him to become absolutely the servant of the public at a remuneration of less than $1,500 a year is nothing less than remarkable. In Great Britain this is the more glaring seeing that the British House of Commons has voted recently to each of its members the sum of $2,000 a year for services which require no special education to perform adequately and which are light and to a great extent perfunctory.

Contract practice is everywhere unsatisfactory not only to the physician but to the general public. A laborer is worthy of his hire, and if he be not recompensed for his services properly he does not, nay he cannot, fulfill his duties as they should be fulfilled, and therefore in the long run if the doctor be starved and compelled to lose his self respect every one concerned must suffer. It would appear that the British chancellor has promised more than he can accomplish and the sooner he is brought to an understanding that such is the case the better will it be for the country. One thing is certain, that the outcome of the struggle between the British government and the medical profession must profoundly affect medicine in all its branches for good or evil, and this being so the matter closely concerns the medical profession of this country. It is, in short, a valuable object lesson for medical men in all parts of the world. A notable feature of the situation is the sane, temperate, and dignified manner in which the question has been discussed by the leading medical journals of Great Britain—in striking contrast to the heated appeals to party and class prejudice made by politicians responsible for the introduction of the measure and by the lay journals obviously interested in substantiating and popularizing their statements. The principle embodied in the scheme is excellent, but the manner in which the principle is being exploited to the detriment of a self-sacrificing body of men and to the ultimate hurt of the community at large savors of low political ideals. The progress of the battle will be watched with absorbing interest by physicians here and the hope may be expressed that even yet a compromise will be reached honorable to those directly interested and for the good of the people at large.

SALVARSAN IN THE TREATMENT OF RABIES.

THE season of supposed maximal prevalence of hydrophobia has arrived. In spite of municipal ordinances providing for the muzzling of dogs, there are reported almost daily in the public press instances of individuals bitten by rabid animals. A certain proportion of these individuals who will not take early advantage of the Pasteur treatment will eventually enter the hospitals as hopeless cases of fully developed hydrophobia. Possibly in these cases a gleam of hope still exists, if the results recently obtained by R. Tonin (*Il Policlinico,* July 14, 1912) in the treatment of a case of hydrophobia by means of salvarsan should be verified by other observers.

The case was one of a girl thirteen years of age, treated at the Antirabic Institute of Cairo, Egypt. She was brought to the Institute twelve days after she had been bitten by a dog presumably rabid. The usual course of treatment by means of inoculations was carried out for a period of fourteen days, at the end of which time the child began to suffer from general malaise, headache, and slight fever. These symptoms grew more intense and were supplemented by a difficulty in swallowing liquids and solids. At this time, four weeks after having been bitten, the child was admitted to the Italian Hospital. On examination she presented a picture of great anxiety with dyspnea and laryngopharyngeal spasm. This was aggravated by the sight of water or by spraying the latter upon the patient's skin, or even by lightly blowing upon her face (aerophobia). There were also intense headache, general hyperesthesia, and a heightened temperature. The outcome was considered hopeless and death was expected in from four to six days. Tonin, basing his action upon the supposed protozoal origin of rabies, and upon the parasitotropic property of salvarsan, administered this drug to the child intravenously in a dose of 30 centigrams. There then occurred the usual symptoms resulting from the injection of salvarsan —a rise of temperature, an acceleration of pulse, and repeated vomiting. At the same time the symptoms of hydrophobia began to improve, so that by the following morning there was little difficulty in swallowing, and the anxiety and hyperesthesia had markedly diminished. The improvement was so striking that the author began to question the original diagnosis, when on the twenty-seventh day the child gave evidence of a paresis of the lower limbs, and formication in both feet. There then developed the symptoms of an ascending myelitis: paresis of the muscles of the back and of the upper part of the arms; involvement of the bulbar centers as manifested by rapidity of pulse and respiration and by frequent vomiting; intense occipital headache; abducent paralysis; and rigidity of the neck muscles. In spite of these grave manifestations of meningomyelitis and encephalitis, the patient recovered completely, after a course of treatment including the administration of digitalis, iodides, camphor, and ascending doses of strychnine, and the employment of hot baths.

The author presents a rigid analysis of the above case, disposing in turn of all the alternative theories that might be advanced to account for the extraordinary recovery. He excludes the possibility of a nervous or false hydrophobia. The child had never manifested any nervous symptoms, there was no disturbance of sensation, and there were no hysterogenic zones. Moreover, in false hydrophobia the symptoms are largely and almost exclusively psychic and do not include these associated with an ascending myelitis. In explanation of the immediate improvement following the use of salvarsan, and then the secondary onset of paralytic symptoms, the author suggests that the drug in destroying the microorganisms had set free their endotoxins, which were then responsible for these later lesions. He

cites the remote analogy of the postdiphtheritic paralysis that may occur even after the effective administration of antitoxin. Another possibility that suggested itself was that the original antirabic inoculations might have been responsible for the symptoms of rabies that developed in the patient. In an extensive experience with this method of treatment the author had seen two instances of transient irritation of the spinal cord following the inoculations, but never any evidences of hydrophobia.

The history of the above case naturally does not prove that salvarsan is a specific in rabies, but the results obtained were sufficiently impressive to justify the use of this drug in cases that have not submitted to the preliminary antirabic inoculations, and in which a lethal outcome is almost certain. At any rate there is some basis for the hope that rabies may be included among the diseases, such as syphilis, relapsing fever, and frambœsia, in which the parasitotropic virtues of salvarsan or of its derivatives have been amply demonstrated.

HEMOPHILIA.

At the present time the subject of heredity is one that fills with hope the mind of the amateur eugenist. Those who know most concerning the matter are, perhaps, the most sceptical as to the practicability of the application of its principles to the human race in the prevention of disease. On the other hand, those who possess a superficial knowledge of the question discourse glibly of the regeneration of mankind mentally and physically by judicious breeding. A moot point, and one which requires a great deal of further investigation before an agreement is reached, is with regard to the diseases which are inherited. Until this question is settled far more definitely than it is now, it is somewhat idle to attempt to state who shall mate and who shall not mate. There are some diseases which obviously should be a bar to marriage, but these are few.

In hemophilia inheritance is certainly a very potent factor, indeed, all-important. The disease is rare, but from the standpoint of heredity extremely interesting. As Sir Thomas Oliver writes in *The Practitioner* for June, 1912, the disease is an affection of the middle layer of the blastoderm, but how the mesodermal defect originates and what it really consists of it is impossible to say. The pathology of hemophilia has yet to be written. It is generally allowed that in the thin and fragile condition of the walls of small blood-vessels and in the altered composition and impaired coagulating power of the blood is to be found the explanation of many cases of persistent hemorrhage. Since it is from the leucocytes of the blood that the ferment comes which encourages clotting, it is useful to know that in male "bleeders" as well as in their mothers and sisters, there is a deficiency of leucocytes, especially of the polymorphonuclear type. It is then to the subnormal number of leucocytes that must be attributed, in the first instance, the defective coagulability of the blood. As Oliver points out, however, it is not that the blood does not coagulate, but that notwithstanding the presence of a clot, blood still oozes from underneath it as if the tissues were not supplying their quota of fibrous ferment, or as if the clot itself did not undergo those physical changes in association with adhesion of the walls of the blood-vessels which lead to blocking of the same. Experimental evidence seems to show that in an altered constitution of the blood is to be found the explanation of the immediate bleedings in hemophilia.

The main interest of this uncommon affection lies in the fact that it is inherited and in the manner of its transmission. Women of a bleeding stock transmit the hemorrhagic diathesis mainly to male offspring. Males exhibit but do not transmit the tendency to bleed. Plate, in the work, "Hérédité Gynephore," shows how the influence of sex determines whether life shall be brought to a premature close or not by antenatal conditions. Plate includes in "gynephorous heredity" a mode of transmission characterized by the transmission of disease by females apparently normal to half of their male descendants, while in the female offspring the disease is concealed in a latent form. In this, as in hemophilia, the females seemingly healthy play the rôle of transmitters. Certain animal experiments, the results of which were reported by Federley to the Fourth Congress of Genetics, would seem to prove that there is in the organism of the female some inherent specific sexual disposition which not only confers protection but also the power of rendering latent within herself certain genetic tendencies which become actualities in her male descendants. There is, however, much yet to be learned regarding hemophilia, and from the point of view of heredity the subject may be recommended to eugenists and mendelists as a fitting one to investigate.

ZOSTER.

The occasional occurrence of this disease in epidemic form, the constitutional disturbances accompanying it, the associated glandular enlargement, and the degenerative changes that have been demonstrated in the posterior spinal ganglia, all point to an infectious agent as being responsible for the affection. Confirmatory evidence is afforded by the fact that rarely does an individual suffer from a second attack. Furthermore the study of atypical forms of the distribution of the eruption indicates the operation of some general agent. J. Minet and J. Leclercq (*Revue de Médecine*, February 10 and March 10, 1912) made a special study of these atypical cases, which vary all the way from a zoster without any eruption to one in which the eruption is widely distributed. There are the abortive forms in which the eruption does not go beyond the vesiculopapular stage; the forms with a double, bifurcated, or trifurcated eruption; the instances of bilateral, symmetrical eruptions; and the double nonsymmetrical, the multiples, and the aberrant forms. Many dermatologists of large clinical experience have never seen a case of bilateral symmetrical zoster, nevertheless forty-three cases have been reported in the literature. The eruption may be simultaneously symmetrical, or after a normal evolution for several days on one side, it may appear in exactly the same form on the other side and at the same level of the body. It may consti-

tute a veritable belt about the body; this occurs more frequently on the face and on the thorax. Contrary to the views of the older writers, the prognosis in these cases is no worse than in simple zoster, although the duration of the disease may be longer and the general reaction may be more intense. Only one fatal case has been reported, and in this instance the lethal outcome was the result of a secondary infection.

Stigmata of Degeneration and Radiography.

That radiography should be able to extend our knowledge of degenerative stigmata is readily apparent when we bear in mind how largely these concern the osseous system and teeth. Radiograms should readily bring out asymmetries. Naturally stigmata of degeneracy may be associated with actual disease of the bones, as in rachitis or syphilis. At a session last spring of the Society of German Physicians of Prague (*Berliner klinische Wochenschrift,* June 24) Lissau demonstrated an instructive example. Two brothers aged 7 and 9 had no lower and but two upper incisors. The latter were pointed like those of carnivora. The *x*-ray showed that the missing teeth had been retained. Had they grown, however, the denture would have been defective. The rays also showed that the bones, especially those of the skull, were abnormally thin, senile—a sure mark of degeneracy. The skin was thin with no fatty content, the hair lusterless. The whole picture seemed to be one of a vice of first conformation which had involved by preference all the ectodermal organs.

News of the Week.

Plague on the Increase.—New cases of plague have been reported in both Porto Rico and Cuba, and the efforts of the health authorities are being directed toward cleaning up the towns and exterminating the rats. Assistant Surgeon Creel, in charge at Porto Rico, has been given an additional surgeon and three inspectors to be used in examining freight to be shipped to the United States. Large forces of rat poisoners and rat catchers are at work and 500 rats are being examined daily. No cases of the disease have appeared in Trinidad and vessels leaving Port-of-Spain are given clean bills of health. The United States Treasury Department has ordered that vessels from ports in South America and the West Indies, Africa, Russia, China, India, and the Pacific Islands, while lying in United States ports shall have all lines or hawsers leading to wharves or shore protected by rat guards and that all gang planks shall be raised at night unless men be placed near by to destroy escaping rats.

Plague Rats Found in American Ports.—After hundreds of negative examinations of rats had been made during the past few weeks one rat carrying plague bacilli was found in New Orleans on July 27 and one in Philadelphia on July 29. The city health officers of both places have issued statements to the effect that while there is no cause for alarm the fight against the rats will be continued until they are exterminated.

Lister Memorial.—Plans are being made in London for the establishment of a memorial to the late Lord Lister. The memorial will probably take the form of a monument in Westminster Abbey, and the foundation of an international prize in surgery or of fellowships in research in scientific centers in England and abroad.

Decrease in German Births.—The perilous decrease in the birth rate in Germany will, it is said, shortly be the subject of official inquiry. The government announces that the fall in the rate has been almost constant from 1876 when it was 42.6 per 1,000 to 1911 when it was 30.7. It is stated that the falling off is much less marked in Roman Catholic than in Protestant communities.

Medical Society of the Missouri Valley.—The twenty-fifth annual meeting of this society will be held in the city of its birth, Council Bluffs, Iowa, on September 5 and 6, 1912, under the presidency of Dr. J. M. Bell of St. Joseph. Those desiring to present papers should send their titles to the secretary, Dr. Charles Wood Fassett, St. Joseph, Mo., before August 1 with abstracts not later than August 10.

Wood Alcohol Poisonings.—The New Jersey State Board of Health has just brought to a successful finish a campaign for the enforcement of the pure food law, in which hundreds of gallons of liquors and cordials having wood alcohol for their base have been seized and dumped into the sewers. The product was found in the possession of Italian tradesmen and the crusade was started by the Italian Consul in New York, who appeared before the Department of Agriculture with five of his countrymen who had been poisoned by the fluid, two being blind and the three others in a serious condition. Investigation showed that a wine blending and importing company in New York had been handling the stuff and that it had been largely used in the Italian colonies at weddings and funerals.

Dr. Bevan Resigns.—The resignation of Dr. Charles F. Bevan as dean of the College of Physicians and Surgeons of Baltimore, which office he had held for ten years, was announced recently. Dr. William F. Lockwood, professor of the principles and practice of medicine, has been elected to succeed Dr. Bevan.

Dr. Josephus Arthur Wright of Towson, Md., has been appointed superintendent of the Sydenham Hospital of Baltimore, succeeding Dr. Robert A. Warner.

Iowa State Boards.—Dr. Albert De Bey of Orange City, Iowa, has been elected president of the Iowa State Board of Health, and Dr. T. U. McManus, president of the State Board of Medical Examiners. Dr. G. H. Summer of Des Moines has been elected secretary.

To Visit Hospitals Abroad.—Dr. George O'Hanlon, superintendent of Bellevue and Allied Hospitals, New York, accompanied by Dr. M. S. Gregory, resident alienist at Bellevue Hospital, sailed from New York on July 24 with the intention of inspecting the hospitals in Europe.

Prof. Ludwig Pick.—The American students of Professor Pick, of whom there are about six hundred, will tender him a complimentary dinner on Saturday evening, November 16, on the occasion of his visit to New York. Particulars may be obtained from Dr. Charles Goodman, 969 Madison avenue, New York. Professor Pick, as has already been announced, will deliver the Cartwright Lectures of the Association of the Alumni of the College of Physicians and Surgeons early in November.

Dr. A. M. Fernandez-Ybarra, formerly of New York City, has been appointed physician and surgeon of the Spanish Club Sanatorium of Tampa, Fla.

Dr. Clifton A. Gardner of the New York Post-Graduate Hospital is reported missing. He left the

hospital on the afternoon of July 23 to visit an outpatient and has not been seen since. He did not visit the patient. Dr. Gardner was 27 years old, a graduate of the University of Pennsylvania in 1911, and had been ten months on the hospital staff.

Hospital Cost.—That the high cost of living generally is affecting the cost of hospital maintenance is the complaint of the superintendent of the Johns Hopkins Hospital, Baltimore, in his report just issued. The cost of caring for patients is greater at the Johns Hopkins Hospital than elsewhere, and the expenditures during twenty-two years have amounted to more than $5,000,000, while the total gross receipts have been only about $2,000,000. Sixty per cent. of the hospital's patients have been in the wards under free treatment.

Brownsville Hospital.—The Brownsville and East New York Hospital has purchased as a site for a Jewish hospital fifteen lots in Brownsville on Avenue C between Rockaway Parkway and East Ninety-eighth street. Plans are being prepared for the new building which it is estimated will cost $100,000.

Promoting Public Health.—The New York State Department of Health is now seeking the cooperation of the labor unions in its work of promoting public health by education and has appointed a special representative to facilitate the carrying out of the campaign by visiting labor organizations and enlisting their aid in preventing communicable diseases and in taking steps to avoid the special diseases and accidents incident to the occupation of their members. Arrangements will be made for special meetings of the labor organizations to be addressed by lecturers of the State Department of Health.

Irish Wreck Sanatorium.—At Lucan, a village near Dublin, Ireland, a sanatorium for the treatment of tuberculosis, which was in course of construction, was demolished on July 22 by the villagers who had already displayed much hostility to the scheme of making Lucan a health resort. A mob armed with ropes and pickaxes first tore the roof off and then threw the walls down, leaving nothing but débris. The sanatorium was being erected under the auspices of the Women's National Health Association.

Fewer Fatal Accidents.—During the month of June fifteen persons were killed in accidents on the street railways of New York City, as against twenty-four in June, 1911. The number of serious accidents also decreased from 270 to 206. There was, however, an increase in the total number of accidents reported from 5,997 in June, 1911, to 6,342 in June of this year, while the total number of persons injured, though not seriously, increased from 3,827 to 4,184.

Infant Mortality Rate Lowered.—For the week ending July 20 there were 328 deaths of infants under one year of age in New York City, as compared to 348 in the same week of last year. Since the first of the year the number of infant deaths totals 479 less than for the corresponding period of 1911.

Infantile Paralysis.—Twenty-eight cases of infantile paralysis with three deaths had been reported to the Health Department of Buffalo, N. Y., up to July 24.

Somewhat Doubtful.—According to the records of the church at Tuxpan, Mexico, José Calvario, who died there recently, had reached the age of 185 years.

School on Hospital Roof.—The New York Board of Education has authorized the establishment of a class for tuberculous children on the roof of the Long Island College Hospital, Brooklyn. This is the first instance in which a public school class has been joined to a hospital, although a similar class has been conducted by the Department of Education on the roof of the Vanderbilt Clinic, New York, for several years. There are also various other roof classes on school buildings throughout the city and additional ones will be opened this fall.

Gifts to Charities.—By the will of the late Mrs. Ellen Collings of New York the Lincoln Hospital in this city receives a bequest of $1,000. The sum of $5,000 is also left to the American Endowment Fund of the Lebanon Hospital for the Insane in Syria, Asia.

The late James E. Childs of New York left $50,000 to the Thrall Hospital at Middletown, Conn., subject to a life interest of the testator's wife.

Eugenics Congress.—The first international congress on eugenics opened in London on July 24, with over four hundred delegates in attendance. Among the delegates from the United States were Dr. Charles B. Davenport, director of the station for experimental evolution at Cold Spring Harbor, N. Y.; Dr. Raymond Pearl of the Maine Experimental Station, Dr. D. F. Weeks of the New Jersey State College, and Dr. G. Smith of the University of Minnesota, all of whom presented papers to the congress.

Doctors Protest Against the Insurance Act.—The new National Insurance Act which recently became effective in England has met with much opposition, and particularly from the members of the medical profession, who have refused to agree to the provisions made in it for fees for medical attendance. The Chancellor has offered six shillings for medical attendance under the act for each insured person per annum, and the physicians have made a demand for eight shillings sixpence as a minimum. This being refused the delegates to the British Medical Association in session in Liverpool on July 20 voted to break off all negotiations with the Chancellor, who may thus be compelled to start a State medical service. In fact a scheme for a public medical service organized and controlled by physicians was outlined at a meeting of the medical association and was received with favor.

Dentists in the Army.—The Surgeon General of the Army announces that examinations for the appointment of acting dental surgeons will be held at various places throughout the country on Monday, October 7, 1912. Applicants must be between 21 and 27 years of age, citizens of the United States, graduates of authorized dental schools, and of good moral character and habits. Acting dental surgeons are employed under a three years contract at the rate of $150 per month. After this period they may be promoted to the grade of dental surgeon with the rank of first lieutenant and with the pay and allowances pertaining to that rank. Application blanks and full information concerning these examinations can be procured by addressing the "Surgeon General, United States Army, Washington, D. C." There is a large number of vacancies to be filled.

Michigan Accepts Leper.—After considerable discussion the Michigan State Board of Health has consented to receive the leprosy patient who recently escaped from Bay City in that State, where he had been kept under observation, and was recaptured in Buffalo. The New York State Board of Health was not willing to assume the responsibility of his

care. The incident has led to a discussion of the advisability of federal control of leprosy in the United States.

Medical Society Elections.—The Austin Flint Cedar Valley Medical Society in annual session at Waterloo, Iowa, on July 11 elected the following officers for the ensuing year: *President,* Dr. Elmer E. Dunkelberg, Waterloo, Iowa; *Vice-President,* Dr. Willis F. Cobb, Lyle, Minn.; *Secretary,* Dr. C. F. Starr, Mason City, Iowa; *Treasurer,* Dr. Will L. Hearst, Cedar Falls, Iowa.

The annual meeting of the Iowa and Illinois Central District Medical Association was held in Davenport, Iowa, on July 11, the following officers being elected: *President,* Dr. Wilson W. Adams, Atkinson, Ill.; *Vice-President,* Dr. Peter A. Bendixen, Davenport, Iowa; *Secretary,* Dr. Lawrence W. Littig, Davenport, Iowa; *Treasurer,* Dr. Frank H. First, Rock Island, Ill.

At the annual meeting of the Washington State Medical Association held in Tacoma on July 7, it was decided to hold the next meeting in Spokane on June 7, 1913, and the following officers were elected for the coming year: *President,* Dr. Howard R. Keylor, Walla Walla; *Vice-President,* Dr. A. MacRae Smith, Bellingham; *Secretary,* Dr. Frank Paine Witter, Spokane; *Treasurer,* Dr. W. T. Thomas, Tacoma.

The Oregon State Medical Society held its annual meeting in Portland and on July 6 elected the following officers: *President,* Dr. Robert Ellis Ringo, Pendelton; *Vice-Presidents,* Dr. James S. Moore, Portland; Dr. Fred D. Stricker, Grant's Pass, and Dr. R. W. Stearns, Medford; *Treasurer,* Dr. Katherine C. Manion, Portland; *Secretary,* Dr. M. B. Marcellus, Portland.

The Brazos County (Texas) Medical Society at its first annual meeting held in Bryan on July 6 organized with the election of the following officers: *President,* Dr. George F. Lee, Wellborn; *Vice-President,* Dr. William B. Cline; *Secretary and Treasurer,* Dr. Robert Jasper Hunnicut, Bryan.

Obituary Notes.—Dr. James A. Exton of New York and Arlington, N. J., a graduate of the College of Physicians and Surgeons, New York, in 1866, a veteran of the Civil War, a member of the New Jersey State and Hudson County Medical Societies, the American Medical Association, the American Public Health Association, the Jersey City and Newark Practitioners' Club, and the New Jersey Sanitary Association, one of the founders and president of the Hudson County Medical Milk Commission, and consulting physician to St. James' Hospital, Newark, died at his home in Arlington from paralysis on July 25, aged 68 years.

Dr. Maurice H. Richardson of Boston died at his home in that city on July 31. He was born at Athol, Mass., December 31, 1851. He was graduated from Harvard in arts in 1873 and in medicine in 1877 and began the practise of medicine in Boston after the usual hospital service. He was appointed demonstrator of anatomy at Harvard in 1882 and since 1907 was Moseley professor of surgery. He was surgeon to the General Massachusetts Hospital and a member of the American Surgical Association, the Massachusetts State Medical Society, and the American Medical Association.

Dr. Harry C. Largeman of Philadelphia, a graduate of the Medico-Chirurgical College of Philadelphia in 1899, and a member of the Pennsylvania State and Philadelphia County Medical Societies, died at his home, on July 15, aged 39 years.

Correspondence.

THE LARGE INCISION AND THE REASON FOR IT.

To the Editor of the Medical Record:

Sir:—The able article under the above caption in the Medical Record for July 20, by Dr. Percy A. Perkins, is in line with a number of articles upon the same subject recently. There is much to be said in favor of the large incision, and Dr. Perkins very concisely and correctly points this out. I would call attention to the reason for my activity some years ago in directing the attention of surgeons to the desirability of the short incision. At that time unnecessarily large incisions were made in appendicitis work, of the sort in which "the more thorough the operation, the more quickly the patient died." The results of employing the short incision led to the inception of the principles of the fourth era in surgery, in which the patient is to be left as far as possible under the care of his own protective factors. His protecting organs are not to be disabled by the shock of any really unnecessary operative technique. Lately, however, we have come into much new knowledge concerning Lane's kink, Jackson's membrane, and bile tract adhesions, which were often overlooked when the short incision was employed in abdominal work.

The last word to be said on the subject is perhaps this: Make as perfect a diagnosis as possible before doing any operating at all. In many cases it will then be possible for the surgeon to allow his patient to escape a serious attack of surgery. The surgeon may have the satisfaction of employing considerable technical skill in making a small incision—in selected cases. Through the short incision in appendicitis work, he may often discover the presence of a Lane kink, or of Jackson's membrane, and then proceed to make as large an incision as the case requires.

At the time when I drew the attention of the profession to the advantages of short incisions, the subject seemed to be timely, and to serve a purpose. At the present time it may still serve a purpose, but in connection with newer knowledge, and with newer care in making correct diagnosis before attempting any sort of abdominal operation.

Robert T. Morris, M.D.

616 Madison Avenue, New York.

A NEW CONSCIENCE IN MEDICINE.

To the Editor of the Medical Record:

Sir:—To my mind this must come and very soon for imperative reason, *i.e.* because the common sense of the community demands it. More and more the public is led astray. In excessive specialism, in ultrascientific endeavor, in exaggerated efforts of preventive medicine, sight is lost to curative measures most valuable to ill people, and broadest humanity surely disappears. The teaching, not infrequently, of distinguished leaders, is not always preservative of what is best. Take our Association of American Physicians, and what do we find? Papers read, usually, which could be discussed with profit only by physicians fresh from laboratory research, and to whom care of the sick outside hospitals has relatively minor interest and importance.

Go into advanced city hospitals and what do we find? A corps of ambitious young men who have

captured them and carry the responsibilities of hospital wards, filled with patients of divers sorts and origin, and, therefore, in need of all available knowledge. And yet the consultant physicians and surgeons, in general medicine or surgery, are, as a rule, figure heads, which serve slightly useful purpose. Why? Simply because what they could give is no longer properly valued, *i.e.* wise counsel and guidance. Preventive medicine, rightly estimated, is of primary importance and not medicine, or surgery, which alleviates misery and disease when they occur. And yet to prevent acute or chronic disease, except in limited degree, means complete change of previous modes of life, often practically impossible, or neutralization of seasonable influences. Over the latter we have no control, although they bring now, as always, epidemic diseases, variable as to spread and intensity. At present we require more rational philanthropy and less scientific research in the care and treatment of ill people.

The human machine should be wisely guided and restrained to secure and preserve health. When, from one cause or another, it is not attained or kept, it may be ameliorated, not by subversive and novel methods, but by simple means and judicious control. Wisdom of ages counts, so does experience from wise empiricism. Both have shown indubitable facts, clinically, and carry with them mental and bodily welfare. Every fresh influx of aspiring physicians and surgeons should not attempt to change them. Our noble art must not be a victim of over-weening ambition or of thirst for gold. It must remain true to antecedents and idealism of the best kind.

BEVERLEY ROBINSON, M.D.

NEW YORK.

A CORRECTION.

TO THE EDITOR OF THE MEDICAL RECORD:

SIR:—In the valuable article in the MEDICAL RECORD of July 20, 1912, on "Local Anesthesia in the Upper Respiratory Tract," the author credits me with three deaths due to the combined use of cocaine and adrenalin. The three deaths referred to were first reported by me to the Rhinological Section of the American Medical Association in St. Louis in 1910 but were not reported as personal experiences. The error probably occurred through ambiguity in my quoting the cases in my article in the MEDICAL RECORD of October 31, 1911, on "Tonsil Removal with Reference to Quinine Anesthesia," etc.

I hope Dr. Freudenthal's article will be read by every man using cocaine and epinephrin solutions, as I am sure that most of the members of the profession are not wholly alive to the dangers associated with the injection of these drugs.

B. D. SHEEDY, M.D.

164 W. SEVENTY-THIRD STREET, NEW YORK.

OUR LONDON LETTER.

(From Our Regular Correspondent.)

SCHOOL OF TROPICAL MEDICINE—INGLEBY LECTURE ON PUERPERAL FEVER—STREPTOCOCCUS PUERPERALIS—INSURANCE ACT, CONTROVERSY UNSETTLED—SANATORIA UNREADY—OBITUARY.

LONDON, July 12, 1912.

THE Chairman of Committee of the London School of Tropical Medicine, Mr. Austin Chamberlain, issued yesterday an appeal for £100,000 to provide for the extension and efficient carrying on of the work. This school, founded in 1899 by the Seamen's Hospital Society under the auspices of Mr. J. Chamberlain, then Colonial Secretary, has accomplished so much that we may confidently count on more. In no branch of medicine has progress been as rapid in recent years. Expeditions have been sent to study tropical diseases on the spot, and I have informed you from time to time of the important results of their investigations. But additional laboratories are needed, accommodation for the growing number of students, a nursing home for civilians invalided from the tropics, but unable to procure the special attention they require, and it would be well if some small endowment could be established. The chairman's appeal is to the public, and he naturally refers to some of the results of the measures taken and discoveries made. Of his examples cited with a view of enlisting liberal assistance I may quote one—the steps taken in the last three years to stamp out sleeping sickness in Uganda. In one district alone this scourge destroyed 200,000 people out of the population of 300,000. In 1907 the fatal cases in Uganda numbered nearly 4,000, in 1908 they fell to 1,700, and in 1910 to 1,475. A committee formed for this appeal is to meet next Wednesday at the Foreign Office with Mr. A. Chamberlain in the chair.

The Ingleby lecture this year was delivered by Mr. J. Furneaux Jordan, surgeon to the Birmingham Hospital for Women and to the Maternity Hospital. He took for a subject puerperal infection, and discussed its types, incidence, causes, and treatment, preventive and curative. It was a clinical review to some extent which could not fail to interest in every aspect, but I must confine my notice to two. First as to causation. He said the matter for surprise was not that there was so much puerperal fever, but rather that there was not more. We take infinite pains to keep microorganisms from the operation field, but can it be said we do as much to keep them from a cervical or perineal tear? He thought not, and that was the danger. Before a difficult forceps case was over the attendants' hands would often be in contact with the patient's thighs and other parts, and, however sterilized at first, could not continue so to the end. Here the lecturer gave the results of the bacteriological investigation of the uterine discharge as shown in cultures or cultures and films in 21 cases of puerperal fever, nearly all under his own care. All the bacteriological investigations were done by Dr. Mackey, who reported that a streptococcus was present in 17 out of the 21, and was identically the same in all, and quite distinct from other streptococci. Moreover, in any secondary pus, pleuritic fluid, or sputum present, it was found identical with that in the uterine discharge. Furthermore, Dr. Mackey never found this special streptococcus in any other septic cases and only once had he met with it apart from these puerperal cases, and that was in the cerebrospinal fluid of a case of chorea gravidarum. Jordan and Mackey propose to name it *"Streptococcus puerperalis."* As this was found in 17 out of 21 cases, 20 per cent., Mr. Jordan thought it might be regarded as the most frequent cause. At the same time, other organisms have been shown to be causes sometimes. In isolated cases whence comes the infection? This and some other difficulties must be considered. Mr. Jordan suggested that this streptococcus is present in the bowel like the *Streptococcus fæcalis,* and that the puerperal woman is very susceptible to its action. He added that efforts will be made to isolate it from the feces.

The second point I propose to report on is treatment, but this naturally follows, resolving itself into the strictest surgical cleanliness of hands, instruments, and patient's skin over the whole area of the region endangered. The rectum is usually emptied by enema at the beginning of labor, and often enough the bowel contents are again expelled at a later stage. The region of the anus therefore demanded greater attention than had been customary to give it, a bowl of biniodide, 1 in 1,000, should be at hand with big bits of absorbent wool, care of fingers in using; in short, absolute surgical cleanliness in every conceivable way was insisted on. These measures may be called preventive, but the lecturer also spoke of curative ones. I pass over the usual remedies that he mentioned to the consideration of the vaccine method, which seems a corollary of the discovery of the *Streptococcus puerperalis*. The lecturer would employ a vaccine in addition to other treatment. He was so satisfied of its value that he expected stock vaccines would soon be on the market, but he believed more in autovaccines and would recommend an injection of it whenever possible. He quoted three cases where, given early, success was complete, and one to show the advantage of the patient's own vaccine over the stock article. He did not think it an impossible dream of the future that every woman should have at the commencement of labor an injection of the vaccine of the *Streptococcus puerperalis,* which would render her immune to the action of this germ; at any rate, it would do so in 70 or 80 per cent. of the cases.

Insurance problems continue to vex the public, and new protests against the act are constantly put forth. To the domestic servants' opposition is now to be added, among several others, that of the agricultural laborer and the farmer. These loudly protest they want no help, and they are known to be "good lives" from an insurance point of view; at any rate, as far as mortality insurance. But in regard to sickness in later life the question seems doubtful. Clerks in various commercial undertakings are also dissatisfied, and as the act comes nominally into force on Monday next, these and many other wage earners are dolefully contemplating the risk of unemployment. It has been calculated that the scheme will at first most surely increase unemployment and that the promises of sick benefit will be more than neutralized because employers compelled to pay insurance premiums on their servants will no longer feel inclined to extend the assistance they have heretofore so liberally given in such eventualities.

Sanatorium benefit bristles with so many difficulties that an official memorandum has been issued to assist the local committees in "beginning the administration." They are told to arrange for the medical examinations as to the existence of tuberculosis and the appropriate treatment of each patient at home, or in any and what institutions, reporting on the proposed arrangements for the Commissioner's approval. They are to consider provisional arrangements to be employed until a permanent scheme can be brought into operation. This last is to regard a "dispensary unit" and a "sanatorium unit." The former will be for expert diagnosis and treatment; the latter a period of residential oversight in farm colonies, open air schools, hospitals, and other institutions, as guided by the medical officer. Any institution must have been approved by the Local Government Board, and "as regards noninstitutional treatment, the manner of treatment also requires the approval of that department." That board has concurrently issued a memorandum of directions to County and Borough Councils as to their arrangements for the treatment, asking them to prepare schemes for the whole population, not merely for insured persons, in their areas. The most sensible of the various suggestions in this document is that "each County Council should confer at an early date with the sanitary authorities throughout the county in order to obtain full cooperation."

In the House of Commons yesterday there was what is described as "a scene" when Mr. Lloyd George was asked to consent to postpone the act for a few months, as his promised sanatoria are not in existence, and it was held to be wrong to exact the insurance money until they were. He refused any concession and attributed to his questioner a wish which was repudiated and drew upon him the remark he had no right to say so. He declared he had every right, and was charged with falsehood, a word withdrawn at the wish of the Speaker. He was taunted by another member as being "in a temper." A letter of Mr. George to a medical correspondent has been circulated by the newspapers. In this he repeats his declaration that he wishes to do all in his power to secure the cooperation of the profession, but the sting is at the close, where he hints that their refusal may necessitate other measures. The net result of all the controversy for so many weeks is that, with the act coming into force on Monday, the profession is firm and united and the Chancellor as obstinate as ever. There are not wanting certain indications that he is preparing to try some other compromise, but it is now too late to do anything more than wait and see whether he will obstinately persist to the extreme.

It is believed by many that Monday will indicate that the act cannot be enforced at all and that the week will show hundreds of thousands refusing to insure. If so, you will learn by telegraph. Amidst all the confusion and doubt a body calling itself "the Liberal Insurance Committee" has called for a "day of thanksgiving" for the act. Not only so, but has coolly proceeded to appoint to-morrow as the day. Nothing more has been published about this curious proposal, and people asked about it usually treat it as ridiculous or contemptible. Well, there is only a day to wait to "see what we shall see."

The Hon. C. B. Mosse, late deputy surgeon-general in the army, afterward for about 25 years superintending medical officer of the Colonial Medical Department, Jamaica, has died at the age of 82. He was a graduate of Dublin, T.C.D. and member College of Surgeons, 1852. He was in medical charge of the expedition up the Gambia in 1866, and present at the capture of a stockaded town. Next year he was promoted staff surgeon for valuable services during yellow fever epidemic at Bathhurst. He served through the Ashanti War (1873-4) and was at the actions of Essaman, Amoaful, and Ordahon, as well as at the capture of Coomassie. For his bravery in these engagements he was awarded the medal and clasp and C.B. Retiring in 1876 as deputy surgeon-general, he took office as above in Jamaica, where he became member of the Legislative Council. In 1897 he was made a C.M.G. and in 1904 he retired from the colonial service.

Progress of Medical Science.

Boston Medical and Surgical Journal.

July 18, 1912.

1. The General Practitioner: An Idealization. F. S. Meara.
2. Remarks Upon Some Recent Studies in the Pathogenesis of Epilepsy. L. Pierce Clark.
3. Alcohol as a Drug. W. F. Boos.
4. The Regulation of Midwifery. J. L. Huntington.
5. Hyperemic Treatment of Acute Anterior Poliomyelitis. A Preliminary Report. P. McIlhenny.
6. Actinomycosis Treated with Vaccines. R. Kinnicutt and W. J. Mixter.
7. Three Cases of Pellagra. C. H. Dean.

1. An Idealization of the General Practitioner.—F. S. Meara believes that ethics should enter into the preliminary education of the general practitioner and should be given prominence in proportion to its practical value and not left to the hazard of environment or fortuitous example. The ideal practitioner is he who, about to deal with man, has appreciated the meaning of man and has fitted himself to meet the varied problems man presents; who sees in his capacity for knowing, feeling, acting, and worshipping, the parts in himself, which, developed, make the symmetrical whole and give him contact with all men; who seeking to acquire the facts that constitute the science of his profession studies in their application the object of their application, thus perfecting the art of his profession; who lives clean and acts the golden rule, and who leaves in a grateful memory and an untarnished name his *monumentum aere perennius.*

2. Recent Studies in the Pathogenesis of Epilepsy.—L. Pierce Clark concludes that genuine epilepsy would seem to be dependent upon certain unknown complex heredity factors producing a form of cortical and subcortical instability upon which a variety of endogenous toxins may act, causing the disease. The fit is an exhibition of a reflex action of the disease, and as such should not be seriously interfered with by sedatives *per se.* The sedative treatment of epilepsy is, therefore, to be thoroughly discouraged as long as there is hope of bringing the real clinical pathogenesis of the disease under control.

4. The Regulation of Midwifery.—J. L. Huntington points out that the medical schools are not giving the proper training in obstetrics. The man or the woman who is to take the responsibility of obstetrical cases must be prepared to cope with every emergency which may occur during labor or the puerperium. Anything less than this, according to the author, is a makeshift and must be so regarded in the clear light of modern science. To train women to take care of normal cases only must be fallacious, for who is to make the diagnosis and be sure that the case is normal. It seems hardly right to maintain two standards of obstetrics, one for the poor and ignorant, and another for the intelligent and well-to-do.

5. Hyperemic Treatment of Poliomyelitis.—P. McIlhenny carries out the method of treatment in the following manner: The alimentary canal is thoroughly cleansed; the paralyzed limbs are lightly bandaged with cotton to keep them warm; the patient is given a stimulating liquid diet and strychnine in small doses; cups are applied intermittently to both sides of the spine from the sacrum to the cervical region for one hour daily, and this is continued regularly until muscular soreness has disappeared and voluntary motion in the affected muscles begins to return; the bandages are then removed and massage is begun, a general diet gradually being allowed, and the cupping being continued. The author bases his treatment upon the results he has obtained in five cases.

6. Actinomycosis Treated with Vaccines.—R. Kinnicutt and W. J. Mixter obtain pure cultures of the actinomyces by thoroughly washing separate granules gotten from the pus in five or six changes of sterile, normal salt solution. They have found that a stock vaccine is apparently as effective as an autogenous one, for when the organism has once been obtained in pure culture, it can be left growing in the laboratory to be used when needed. It is impossible to standardize such a vaccine except in a very rough way, because the filaments composing the colonies are not evenly broken up. The routine method of treatment is to give 0.1 c.cm. of the vaccine subcutaneously for the first dose. This is repeated every three or four days, increasing the amount given 0.05 to 0.1 c.cm. each time until a dosage of 0.75 c.cm. has been reached. The authors have treated with vaccine eight cases of actinomycosis: two with abdominal, two with pulmonary, and four with cervicofacial actinomycosis. They find it impossible to draw any general conclusion from these few cases, but it seems that the use of vaccines in superficial actinomycosis does do good. In lung actinomycosis with the severe secondary infection which invariably accompanies it, vaccines are apparently useless.

New York Medical Journal.

July 20, 1912.

1. Tincture of Iodine the Best Surgical Disinfectant. F. T. Woodbury.
2. The Latest in Skiagraphy. J. Rudis-Jicinsky.
3. The Anemic Habit. H. Brooks.
4. Discovery of Pneumococcus in the Feces; Rôle of the Intestine in the Symptomatology and Treatment of Acute Lobar Pneumonia. A. A. Rutz.
5. The Use of Spinal Fluid (Autotherapy) in the Treatment of Chronic Neurosyphilides. W. Browning and W. Lintz.
6. Hypertrophied Thymus and Status Lymphaticus. J. H. Taylor.
7. Garbage Disposal. T. M. Koon.
8. Syphilitic Facial Paralysis. C. O. Files.

1. Tincture of Iodine as a Surgical Disinfectant.—F. T. Woodbury has used the U. S. P. tincture on the tonsils for acute and chronic tonsillitis; in the parturient uterus and on extensive lacerations of the perineum; in the cavity following the evacuation of an amebic liver abscess; in the intestine, on the ovary, in the bladder, stomach, gall-bladder, and knee-joint; in fistula in ano and tuberculous osteitis; on compound comminuted fractures from crushing and gunshot wounds, on dressed compound fractures of the skull and spine; on amputations, on corneal ulcers, and in various ophthalmic operations; and on his own hands as a disinfectant before operating. A solution of one teaspoonful of the tincture to a quart of normal salt solution made with pure sodium chloride has been used as a wet dressing in suppurating wounds, burns, and gangrene from frost bite; as a bladder irrigation in acute cystitis; as a vaginal douche, a gastric lavage, a urethral injection, an injection into the spinal canal in a case of epidemic cerebrospinal meningitis; as a nasal spray, a gargle, a collyrium; and as a cleansing solution for flushing out the abdominal cavity after suppuration, and for washing out tuberculous bone sinuses. It makes a good rinsing solution for the surgeon's hands during operations.

3. The Anemic Habit.—H. Brooks believes that long standing anemia leads to a condition of the blood-forming centers characterized by an indisposition to the restitution of the blood to the normal level, even when the primary etiological factors of the anemia are eradicated. This constitutes an anemic habit. Treatment of these cases is difficult because of this tendency, which must be wholly eliminated or lessened before success can follow. Successful treatment in most cases demands closely detailed study, the direct application of the hygienic requirements in each individual case, and the direct attempt must be made to stimulate the blood-forming centers by the development of a tissue demand. Drug treatment or nature alone in these cases of anemic habit is insufficient, but they must be combined for the successful management of the condition. Treatment must in most instances be prolonged and persistent. Relapses are frequent.

4. The Pneumococcus in the Feces.—A. A. Rutz con-

cludes on the basis of clinical observations and bacteriological examinations that there are living and active pneumococci in the feces in acute lobar pneumonia; that tympanites is a constant and important symptom in the disease; that the intestine is the special organ of excretion of the toxins; and that routine rectal injections from the onset of the disease, together with other accessory measures intended to reduce the toxemia and tympanites, materially influence the course and lower the mortality of the disease.

5. Autotherapy in Neurosyphilis.—W. Browning and W. Lintz present a second communication on this subject. Their method consists in utilizing as a therapeutic agent administered hypodermically the spinal fluid removed by lumbar puncture from cases of syphilis of the nervous system. The principles upon which this method of treatment is based were discussed in the former article (see MEDICAL RECORD, May 4, 1912, page 861.) The authors do not claim that this method is suitable for all cases of neurosyphilis, but claim that it gives invaluable results in selected cases. There are three very material limitations to its use: (1) The stock of antibodies in any given case is soon reduced or temporarily exhausted, and furthermore is not very rapidly renewed. (2) Some apparently suitable cases fail to show any, or any important content of antibodies in the spinal fluid. In such cases no improvement of the main trouble is obtained. (3) The antibodies of the administered material disappear rapidly from the system. In general, and if a full amount (say 25 to 50 c.c.) of spinal fluid fairly rich in antibodies is injected, signs of improvement become evident toward the end of the first week following the injection, often in four to six days; and in some cases the main benefit appears to be completed in about a week after it begins. This may be called the primary gain, but a gradual secondary improvement may go on for some weeks at least. An important side effect of these injections appears in the improvement of the bowel movements. This has been observed in all classes of cases, whether of specific character or not, though the degree of intestinal stimulation may vary considerably.

Journal of the American Medical Association.

July 20, 1912.

1. The Present Status of Ligation or Excision of the Pelvic Veins in the Treatment of Septic Thrombophlebitis of Puerperal Origin. C. J. Miller.
2. The Ligation or Excision of the Ovarian or Deep Pelvic Veins in the Treatment of Puerperal Thrombophlebitis. R. R. Huggins.
3. Tuberculous Meningitis; a Pathological Report of Nine Cases. L. H. W. Rhein.
4. Changed Personality Due to Head Injury. M. G. Sturgis.
5. Adipositas Cerebralis in Its Relation to Tumor of the Hypophysis. A. Gordon.
6. The Atrophic Form of Little's Paralysis. E. A. Rich.
7. Xanthoma Tuberosum Multiplex Vulgaris Mistaken for Myomatosis Cutis Disseminata. R. L. Sutton.
8. Primary Carcinoma of the Lung. B. M. Edlavitch.
9. Aseptic Intestinal Anastomosis. An Experimental Study. W. D. Gatch.
10. Operative Treatment in Joint Fractures. F. J. Cotton.
11. The Surgery of Bones and Joints. L. W. Ely.
12. Intestinal Complications in Gynecologic Operations. L. S. McMurtry.
13. A Useful Procedure in Submucous Resection of the Nasal Septum. F. C. Smith.
14. Thymol for Tænia Saginata. W. Allan.

1. Puerperal Septic Thrombophlebitis.—C. J. Miller discusses the treatment of puerperal septic thrombophlebitis by means of ligation or excision of the pelvic veins. The success of a similar method of treatment in pyemia of otitic origin has naturally suggested the use of the method in puerperal cases not pathologically different except in location and extent. As to the indications for and technique of the operation, practically all agree that intervention is advisable as soon after diagnosis as possible. Inflammatory exudates contraindicate operation and ligation is of little value except in the pure forms of thrombosis. If lung abscess or pneumonia has occurred the case is then hopeless. The practical deduction from the study of the literature is to operate in the acute stage if the general septic features do not predominate and to watch constantly for signs of localization. Whether ligation or excision be done depends on circumstances; the latter procedure is reserved for cases presenting periphlebitic processes, cicatrices, abscesses, etc. While the available figures of operations are not specially encouraging, a detailed analysis of the cases throws a different light on the subject. It is necessary to exclude the hopeless cases, for many of them are practically autopsies. Deducting cases of cava thrombosis, acute pyemia, and faulty ligation there was a general mortality in the author's collected cases of 21 per cent., dropping to 8.5 per cent. when only one or both ovarian veins were ligated, but reaching 31 per cent. when both hypogastric veins required ligation.

3. Tuberculous Meningitis.—L. H. W. Rhein comments upon the results of the histological examinations of nine cases of tuberculous meningitis, one of which was diagnosed as pneumococcus meningitis. He believes that it is possible, if not probable, that the meningitis in these cases is due to a mixed infection and does not originate solely from the tubercle bacillus or its toxins. The rapidity of the course of the disease in adult cases is very unlike the slow chronic process characteristic of tuberculosis of other organs. The cellular changes of the exudate are not absolutely characteristic and are not typical of the tuberculous process. Vascular changes were observed in seven of the nine cases. These consisted of thickening of the walls of the arterioles and of some veins. Perivascular round-cell infiltration was quite commonly observed. In one case the lumen of the small vessels was obliterated. In another there was hyaline degeneration. Distention of perivascular spaces was noted in seven cases and in several there were other evidences of encephalitis. Plasma cells were more or less present in six cases.

5. Adipositas Cerebralis.—A. Gordon reports a case of tumor of the hypophysis presenting the clinical symptoms of Fröhlich's syndrome, otherwise called dystrophia adiposogenitalis, which belongs to the group of adipositas cerebralis or all cases in which the deposit of fat is due to a cerebral cause. Cases of adiposity and genital hypoplasia have been observed more frequently in connection with hypophysis disease than in that of other ductless glands. When one of these is affected the others are likely to be affected as well. The symptoms in the author's case developed very irregularly, suggesting different diagnoses: paresis, multiple sclerosis, and brain syphilis. The correct condition was realized when the patient's adiposity appeared and this with the bitemporal hemianopsia and the sexual infantilism included the case among one of the forms of Fröhlich's syndrome. Other interesting phenomena were the glycosuria which, though slight, was evident throughout the five years of observation and the profuse perspiration from which the patient suffered intensely, regardless of exertion or temperature. At the autopsy, besides the large angiosarcoma of the hypophysis of which no healthy tissue could be found, there was enlargement of the thyroid and of the adrenals.

8. Primary Carcinoma of the Lung.—B. M. Edlavitch reaches the following conclusions: 1. There is abundant evidence of the occurrence of primary carcinoma of the lung as a definite pathological entity. 2. This type of tumor originates mostly in the epithelium of the bronchi, not infrequently in the alveolar epithelium, and sometimes in the epithelium of the bronchial mucous glands. 3. It is about three time more common in men than in women. 4. The right side is affected about twice as often as the left side. 5. It may involve part or all of a lobe or an entire lung; it is usually unilateral and often fairly well circumscribed. 6. The bronchial lymph-nodes are practically always involved, but other parts, principally the brain, which seems to be especially susceptible, may become in-

volved by secondary metastases. 7. Pleural effusion, mostly hemorrhagic in character, occurs quite constantly in association with this condition. 8. In suspected cases the presence in this pleuritic fluid of large epithelial cells may be regarded as of diagnostic importance.

9. **Aseptic Intestinal Anastomosis.**—W. D. Gatch has found that aseptic intestinal anastomosis by any method of suture is theoretically impossible, but the amount of contamination can be so reduced that cultures taken at the line of suture are sterile. Descending invagination, if a proper technique be employed, may be used to remove pieces of bowel several inches in length with excellent immediate and late results. It is possible to perform lateral and end-to-end anastomoses of the intestine aseptically and without the use of special instruments so as to secure practically the same operative results as are obtained by standard non-aseptic methods for these operations, and with no increase in the difficulty of the technique.

10. **Operative Treatment of Joint Fractures.**—By F. J. Cotton. (See MEDICAL RECORD, June 29, 1912, page 1249.)

11. **Surgery of Bones and Joints.**—By L. W. Ely. (See MEDICAL RECORD, June 29, 1912, page 1249.)

12. **Intestinal Complications in Gynecological Operations.**—L. S. McMurtry states that these complications may be strictures, obstructions, fistulas, or anastomoses. They cause sometimes serious difficulty in removing tumors, especially of the ovaries, and are constantly found matting the bowels together in advanced ovarian cancer and peritoneal tuberculosis. The frequency of appendicitis as a gynecological complication of tuboovarian disease is generally recognized as a forceful indication for the suprapubic rather than the vaginal route of operation. The omentum and sigmoid flexure are the parts most frequently involved in adhesion, the omentum being the most efficient means of warding off infection of the other viscera, and adhesion of the sigmoid and rectum is so common with tuboovarian disease as to be distinctly a gynecological condition. Extensive gluing together of the intestines after general peritonitis is a result sometimes of Nature's failure to absorb, and forms a distinct type embarrassing operative procedures, which may also be caused by ovarian and uterine neoplasms. The author advises as prophylactic measures against the formation of adhesions in gynecological work the following: As far as compatible with safety, operations should be avoided in the acute stages of inflammatory diseases and deferred to a period when Nature has removed gross exudates. Unnecessary handling, wiping, and packing off of peritoneal surfaces should be avoided in operations. The violence of retractors and unnecessary exposure should be avoided. Blood clots beget granulation tissue and adhesions and should be gently and carefully removed. Drainage, especially with gauze, produces adhesions and should be applied only when definitely and positively indicated. In dealing with adhesions in the course of operation, the greatest care should be taken to limit traumatism, using sight when possible and working deliberately. The greatest source of adhesions is unrecognized injury to the intestinal coats. A thorough knowledge of the best modern technique is essential. To avoid agglutination of separated surfaces is not always possible, but perhaps the most efficient procedure is applying a layer of sterilized petrolatum over denuded surfaces.

The Lancet.

July 13, 1912.

1. Five Cases of Duodenal Perforation. D'Arcy Power.
2. High Blood Pressure and the Commoner Affections of Arteries. H. French.
3. A Case of Tubal Pregnancy. Development to Term Without Rupture; Lithopædion (Skeletonization); Perforation; Peritonitis; Operation; Coincident Uterine Pregnancy; Subsequent Delivery of a Living Child. R. L. Knaggs and W. W. Walker.
4. The Treatment of Chronic Ulcer of the Stomach and Duodenum by Gastrojejunostomy, with a Report on 72 Consecutive Cases Operated on More than Two Years Ago. J. Sherren.
5. The Use of Celluloid Splints in the Treatment of Cases of Poliomyelitis. F. E. Batten.
6. Neosalvarsan. J. McIntosh, P. Fildes, and H. B. Parker.
7. Observations on the Neuron. H. Campbell.

1. **Duodenal Perforation.**—D'Arcy Power reports the histories of five cases of this condition operated upon by him during a short period of time. Each case occurred in a man in the prime of life, emphasizing the fact that acute perforation of a duodenal ulcer is much commoner in men than in women. Each patient had been in good health up to the time of the disaster. Previous indigestion is unusual in duodenal ulceration. This symptom never has the same prominence as in cases of perforated gastric ulcer. The onset of pain is sudden and entirely without any exciting cause. It is severe and is associated with considerable shock. Gentle palpation of the abdomen reveals that the upper part of the right rectus is a little more tense than the corresponding part on the left side, while there is a definitely tender spot above the umbilicus and to the right of the middle line. The abdominal muscles become more tense as the shock passes off, and a new and very misleading symptom appears, for the patient now begins to complain of pain which he localizes in the right iliac fossa. On this account many cases of acute duodenal perforation are diagnosed as cases of acute appendicitis. This mistake may be avoided if one remembers that in acute appendicitis the pain, tenderness, and rigidity are limited to the lower part of the abdomen, though all the symptoms may extend across to the left side, while in acute duodenal perforation, although pain and tenderness may be felt in each iliac region, there is a point of maximum pain in the right hypochondrium, and there is at least increased resistance over this area. The next misleading point in a case of acute duodenal perforation is the manner in which the abdominal symptoms subside as the initial shock passes off.

2. **High Blood Pressure and the Commoner Affections of the Arteries.**—H. French is certain that high arterial pressure can be reduced safely only when the muscle of the arterial coats is still muscle, though it may be out of training and stiff. As long as it is muscle it may be rendered supple again by arterial gymnastics, and so brought back under the control of the vasomotor system, to the great relief of the heart. When, however, the tunica media of most of the arteries, particularly those of the splanchnic area, is fibrous and no longer muscle, a high blood pressure becomes a necessity if the patient is not to be permanently invalided. If one relies solely upon the "toxic" and the "increased peripheral resistance" theories of arteriosclerosis and high blood pressure, one may often treat the patient on the wrong lines. The correct lines of treatment are as follows: (1) Prevention by moderation in eating and drinking, a due alternation of brain work with physical exertion daily. (2) Relief in the earlier stages by carefully considered steps that may be classed together under the heading of "arterial gymnastics." (3) Recognition of the fact that when the stiffening stage has passed and fibrosis is already established a high blood pressure is to a greater or less extent a necessity; that it has to be maintained by the heart; that it could be lessened by lessening the work of the heart, as by invaliding the patient or putting him to bed; but that if the patient is to continue life in anything like its full activity the heart must be enabled to maintain a high blood pressure, for which purpose iodides, nitrites, and so forth are relatively useless; cardiac "training" by regulated massage, exercises, being far more important, and the chief drugs to rely on when the heart symptoms are well developed being those which increase the force of heart beat, especially full doses of tincture of digitalis.

3. **Coincident Tubal and Intrauterine Pregnancy.**—R. L. Knaggs and W. W. Walker report a case one of the most striking features of which was the association of a tubal pregnancy of unusual character with a uterine pregnancy

of a later date. The development of the intrauterine pregnancy followed so closely upon the onset of degenerative changes in the tubal fetus and the nature of the case was made so clear at an early stage in consequence of the enforced abdominal exploration, that even if there were no other points of special importance the case would be a contribution of considerable interest to the subject of tubal pregnancy. Attention in the main, however, cannot fail to be concentrated upon the tubal condition. The tubal pregnancy reached the highest point of its development without rupture of the tube. The last stage of the tubal pregnancy was also unusual. A lithopedion is rarely completely intratubal, but more commonly is contained in a sac which is formed by peritoneal adhesions and false membrane. In this it may lie harmless for years. But where suppuration occurs the pus may open in various directions and the fetal bones be discharged through the skin, the bowel, the bladder, or the vagina. The peritonitis is local and limiting. In this case a small perforation resulted evidently from ulceration of a sharp edge of bone and a general peritonitis of a not very virulent type resulted from the flooding of the general peritoneal cavity with escaping adipocere.

6. Neosalvarsan.—J. McIntosh, P. Hildes, and H. B. Parker note that in the evolution of neosalvarsan the chief object in view has been the achievement of increased solubility and a neutral solution. The means by which these improvements have been brought about is that frequently used to convert insoluble benzene derivatives into soluble—namely, the introduction of a sulphoxyl radicle. In this instance this was carried out by means of acid sodium formaldehyde-sulphoxylate, $CH_2(OH)O.SO.Na$. Neosalvarsan contains one such group attached to an amido radicle. The powder is yellow in color and less fine than salvarsan, so that on shaking the capsule a definite rattle is detected. In general the importance of neosalvarsan is the diminished toxicity to man, enabling a further step to be taken toward the more frequent attainment of a more intensive treatment of early syphilis. Generally, in primary syphilis two initial doses may be given, followed by a third at an interval of four weeks. In secondary syphilis three injections are sufficient at first, with a fourth eight weeks later; while in tertiary cases the treatment should be continued every two to three months after the initial course until a negative Wassermann reaction has been obtained.

British Medical Journal.

July 13, 1912.

1. The State, the Poor and Our Profession. G. E. Haslip.
2. Modern Social Changes and Legislation as They Affect the Medical Profession. E. N. Nason.
3. Changes in the Conception and Treatment of Insanity During the Past Twenty-eight Years. J. Turner.
4. A Plea for Harrogate and Other English Health Resorts. C. Gibson.
5. Parotitis Associated with Glycosuria and Acidosis. L. M. Routh.
6. Electrocardiography and Its Importance in the Clinical Examination of Heart Affections. T. Lewis.
7. Subperiosteal Hematoma. P. Cole.

5. Parotitis Associated with Glycosuria and Acidosis.—L. M. Routh reports a case presenting these conditions in a man aged 58 years. At no time in the past had symptoms ever suggested the presence of sugar in the urine, and on several occasions during other ailments the routine examination of the urine had shown it to be healthy. The patient was a stout and rather active man who on April 13th had definite fullness but no tenderness over the site of the right parotid. One week later the swelling gradually increased in size and involved also the submaxillary gland. There were considerable pain and constitutional disturbance, the temperature reaching 103°. On April 28 the patient had considerable thirst and the urine which was passed frequently and in large quantities was found to contain a trace of albumin and a large quantity of sugar. Diacetic acid and acetone were also present. Exploration showed that there was no pus present in the parotid. The patient gradually improved, and on May 13 the parotid swelling had subsided and the urine was free from sugar. The following question suggested itself: Did the parotid inflammation cause some autointoxication with secondary effect on the metabolism of the pancreas as a cause of the glycosuria? There is, of course, some fundamental correlation between the parotid gland and pancreas, in that they both secrete a juice materially aiding in the digestive processes. Another possibility is that the parotid and submaxillary also furnish an internal secretion, the temporary disorganization of which may cause glycosuria. The fact that the left parotid and submaxillary glands were not involved, and that their internal secretions were therefore intact, would perhaps favor the former view. With regard to the origin of the parotitis, the author is uncertain whether to attribute it to the initial draught or to an oral infection through Stenson's duct.

6. Clinical Importance of Electrocardiography.—T. Lewis notes that galvanometric examination of the heart is important from many points of view. It may give indications of enlargement of the walls of one or other cardiac chamber. It may accurately locate small lesions in the musculature. It informs one when the heart beat starts at the normal impulse center or away from it; in the latter case it indicates that the rhythm is no longer under the normal nervous control—a fact which is of fundamental importance in the management of a case. It gives a separate record of contraction in auricle and in ventricle, and accurately defines the time relation of contraction in one chamber and the other; thereby it frequently elucidates physical signs which otherwise remain obscure. It provides a perfect means of ascertaining the functional efficiency of the auriculoventricular bundle, the sole conducting tract upon which the ventricle depends for the reception of impulses which start its contractions. It enables one to differentiate between separate forms of slow and rapid heart action, which are of totally different significance. It provides an analysis of every form of cardiac irregularity, an analysis which is unrivaled in its precision by any other method. While the information derived from it relates essentially to the condition of the muscle, the method is often helpful in the diagnosis of lesions of the valves. It brings one into nearer contact with the functions of the heart muscle than does any other clinical method. It is, in short, a precise means of studying the heart as a living and moving organ.

Berliner klinische Wochenschrift.

June 24 *and July* 1, 1912.

Inulin as Diabetic Food.—Strauss reports at length on this subject with especial reference to the prevention of acidosis. Inulin, a polysaccharide of levulose, was recommended in diabetes as far back as 1874, but only quite recently Naunyn and Socin decided after an extensive test that it had little value in nourishing a diabetic. Their criterion, however, was the degree of sugar elimination. The question of the utilization of inulin in the healthy has also been a debatable one, for it has been stated that it resists the action both of saliva and pancreatic juice. The author has studied the subject from every angle. He concludes that in most cases diebetics do remarkably well on inulin, possibly better than on oatmeal or wheat flour porridge. Since his good results must be due to technique, he recommends inulin periods of four to eight days with short intervals of alternation with other foods. Inulin should be given in other dishes, such as eggs cooked in various ways, fruit stews, and vegetables. The protein content of the food should not be excessive. In the intervals he uses the same foods minus the inulin and does not substitute any carbohydrate for the latter. The daily ration of inulin is 50 to 100 gms. The inulin bread which has been

used by others he does not like, as he finds bread bad for tolerance. He would reserve inulin for severe cases, especially with acidosis threatened or actually present. That this condition is benefited is unmistakable.

Gastrospasm in Cholecystitis and Cholelithiasis.—Schlesinger in the course of radiographic studies of gall bladder disease chanced to observe in two patients total spam of the stomach, apparently as a reflex from the painful condition of the other organ. One patient, a woman aged 57, had suffered for thirty years with attacks of gastric cramps unconnected with eating. The attacks in the other patient had only recently appeared and the spasmodic state was recognized in the radiograph, having already been noted by palpation. Naturally it became necessary to exclude gastric ulcer and perigastric adhesions. These spasms are not necessarily painful, for gastrospasm has been recognized in radiographs of hour glass stomach, etc., and it is possible that isolated gastrospasm is not painful. On the other hand it no doubt adds at times to the pains of acute cholecystitis and hepatic colic, and the author has reason to believe that this is true also of renal colic, appendicitis, and pancreatitis, all of which conditions are accompanied by vomiting. Hence gastrospasm should be of diagnostic value in calling attention to the likelihood of some acute abdominal affection.

Trephining for Simple Punctured Wound of the Brain.—Mühsam reports a case of this sequence along with others in which the presence of complications furnished the indication. It is of course exceptional for a stab wound to traverse the cranial bones and enter the brain substance. The knife in this case passed through the temporal bone and paralyses of the left facial nerve area and left arm and leg soon supervened. Several days later convulsions developed in the paralyzed area, then becoming general. The *x*-ray showed the presence of a hematoma in the temporal region. As the convulsions continued to recur serially the patient was trephined and made a prompt recovery.

Absence of Urinary Pepsin in Diabetes Insipidus.—Rosenthal refers to the most recent view that diabetes insipidus is due to a peculiar form of renal insufficiency which stands in the way of excretion of typical concentrated urine; also that this peculiarity may depend in some way upon some internal secretion, since diabetes insipidus has been seen in lesions of the hypophysis. It has also been noted that pepsin and amylase may be absent in this kind of urine, and this point the author has chosen for a special study. The first patient to appear with diabetes insipidus was a man aged 27, healthy and of sound stock. His only disorder was polyuria and thirst. Repeated analyses showed complete absence of urinary pepsin and only an occasional trace of amylase. It is not yet certain that this absence of ferments can be given pathognomonic significance as the material thus far analyzed by the author and his predecessors is much too scanty. If further research is corroborative we shall, perhaps, have a resource for distinguishing between diabetes insipidus and other forms of simple polyuria. The author does not pretend to give a rationale for this absence of urinary enzymes.

Spasmophilia.—Meyer of the Berlin Orphan Asylum has studied this subject from recent literature in respect to its bearings on the tetany of nurslings. He first reviews the work done on the parathyroids and thyroids in this connection. It cannot be shown that these bodies show any constant anatomical alterations, but a functional insufficiency is highly probable, dependent on an inborn inferiority. The subject of calcium metabolism is not reviewed. There is a conflict of testimony at present. The weight of evidence still shows that poverty of calcium salts is in some way associated with spasmophilia, but other factors must be involved, *i.e.* spasmophilia means more than simple defect of lime salts. A third subject is the association of tetany with other organs and functions. A certain parallel exists between tetany and ergotism, and the former has been brought in relation with the circulation in the blood of a hypothetic vasoconstricting substance —perhaps more than one. Thus some cases of tetany could be explained by exogenous poisons and intestinal autointoxication, while others must depend on strictly endogenous poisons, as in tetany from extirpation of the parathyroids. It is, of course, not impossible that adrenalin behaves as a vasoconstricting agency when present in a certain degree of excess in the blood. Under diagnostic procedures Schlesinger's leg phenomenon is a new criterion. If the extended thigh is bent strongly on the hip there is an extensor spasm at the knee joint. This adds another to the several reflex tests now used in identifying spasmophilia. The part played in tetany by smooth muscle, including the heart, has now become recognized. The sympathetic nervous system and even the vegetative functions are also known to be affected in tetany, so that the latter appears to be almost a universal condition. Under treatment it does not appear that anything important has recently transpired. Calcium bromide has been recommended as combining food and medicament.

Tracheitis Gummosa.—Stumpf relates a case of this somewhat obscure affection. A healthy man not believed to have had syphilis by himself or others, but whose older children had shown a high mortality, had several profuse hemoptyses, the last of which proved fatal. Section showed syphilitic ulceration of the trachea near the bifurcation. The points of note were the blood-tinged sputum which preceded for some days the first hemoptysis and the total absence of pulmonary or laryngeal tuberculosis. A histological study showed that a granulomatous tissue had been deposited in the trachea and had undergone caseation and subsequent ulceration. Tuberculosis and simple granuloma formation could be excluded on histological grounds alone. Aside from syphilitic aortitis the patient was apparently free from other lesions.

Münchener medizinische Wochenschrift.

June 25 and July 9, 1912.

Slow Escape of Pleural Empyemata into the Lungs.—Schmidt after mentioning the brusque escape of empyema pus into the bronchi in which the fluid is sometimes expectorated by mouthfuls, confines his attention to the slow, deliberate type of escape as illustrated by three personal cases. This termination is of course rare—how rare does not seem to be established. One patient with symptoms of pleurisy began to spit pus. Pus was obtained by puncture. The sputum contained no tubercle bacilli or elastic fibers. It was free from odor. Physical diagnosis including *x*-raying showed a clean cut pleural exudate with no complication other than the purulent sputum which must therefore have proceeded from the empyema. The sputum remained purulent for a number of days, slowly disappearing. There is no mention of thoracentesis aside from the diagnostic puncture. In the second case the trial puncture brought away fetid pus. Aspiration was practised with subsequent insufflation of sterile air and iodine fumes. The pus, tested in the incubator for gas forming bacteria was found to be practically sterile in this respect. The patient did not begin to spit pus until after the puncture. This was free from odor, contained no tubercle bacilli or elastic fibers. The *x*-ray in this case showed air in the pleura, a fact which in the absence of gas forming pus would suggest the entrance of air through the ruptured lung parenchyma. Points of special interest comprise further the indifferent character of the pus in the sputum. This contained nothing whatever upon which any sort of microscopic diagnosis could be based. The fact that in one case there was no purulent sputum until after the trial

puncture would cause strong suspicion that the latter had involved the lung. It is further recorded that in the first patient the sputum became tinged with blood after the puncture. There seems indeed no reason why an empyema of the type described should rupture into a sound lung. Associated pneumonia with abscess formation would explain the complication but this possibility seems to have been excluded. With the evidence at hand two of the three cases must have been due to rupture into the air cells of unknown mechanism.

Epilepsy from Electric Currents.—Jolly discusses this subject as a document to the causation of epilepsy from electric traumatism of the cortex in presumably sound subjects. Much care is necessary to exclude traumatic psychoneurosis and hysteria. A young motorman touched a live wire in the electric trolley system. Aside from the usual burns he had severe headache and abdominal pains for a short time, but was soon able to resume his duties. Two weeks after the accident he suddenly became prostrated and lost consciousness. He no doubt had an epileptic attack but there were no witnesses. The post-epileptic state was in evidence and a few days later he was seen to have a convulsive fit. He also began to have nocturnal attacks, and in fact within a very short time became a confirmed epileptic unfitted to earn his living (capacity reduced to one-third). Traumatic psychoneurosis was readily excluded. The patient's mental faculties show some deterioration as a result or concomitant of the frequent seizures. The number of volts he received of the alternating current were from 450 to 500. Much less than this quantity has often caused death. There are a few similar, more or less questionable cases on record. Convulsions at the time of injury are of course a different matter. These have also been seen in lightning stroke. It is of course impossible to prove that the author's patient was not a latent epileptic but all facts point in the opposite direction.

Interesting Case of Tetanus.—German describes a case with this title. The nature was at first obscure and the diagnosis was influenza, made from the association of sore throat and myalgia. The only possible post of entry for tetanus virus was a slight, already healed wound of the little finger. The evidence of tetanus were soon unmistakable. The jaws were not fully locked, and patient took liquid food through a nursing bottle. Although apparently a very sick man, the temperature was not high. There was profuse sweating. The patient had seizures of screaming which he could not suppress. They occurred at regular intervals and were believed to be due to the irritation of some portion of the central nervous system, in connection with the temperature center and perhaps the vasomotor center. The cries were not due to suffering, which had not been marked. The case was of the chronic type and slowly improved, perhaps without reference to the treatment. Serum was given, but did not seem to modify the course of the disease. The atypical character was pronounced. The enormous degree of sweating doubtless kept down the temperature and toxemia. The cries were much like the initial cry of epilepsy and the cry of the katatonic.

Sarcoma of the Humerus Successfully Treated with X-Rays.—Bülow-Hansen reports the case of a man whose life was perhaps saved only to be forfeited soon afterward by an accident. This enabled a confirmation of the diagnosis. Patient was a boy of 10 years who had begun to suffer with pain and impaired function in his right shoulder. The *x*-ray showed the presence of a probable sarcoma of the head of humerus. Operation was refused as the boy's right arm might have been permanently disabled and he was an only child. There was already some atrophy from disease. As a compromise a short period of treatment with the rays was instituted. A steady, uniform improvement began, checked up by frequent radiographs. The area which was rarefied by the tumor began to fill up anew with bone. After the fatal accident, the specimen was obtained, and the diagnosis was confirmed. Osteomyelitis, tuberculosis and syphilis could be excluded. The treatment had caused neither inflammation nor necrosis. Histologically a cure could not be predicted as tumor tissue was still present. The disease, however, had been much more than arrested, for the patient had recovered the use of his arm, and his general health, which had begun to fail, was restored.

Clinical Method for Estimating the Time of the Blood Circulation.—Bornstein has tested a new method for determining in individuals rapidity of circulation. Thus far one can form only an idea of the least time required for the cycle. The principle involved is the inhalation of carbonic acid. As soon as the latter reaches the respiratory center quickened respiration will at once be evident. Attempts to measure the rapidity of the circulation go back for many years, but inhalation of gases as a measure is doubtless new. Naturally but one-half of the circulation is measured by this method. It requires a few tenths of a second for the blood to travel from the lung capillaries to the nerve centers. The author appears to believe that this method is capable of considerable amplification.

Deutsche medizinische Wochenschrift.

June 27, 1912.

Spontaneous Cure of Cancer.—Theilhaber, after calling attention to three cases seen by him in which patients remained permanently cured after hysterectomy for cancer, despite the fact that outlying nodules of disease must have been left behind, goes on to describe an inoperable case of this disease in which he obtained a cure without the knife. The treatment consisted of curetting and thermocauterization, followed with a course of arsenic injections (cacodylate of sodium hypodermically), and the use of the hot-air douche, hot-water injections, and sitz baths. Under this treatment the parametrium, which had been infiltrated with cancer once more became supple and the uterus could be freely moved. The general health improved until it became complete. The author, as the title implies, gives credit to natural forces for the cure, but the treatment was none the less responsible. The efficacy of hot air is apparent in a case of beginning recurrence of cancer of the breast in which complete arrest followed the treatment. Similar cases reported by others lead the author to urge a more energetic after treatment of cancer, especially after incomplete removal. He enumerates many resources. To make the scar supple he uses fibrolysin. The hot-air douche tends by causing active congestion to render the local nutrition normal. He would use oöphorin, arsenic, mountain air, sun baths, and sea baths.

Gout Tophi in the Eyelids.—Ebstein discusses the rarity of this complication or of its recognition, as ophthalmologists and dermatologists give only a perfunctory mention of the subject. There should be no real diagnostic problem, although the condition resembles ordinary milium. English authorities on gout, such as Garrod and Duckworth, appear to be familiar with tophi in the eyelids and mention their close resemblance to milium and small atheromata. In the illustration of the author's case the resemblance to a small sebaceous cyst of the eyelid is marked. Diagnosis was evident from the presence of tophi in the ear, but the deposit was removed and examined. Despite the statement of Hirsch that removal is useless because of certain recurrence this sequel did not develop.

The Collapse Action of Hormonal.—Zuelzer who introduced the peristaltic hormone into medical practice, comes to its defense in connection with the fatality re-

cently reported. Hormonal has now been used by the intravenous method over 4,000 times without any untoward reports. Then, suddenly, cases of collapse begin to appear in literature, including the fatal case. Should these accidents be set down to the pure drug action or to impurities or technical errors due to carelessness? The author has always insisted that hormonal be thrown into the vein drop by drop. But even with all technical precaution he himself had four cases of collapse in quick succession. A laboratory investigation showed the presence of an albumose upon which was placed the responsibility for the untoward phenomena. This appeared to be formed during the process of manufacture. All the preparation on hand was taken off the market, and a new supply thought to be free from impurities and danger when properly used, will be substituted.

Fulminating Psychosis with Pemphigus Acutus.—Landsbergen relates a case of psychosis developing in a subject of possibly tainted stock—although there was no absolute evidence to this effect—upon a somatic basis, also expressed by an outbreak of pemphigus. The psychosis was in evidence first, although a marked failure in general health accompanied it. There was an acute phase of excitement, which began to yield and bade fair to end in recovery. At this juncture the eruption first appeared, accompanied by evidences of severe infection. Strange to relate, despite high temperature and the recent acute psychosis there was none of the delirium which was confidently expected. This was the more surprising because the patient's mind had not been fully restored. The pemphigus ended fatally, a termination which had been anticipated from the association of this eruption with high temperatures, arguing the existence of a septic process. The blood contained hosts of staphylococci. Patient probably had a special disposition toward the formation of blebs. The rationale of the development of the psychosis is obscure. That it was connected with the sudden failure of nutrition seems obvious. The way was also paved for a blood infection (from an unknown focus) which manifested itself chiefly by acute septic pemphigus.

The "Signe du Sou" in Pleuritis Exudates.—Slatowerchownikow refers to Pitres's sign first described in 1898 and obtained as follows: An assistant holds firmly against the thorax of the pleuritic subject about to be examined a small copper coin. He strikes this with a second coin, while the examiner applies his ear to the opposite side of the chest at the same level. Certain acoustic phenomena become noticeable. If the sound has to pass through spongy or alveolar tissue it becomes muffled, but if a collection of gas interposes it becomes intensified. If a solid mass or liquid effusion interposes a distinct metallic clink is heard. The sign has been used chiefly in pediatric practice, where it is of value in that it makes up in part for inability to get the pectoral fremitus. The author who has tested the resource in the medical clinic at Kiew gives his conclusions as follows: The "signe du sou" is a very valuable test for exudate in the pleural cavity, including the determination of its boundaries, and is superior in this respect to percussion and the vocal fremitus. It will enable us to do away with trial puncture.

Diagnosis of Malignant Pleural Tumors.—Huismans sums up a clinical and pathological study of this subject as follows: Of two cases investigated, both were pronounced clinically to be primary endothelioma of the pleura. Autopsy, however, showed that in case I the tumor was a carcinoma, secondary to a latent cancer of the stomach. Case II proved to be a primary cancer. In the clinical presence of these cases the questions arise: "is the growth primary or secondary?" and "is it epithelioma or endothelioma?" The error in the first case was unavoidable before death The distinction between cancer and endothelioma may be futile, for very recent studies appear to show that at least the endothelioma so-called grows from the epithelium of the pleura.

Successful Sterilization of Diphtheria Carriers.—Petruschky of Danzig states that after long efforts he has succeeded in getting authority to hold diphtheria patients in the city hospital until they should be completely freed from bacilli. A young woman with tonsillar patches who presented bacilli in the throat was found to be a potentially dangerous carrier long after her recovery. A culture of her own bacilli was made, killed, and sterilized, found to be harmless to guinea pigs, and injected subcutaneously without reaction of any sort. A second was given four days later. Six days after the first injection the patient's throat and nose were free from bacilli and she was discharged. In a number of other cases of acute carriers so-called the same results were obtained. To sterilize a chronic carrier might prove to be a different proposition and such cases can only be located by accident or by testing a large number of people. One was finally encountered, a tuberculous suspect with diphtheria bacilli in her sputum. She was free from tuberculosis by all the usual tests. Attempts were first made to improve her nutrition, but these failed. Injections were not ventured, but dead cultures of bacilli were rubbed into the skin and within a few weeks the sputum became sterile in respect to diphtheria. Her nutrition improved notably.

Kocher's Present Work in Strumectomy.—At the close of an article on goiter and its treatment Kocher states that he completed his fifth thousand last March. In one series of 603 uncomplicated cases, many of whom were, however, severe, he did not lose a patient. There were 26 cases of malignant struma in the series and 19 second operations. In a series of 91 cases of intrathoracic struma he lost three patients, but in none of the cases was the operation itself the cause. Thus in all cases usually termed plain goiter there was practically no mortality from the operation in 736 interventions. The goiter heart of ordinary goiter is no longer a contraindication if the operation can be done seasonably. There is no summary of his complicated cases in which there was doubtless more or less operative mortality. The author closes with the statement that medical treatment is sufficient for slowly progressive goiters which do not cause stenosis, and often yields brilliant results.

Röntgen Studies of Ingesta and Excreta.—Schwarz gives a subject a certain ration of food and traces its progress through the alimentary canal. In a young, healthy subject, who has regularly each forenoon a formed stool, most of the food taken on the previous day up to the time of the stool lies in the rectum and lower sigmoid. But the balance may be seen scattered through the entire colon. The morning stool does not empty the bowels, for only the accumulation at its lower end is evacuated. Above this mass the small scattered lumps of fecal matter linger, to be incorporated in time with the bulk of another day's ingesta as it passes downwards. Not until the third day do the entire ingesta of a given day leave the body. Hence each morning stool is made up in part of food eaten two days earlier. In order to demonstrate these results, the author says, bismuth has of course to be mixed with all the food ingested, and the amount and kinds of food are standardized.

Bactericidal Action of Radium.—H. Chambers and S. Russ conclude from their experiments that the emanation in concentrations of less than a milli-curie per cubic centimeter has a marked bactericidal action. Agglutination of bacteria in distilled water is an early sequel to the irradiation. Bacteria are more quickly destroyed by the emanation than are opsonin and leucocytes.—*Proceedings of the Royal Society of Medicine.*

Insurance Medicine.

The Effect of Trauma on Sugar Excretion.—Ebstein tells of a diabetic in whom trauma was followed by a neurosis, and as a consequence, the excretion of sugar was markedly increased. He thinks that any injury to a diabetic *may be* followed by rapid exacerbation of symptoms, but such result need not always take place. Ebstein warns against acceptance of a single examination as proof of increase in elimination of sugar, for changes in the amount of sugar excreted are frequent in the usual course of a diabetes. Moreover, mere increase in excretion of sugar need not change the prognosis in any individual case; such other data as the excretion of acids, albuminuria, loss of weight, etc., should be likewise ascertained.—*Zeitschrift für Versicherungsmedizin*, April, 1912.

Life Insurance and Carious Teeth.—A. M. Nodine, D. D. S., says that life insurance medical examinations have one very weak link, namely the failure to appreciate the fact that diseased teeth and gums are constant and insistent menace to the health of an individual, as well as to his neighbors. Nodine says that the present great function of a medical examination for life insurance is to guard the company against insuring any applicant with any illness, disease, disorder or condition that their mortality tables show and increased medical observation shows, tends to shorten life. To limit such examinations to such negative function alone is a very short-sighted policy. The medical organization should be used for other purposes, namely: to suggest to the applicants that if certain conditions are corrected, they will be accepted by the company. Secondly, after the applicants are accepted, they should be examined at certain regular intervals so that any condition or disease that may shorten life may be anticipated. Thirdly, policy holders should be provided proper medical treatment if they have fallen sick. Fourthly, a general educational campaign should be instituted acquainting the public with the proper mode of living, proper personal hygiene, etc.

The establishment of sanatoria for tuberculous policy holders, and the establishment of a "conservation department" show that the insurance companies are beginning to see the possibilities of their medical departments. Nodine thinks that in many conditions, which exclude an applicant from insurance, septic mouths and carious teeth play a very important rôle. In tuberculosis, the accumulation of calculus and food and the presence of carious teeth and necrotic roots supply a very efficient reservoir of infection for either the structures of the mouth or other parts of the body. The stomach, the tonsils, the bronchi may be all secondarily infected from such pockets of disease.

Moreover, the author thinks that primary tuberculosis of the mouth is not such a rare disease as is usually stated in textbooks. Many primary cases are taken for secondary affections; the clinical aspects of tuberculosis periostitis and osteomyelitis are very similar, in the bones of the mouth at least, to pyogenic periostitis and osteomyelitis.

Decayed teeth and septic mouths are commonly associated with mouth breathing and may be inciters of it. These conditions are insidious underminers of the natural resistance of the human organism by impairing the digestion and by the gradual production of a general toxemia. In tuberculosis, once it has gained foothold, the final outcome depends upon the integrity of the digestive system, and of the mouth and teeth in the first place. Those patients whose digestive disorders cannot be regulated are doomed from the start.

It seems axiomatic, from this standpoint alone, that life insurance medical examinations should take into consideration the condition of the mouth and teeth, and such examination should receive as much care as the lungs. Indeed, a septic mouth with carious teeth is of more importance as far as prognosis is concerned than a poor family history. No influence is more powerful in resisting disease than sound, clean teeth.—*Oral Hygiene*, May, 1912.

Occupation and Mortality.—Louis Jacquet has studied especially the mortality among dealers in alcoholic beverages. He has found that in all lands persons employed in this way show a mortality above the average. Thus, in Paris, the general mortality of men between 30 and 49 years old is 36.1 per thousand, while among saloonkeepers in the same ages it reaches 46.9. In Switzerland the general mortality at the same ages is 25.8 per thousand, while among saloonkeepers it is 42.59. Most instructive are the figures in England, although they are computed in a different manner. From these it is evident that there the general mortality has progressively diminished since 1880, while the death rate among saloonkeepers has just as progressively risen.—*Zeitschrift für die gesammte Versicherungs-Wissenschaft*, Vol. XII, No. 3.

Accident Insurance of Students in Germany.—Möbius says that, with the exception of the Universities of Tübingen, Halle and Leipsic, the students in the German Universities are collectively insured against accidents, more than half of the universities being insured with one insurance company. In some universities the insurance is obligatory for all students, in others students of certain faculties may decide for themselves in taking advantage of it or not. Numerous officials of universities are likewise eligible, and in certain institutions not only the teaching force but all members of teachers' families over 18 years of age are protected. The insurance lasts from the beginning of one semester to the beginning of another; in two universities it is not in force during vacation time. Accident is defined just as is usual in such insurance contracts, but in certain instances special agreement is made including injuries and infections of medical and veterinary students resulting from the practical work in dissection, hospital work, etc., they are compelled to do.

So far as site of accident is concerned, all buildings under jurisdiction of the university are usually included. In certain instances, accidents anywhere during the semester are included. The indemnities agreed upon vary very much: death is indemnified by from 2000 to 5000 marks. Invalidism brings from 9000 to 25,000 marks. From 3 to 6 marks are granted for absence from work because of accident. Premium rates are usually very low, the lowest being half a mark for the semester; in some institutions students of medicine and chemistry pay higher rates than those in other faculties. However, the difference in the rates and in conditions of insurance in the different universities show that no scientific basis has been worked out, and Möbius suggests that this should be done in the near future. He thinks that the universities should unite and make a collective contract with accident insurance companies, so that uniformity of rates and indemnities may be attained.—*Zeitschrift für die gesammte Versicherungs-Wissenschaft*, May, 1913.

Book Reviews.

AUTOBIOGRAPHY OF A BABY. Told to THOMAS LINDSLEY BRADFORD, M.D. New revised and enlarged edition. Price, 50 cents. Philadelphia: David McKay, 1912.

THIS little volume presents in an entertaining manner the main facts in nursery hygiene from the viewpoint of the baby himself. The comedies and tragedies of infant life are vividly portrayed. The pacifier, soothing syrups, etc., come in for their just share of condemnation, although some debatable questions, such as the causation of adenoids, are discussed as if there could be no difference of opinion about them.

YEAR BOOK OF THE UNITED STATES DEPARTMENT OF AGRICULTURE, 1911. Washington: Government Printing Office, 1912. Octavo, 732 pages, numerous illustrations and full-page plates in black and colors.

THE current Year Book of the Agricultural Department is of fully equal interest with recent numbers. The contents is, as usual, varied and interesting, the Report of the Secretary being followed by articles on Bird Reservations, Soils, Climate, Plant Pathology, Forrestry, Irrigation, Interesting or New Fruits, etc. A chapter is devoted to the new respiration calorimeter for use in the study of problems of vegetable life. The book concludes with the usual statistics of agricultural products. More space than usual is this year devoted to Insect Pests and the means of combating them.

THE KEY TO SEX CONTROL. THE CELLULAR DETERMINATION OF SEX AND THE PHYSIOLOGICAL LAWS WHICH GOVERN ITS CONTROL. By PERCY JOHN MCELRATH, M.D. New York City: Published by the Author, 1911.

THE present volume which is stated by the author to be the outcome of several years of study and experiment in the field of cell life, constitutes an interesting addition to the already extensive literature on this subject. Dr. McElrath states that his book is founded on the belief that the universe is governed by law and that the problems of heredity, sex, and development in the human species are based on infallible natural laws which may be studied and applied in a practical manner. It seems possible that sex may be predetermined in the lower animals, and breeders have made a practical application of this knowledge, but in the human species the sexual life is so differently constituted that any control, such as is proposed, will probably do very little to adjust the relative proportion of male and female children. As a basis for his conclusions, Dr. McElrath presents in a very complete and satisfactory manner the anatomy, physiology, and embryonic development of the generative organs and their functions. His descriptions contain some very novel deductions, particularly as regards the structure and behavior of the spermatozoa, which descriptions cannot be reproduced within the space of a brief review and for an understanding of which it is necessary therefore to refer to the book directly. An interesting point which he makes in relation to menstruation is that the rupture of the Graafian follicle does not normally occur until from five to sixteen days after the menstrual flow has ceased and that when the Graafian follicle is ruptured the ovum is normally propelled into the uterine cavity in six to eight hours. The time required for the ovum to reach the Fallopian tube after its extrusion from the Graafian follicle will always be problematical and subjected to variations in the same individual. Gravitation is claimed to be the only way to influence this, and a practical application of this knowledge consists in the direction given to a patient to lie on the side of that ovary from which the mature ovum is expelled, if this knowledge is possible. McElrath claims, moreover, that a Graafian follicle is not mature until it can be ruptured by orgasm in the female, and this period is not complete until from seven to fourteen days after the last day of the menstrual flow. An attempt has been made to explain the cellular basis of sex by a number of personal experiments in dogs and hens, which the author claims are sufficient to formulate rules for application to the human species. A number of statistical tables based on the author's personal observations in certain families are included for the purpose of confirming the author's theories along these lines, which it is necessary to consult in the original work. Dr. McElrath goes so far as to formulate a series of laws which govern the production of male and female offspring and even gives final instructions as to how a successful result in this direction may be accomplished. These results seem to depend on which day after menstruation insemination occurs and also on the character of the spermatozoa, whether young or old. He believes that young or recently formed spermatozoa are male producing and the older ones female producing. Whether it will be possible to disseminate a practical knowledge of these sex laws among the laity is questionable, although such a dissemination is in accord with the tendency of the present day, as regards a better knowledge of the physiology of the human organism by its possessor. Among the population at large, however, it would be a very difficult matter to control the relative proportion of the sexes, and we doubt very much whether among the highly organized members of our race it would even be advisable to have this matter under control, as the mental strain and uncertainty might have an effect, especially on the mind of the mother, which is far from desirable.

PRACTICAL GYNECOLOGY. A COMPREHENSIVE TEXT-BOOK FOR STUDENTS AND PHYSICIANS. By E. E. MONTGOMERY, M.D., LL.D., Professor of Gynecology, Jefferson Medical College; Gynecologist to the Jefferson Medical College and St. Joseph's Hospitals; Consulting Gynecologist to the Philadelphia Lying-In Charity, the Kensington Hospital for Women, and Consulting Surgeon to the Jewish Hospital. Fourth edition revised and rearranged. With five hundred and eighty-nine illustrations, the greater number of which have been drawn and engraved specially for this work, for the most part from original sources. Price $6.00 net. Philadelphia: P. Blakiston's Son & Co. 1912.

THREE revisions of Professor Montgomery's text-book of gynecology have rapidly succeeded each other since the original publication in 1900, and in this, the fourth edition, the author has revised and rearranged the work so as to bring it up to date with progress in this subject. The author has attempted a very complete presentation of all that is important in gynecology, but it seems unfortunate that greater attention was not accorded to the arrangement of the subjects or greater care exercised in the proof reading. Many typographical errors are to be found scattered through the book, and in one instance two paragraphs are inserted in a description of chronic endometritis, which evidently belong to some other section. Mistakes in spelling are numerous and there are many incorrect terms, such as "diphtheric," which cannot be regarded as correct usage. Some question may also be interposed in regard to certain of the author's classifications, such as a division of tumors into genital and puerperal. A careful reading of the text fails to show what these and other distinctions are based on, particularly the puerperal group, in which physo-, hydro-, and pyometra are included with uterine cancer and mucus polyps. This is confusing to say the least. The book presents most of the accepted facts in gynecological pathology and therapeutics and the illustrations are generally well selected, but it would appear necessary to subject the book to a more careful revision before it can be regarded as more free from criticism than the present edition, which gives one an impression of being rather carelessly put together and incomplete.

SURGICAL OPERATIONS. A HANDBOOK FOR STUDENTS AND PRACTITIONERS. By Prof. FRIEDRICH PELS-LEUSDEN, Chief Surgeon to the University Surgical Clinic and Chief of the University Surgical Polyclinic in the Royal Charity Hospital of Berlin. Only authorized English translation by FAXTON E. GARDNER, M.D., New York. with six hundred and sixty-eight illustrations. Price $7.00. New York: Rebman Company. 1912.

PROF. PELS-LEUSDEN has written here a very satisfactory work dealing largely with present day German surgical practice, and the completeness of the same is well shown from the study of any one chapter taken at random, such as that on anesthesia in the first part of the book, in which we are furnished with a detailed résumé of a great many more methods than are contained in the average surgical text book. The same may be said of the rest of the book's contents. After an introductory chapter on antisepsis and anesthesia, the book deals with the blood-vessels, the extremities, the head, the neck, the chest, the abdomen, and the urogenital organs. The book is well printed and bound and the illustrations, with the exception of some that have been borrowed from other sources, are well selected and generally satisfactory. We cannot, however, speak well of the English translation, which is not well done, and distracts the attention which the reader should be able to give to the subject matter of this work. Literal translations of German idioms, the frequent insertion of parenthetical clauses, numerous grammatical errors, and careless proof reading are among the faults most evident. If the English translation had been more carefully done, the book would deserve and would undoubtedly meet with a favorable reception.

Society Reports.

AMERICAN THERAPEUTIC SOCIETY.

Thirteenth Annual Meeting, Held at Montreal, Canada, May 31 and June 1, 1912.

DR. ALEXANDER D. BLACKADER IN THE CHAIR.

Friday, May 31—First Day.

Address of the President.—DR. ALEXANDER D. BLACKADER of Montreal, stating that the society met this year under the auspices of McGill University, gave a sketch of the history of the city of Montreal and the founding of the university; after which he went on to say that, as given in its constitution, the object of the society was the promotion of therapeutics, a term which might be made to cover the whole of medicine, as well as surgery. Employing the term in the more limited meaning under which it was commonly understood, he had asked himself whether to-day therapeutics took the place it surely ought to hold in medical teaching and in advanced medical thought. To many it appeared to fail in doing so, and there were few of our great internists who had not for many decades been more or less permeated with "Osler's black, helpless, hopeless therapeutic pessimism." Personally, he could recall the comparatively numerous instances in which bleeding was recommended, the frequency with which mercury was pushed, in many inflammatory conditions, until the gums were touched, and the confidence with which tartar emetic was given in the early treatment of pneumonia, when he was a student of medicine in the sixties. He had a vivid recollection some years later of poring over the pages of his Ziemssen by night, reading the enthusiastic Liebermeister, and on the following day dosing his toxic typhoids with 20 or 30 grains of quinine, given two and three times daily, in the vain hope of lowering temperature and antagonizing the infection. Often he had sat up all night, at the crisis of a pneumonia, administering brandy with a free hand, and it was but yesterday that, to quote Osler, he had "plunged his sizzling hot typhoid patients into a bath of iced water for a quarter of an hour at a time, and watched them, all cyanosed, shiver and chatter in a vain attempt to regain at least comfort." Among the hundreds of drugs in our Pharmacopœias and Dispensatories, those which cured (our specific remedies) might be counted on the fingers—some would even say on the fingers of one hand. All the others assisted us only in the relief of symptoms, and too often, in this symptomatic treatment, the physician trusted to nature and played to the gallery. And, in trusting to this *vis medicatrix naturæ*, what a wonderful revelation of her powers in combating disease had been made to us by the studies of Metchnikoff, Ehrlich, Morgenroth, Wassermann, Wright, and many others. How dimly had we, up to the present, appreciated the fact that there resided within the animal body a set of potential forces capable, when aroused and stimulated, of exercising a highly effective control over almost all forms of disease. In the elucidation of these mysteries of nature the general practitioner had but a small place, for, as a rule, such investigations could be carried on only in institutions endowed by government, as in Germany, or by private individuals, of whom America afforded so many notable examples. Our belief was that in the strengthening of this wonderful mechanism of nature lay the therapy of the future, but there was still an infinity to be learned; for the mysteries of the antibodies had as yet scarcely been fringed. In connection with these thoughts we might recall that no advance in therapeutics had been of greater value to the world than the modern appreciation of the advantages arising from the breathing of fresh air; of sleeping in it, working in it, and, as far as possible, of living in the open. It was undoubtedly one of the greatest stimulants to the activities of the phagocytes and to the development of the various forms of antibodies which we to-day possessed. Doubtless, also, the great value of climatotherapy, hydrotherapy, psychopathy, and possibly of electrotherapy depended upon a similar stimulation of this defensive mechanism of nature. Bier's method of inducing local hyperemia, too, afforded the means for the reinforcement of these natural forces at any desired spot. Much valuable thought along these lines had likewise been given to the profession by our revered confrere, Dr. Sajous, who in his philosophical presentation of the adrenal, thyroid, and pituitary glands had told us of the active part which he believed they take in the development of antibodies. The profession all over the world placed a high estimate on the researches which his enthusiasm and unflagging energy had carried out in connection with the various activities of these internal secretions. Dr. Blackader was, however, by no means willing to be classed as a hopeless pessimist regarding the value of drug therapy. On the contrary, he had a strong belief in the limited value of the great majority of our pharmacopœal drugs when used with a definite knowledge of their action. Only when we knew the exact physiological action of a drug, both in health and under pathological conditions, were we able to use it in a useful, purposeful way and to avoid its undesired and too often toxic side-effects. The outlook in therapeutics had been dark because hitherto therapeutics had been taught as a mere empiricism. The future was bright because in all our best medical schools the students to-day were taught practically, as well as theoretically, the action of each drug; and it was his belief that if the many brilliant internists who were therapeutic pessimists had had the advantage of a practical training in a modern pharmacological laboratory during their student days, they would now be more optimistic, as well as clearer in their therapeutics. During the past year the cause of therapeutics had been greatly encouraged by the success attending Ehrlich's persevering investigations into the modifications of therapeutic action by variations in chemical structure. A similar investigation was now being carried on by Flexner, who was endeavoring to elaborate some modification of hexamethylenamine which, while retaining its central formation possessing an effective germicidal action, might develop a specific affinity for and a toxic action on the microörganisms of poliomyelitis. Owing to the growing demand of the profession for new agents, there had been forced upon its notice an enormous number of new drugs of whose action we had no knowledge except the statements of the commercial houses introducing them. He believed it was now generally recognized by thoughtful physicians throughout America that purely commercial interests had had too much to say during the last few years as to the composition and the nomenclature of many drugs now much used by reputable physicians. In the detection of the false and the uncovering of wrong the work done by the Council on Pharmacy and Chemistry of the American Medical Association had been of greatest value, and he desired to say how highly the profession in Canada appreciated the proposition of the council to institute a critical study of many of the more urgent problems in therapeutics which demanded investigation.

Obituaries.—Obituaries of the following deceased members were read: Carl Beck of New York, ex-president of the society, by Dr. Reynold Webb Wilcox; John H. Musser of Philadelphia, by M. Howard Fussell; Louis Nelson of Boston, by Dr. Clarence J. Blake; Henry A. Robbins of Washington, D. C., by Dr. J. W. Chappell.

Report of the Committee on Prize Competition in Therapeutic Research.—The Committee on Therapeutic Research reported that no report on a subject of therapeutic research had been received in the competition offered by the society, and recommended that the competition, instead of being confined to members of the American Therapeutic Society, should be thrown open to the profession at large; also that the amount of the prize offered should be increased from $200 to $300, or more. This report having been referred to the council, the council recommended that the prize should be $500 and that the competition should be open to the medical profession of the United States and Canada, and these recommendations were afterwards approved by the society.

Some Common Types of Hyposecretion of the Thyroid.—Dr. OLIVER T. OSBORN of New Haven, Conn., said the object of his paper was to present a few types of cases which he considered to be due to subthyroid secretion. Unquestionably, many of these patients were psychopathic, and might improve under mental treatment. The thyroid was peculiarly susceptible to mental stimulation and to mental depression, and anything which quieted mental excitation would diminish a hypersecretion of the gland, while anything which removed mental depression would increase a subnormal secretion of the gland. Some cases of disturbed thyroid secretion looked like pure hysteria, and hence many would be inclined to ascribe the favorable results obtained by treatment directed to the thyroid as simple instances of mental impression. As this gland had a good deal to do with the condition of the blood, when it was subsecreting it would sometimes allow a condition of this to occur which was not dissimilar to that of hemophilia; in other words, a very aplastic condition, perhaps with a diminished calcium content. When we recognized the very important part the thyroid played in the life of the female, it was not to be wondered at that the gland was

apt to become overworked and that it should finally hypofunctionate. The conditions for which, in his opinion, thyroid subsecretion might be responsible were, cretinism, some forms of eczema, some forms of asthma, infantile obesity, adiposis dolorosa, lipomatosis, some digestive disturbances, some forms of melancholia, chlorosis, amenorrhea, myxedema, senility, and perhaps Raynaud's disease. The stimulants to thyroid secretion were great sorrow great joy, nervous tension, sexual excitement, genital disturbances (especially uterine), pregnancy, cerebral stimulants such as coffee, tea, and alcohol, and such drugs as arsenic, iodides, phosphorus, salicylic acid, pilocarpine, and, of course, thyroid extract. The speaker gave reports of a number of cases illustrating the various conditions due to thyroid hyposecretion and the benefit derived from the administration of thyroid extract, and, in conclusion, urged that, when thyroid was needed, but small doses be used, as it was an agent potent for harm. When given to patients who ought not to receive it, it would make their symptoms worse, and sometimes but a little of it would push a wavering thyroid gland to hypersecretion and Graves' disease. Much of the thyroid substance on the market was inactive, but a small amount of coincidentally administered iodine, as an iodide, would render it active.

Dr. Francis M. Pottenger of Los Angeles, Cal., mentioned a case illustrating the value of recognizing the existence of abnormal thyroid secretion; that of a young married woman whose condition was similar to that of one of Dr. Osborne's cases. She was sleepy, listless, sluggish, and forgetful of her children and her household duties, and had, indeed, become so degenerate that her husband left her. Having been led to consider thyroid hyposecretion as the possible cause of trouble, the speaker gave her thyroid extract, and the result was that, in the language of her family, she was "made over."

Notes on the Differentiation of Cardiac Arrhythmias and Their Treatment, with a New Time Marker.—Dr. Thomas E. Satterthwaite of New York said that the subject of cardiac arrhythmias took on a new phase as soon as graphic methods were used for their differentiation, and most of the discoveries due to them, amounting practically to a revolutionizing of the whole matter, had been the work of the last ten years. It had now been generally accepted that arrhythmias might be satisfactorily classified with reference to the five physiological attributes of heart muscle demonstrated by Gaskell in 1882; rhythmicity, irritability or excitability, contractility, conductivity, and tonicity. Corresponding to the first four of these, there were four distinct varieties of arrhythmias capable of being demonstrated by graphic tracings. To the first of the varieties he had given the name of pneumogastric arrhythmia, because of its close relation to pneumogastric influences, and it was a variation from the standard cycle within physiological limits. In the second variety, the extrasystolic there were extra, or supernumerary, contractions, from stimuli not originating in the sinus venosus like the pneumogastric arrhythmia, though in the main the regular or sinus rhythm was maintained. There were two principal types, the ventricular and the auricular. All extrasystoles were followed by a pulse period rather longer than the normal. The really most important function of heart muscle was contractility, and a striking example of its abnormal characteristics was seen in the alternating pulse, in which the alternation of large and small beats was continuous, thus distinguishing it from extrasystolic arrhythmias. Another variety of abnormal contractility was seen in auricular fibrillation, where the cardiac cycles varied so much that there was no sequence of beats having the same length. This was responsible for most of the disturbances of the ventricular system. Indeed, in the vast majority of instances a sphygmogram showing that no two successive beats were of the same length meant the diagnosis of auricular fibrillation. In affections of conductivity the normal stimulus, which started in the sinus and passed over the bridge of His to the ventricle, might be delayed in its course, might not cross at all, or might be arrested beyond the bridge; any one of which conditions might produce heart block. The pulsus infrequens, improperly called the slow pulse, almost always indicated a loss of conductivity. Disturbed rhythmicity, the first of the types of irregularity, did not as a rule warrant us in sounding notes of alarm, as it was really physiological. In extrasystole there might be a neurotic base, or it might result from the pressure of gas from gastrointestinal fermentation; or, again, it might be a reflex from the alimentary canal, as in indicanuria. In the one case, sedatives, such as camphor and bromides, were useful; in the latter, remedies regulating gastric or intestinal digestion. If the extrasystoles were due to overuse of coffee, tea, or tobacco, the indications were evident. In auricular fibrillation no remedy was so satisfactory as digitalis or its congeners, of which strophanthus was the best. Acute heart block might be due to digitalis, in which case the drug should of course be at once discontinued. If syphilis were present, antisyphilitic treatment should be pushed. Atropine, 1/60 grain, was available as a test to determine whether the heart block was due to a lesion of the pneumogastric.

On account of the expensiveness of the Jacquet time marker, Dr. Satterthwaite had devised an American time marker, which could be made at home and involved no great expense. No large institution, he said, ought to be without a good polygraph.

The Relation between High Blood-Pressure and the Adrenals.—The symposium was opened by Dr. Charles E. DeM. Sajous of Philadelphia, with a paper on this subject. The functional relationship, he said, between the adrenals and the blood-pressure, through the direct action of their secretion upon the muscle fibers of the heart and arteries, as well as the fact that the arterioles received the brunt of the contractile action of the secretion, was now well established. On account of the limited time at his disposal, he could treat of but one of the morbid effects which this action of the adrenal product might entail, arteriosclerosis. That the production of vascular lesions resembling at least those of arteriosclerosis was caused by injections of adrenalin had been attested by many observers. Some of these, it was true, had argued that the lesions differed from typical arteriosclerosis, but when we reflected that syphilis was one of the important etiological factors in arteriosclerosis, it seemed clear that this view was not well founded. Having referred to other objections, he said that McConnell had stated very recently that the changes which developed did not correspond accurately with those of the ordinary nodose sclerosis, but they were indistinguishable from the changes seen in Moenckeburg's type of medial degeneration. The statistics as to causation of 6,129 cases of arteriosclerosis in various parts of the world suggested a toxemia as the common pathogenic factor of the condition—specific toxins where infectious diseases were the causative agents; excessive metabolism and tissue waste products in hard physical labor; purin bases in gouty cases, as well as those due to chronic lead poisoning. All these main causes of arteriosclerosis could thus be summarized by the one word, intoxication, as long ago emphasized by Traube and Rokitansky. As to the relationship between this general toxemia and the adrenals, it was a fact that all but one (alcoholism, which had not been studied in this connection) of the morbid conditions known to provoke arteriosclerosis had also been known to cause overactivity of the adrenals. He cited authorities in reference to these several conditions, and said that this evidence was further sustained by the fact that Coplin, in an examination of the adrenals of 22 cases of arteriosclerosis, found that 17 were markedly altered, the exceptions being the seat of a tuberculous process in three instances and of a secondary neoplasm in one. Again, potassium iodide, our best remedy in arteriosclerosis, had been found to inhibit the secretory activity of the adrenals. We were thus brought to attribute to adrenal activity the production of clinical arteriosclerosis, a process similar to that caused by Josué when he injected adrenalin experimentally. Now, whether we injected adrenalin or whether the adrenals were overactive, what effects were produced on the vascular system *per se* were borne directly by the terminal arteries. This appeared to the speaker to furnish the key to the situation, or, rather, the missing link of a chain of facts which clearly explained the pathogenesis of at least the familiar forms of arteriosclerosis from beginning to end. Briefly, the pathogenic toxic agent, whatever it happened to be, caused more or less violent overactivity of the adrenals (probably by exciting their center), and thus increased their secretory activity sufficiently to reduce more or less the caliber of the arterioles from which the vasa vasorum received their supply. Deficiently nourished through these, their nutrient vessels, the medial and intimal vascular tissues degenerated, forming the familiar sclerotic patches.

The Nature of the Cardiovascular Changes in Nephritis.—Dr. Alfred C. Crofton of Chicago said that in attempting to interpret the cardiovascular changes occurring together with nephritis it was important to remember that, on the one hand, many cases of nephritis ran their whole course without the appearance of any cardiovascular manifestations whatsoever, while, on the other, cases of nephritis sometimes occurred in which increased blood tension made its appearance within forty-eight hours after the onset of the renal difficulty and rapidly led to organic cardiac and arterial lesions which proceeded

throughout the course of the disease. The first part of the paper was devoted to a consideration of those forms of cardiovascular degeneration occurring consecutively to nephritis. Of the large number of cardiovascular disorders in which blood-pressure changes either precede or accompany nephritis one could logically distinguish three possibilities: 1. The cardiovascular changes preceded and caused the nephritis. This, he believed, was the sequence of events in true Bright's disease, for in many of the cases of this we saw high tension long before nephritic symptoms appeared. A persistent increase in the arterial pressure ultimately led to degenerative changes, particularly in organs of the body supplied by end arteries, and chiefly the kidneys, the retina and the brain. 2. The cardiovascular changes developed simultaneously with the nephritis. Here some agency must be operative which affected both the cardiovascular apparatus and the kidneys, and to this category belonged chiefly the cardiorenal disorders seen in chronic lead poisoning and, above all, in the so-called gouty diathesis. 3. The cardiovascular changes were manifestly of renal origin, consecutive to the nephritis, and in all probability due to renal inadequacy with retention of urinary end products. It would consequently be seen how important it was from the standpoint of prognosis and treatment to attempt in each case of nephritis complicated with cardiovascular disorders an interpretation of the sequence of events.

High Blood-Pressure Arising from Nervous Strain in Diseases of the Nervous System.—Dr. BLACKADER read a paper by Dr. EDWARD D. FISHER of New York, on this subject. In looking at the subject from his special standpoint, the author said, he would emphasize the fact that many of those conditions already discussed were present and complicated the special disorders of the nervous system—in fact, might be the real cause of the trouble. He would call attention particularly to diseases of the nervous system due to arterial disease, either endarteritis of the atheromatous type or that consequent upon syphilis, to cerebral compression as caused by new growths, increase of cerebrospinal fluid, etc., and to vascular changes due to direct poisons, such as uremia, diabetes, alcohol, etc. In the first group, endarteritis of a degenerative type, a rather general distribution of arterial disease was found; so that, not only was the nervous system involved, showing cerebral and spinal symptoms, but interstitial nephritis and cardiac hypertrophy were also present. In cases under forty, with probably acute cardiac and kidney involvement, we had symptoms peculiar to disorders of the special organs, but no, or only slight, tendency to cerebral hemorrhage or epilepsy, as in older persons. In them the blood-pressure might be temporarily high, but was not continuously so, and was more easily relieved or controlled; while in cases over forty there was a constant high blood-pressure, subject also to marked increase—which was the danger point indicating the probability of a seizure, apoplectic or epileptic. The arterial condition here marked out positively the difference between such epileptic seizures and so-called idiopathic epilepsy, and also that due to a focal lesion. In eclampsia during pregnancy a great and often sudden rise in blood-pressure previous to the seizure was frequently observed, and this was evidently not due to arterial disease, but to some toxic agent in the blood. High blood-pressure when occurring during pregnancy should be regarded as a danger signal. If in syphilitic endarteritis the blood-pressure, contrary to the usual rule, were high, this was to be explained, not by the arterial disease, but by complications; which probably explained the clinical condition, due, as a rule, not to cerebral hemorrhage, but to cerebral thrombosis. In such cases there was a cerebral anemia resulting from a gradual occlusion of the caliber of the vessels by actual thickening of their coats, or actual infiltration of new growth into their walls. Other complications might, however, modify this picture, explainable, as in non-specific cases, as due to exogenous or endogenous causes. In cerebral growths we found cerebral compression, which might also manifest itself by high blood-pressure, permanent or continuous. Here again we found there were variations dependent upon exciting conditions, such as cephalalgia, disease of the kidneys or heart, drugs, etc. The convulsions present might be due to anemia from pressure. High blood-pressure in cerebral tumors, in hydrocephalus, or in compression following trauma might be observed to fall as soon as the skull was opened, or, more surely, on opening the dura, with the escape of cerebrospinal fluid. This was not always the case, however, in decompression operations for traumatism; many such cases continuing to show high blood-pressure and failing to regain consciousness. During cerebral operations taking the blood-pressure was valuable as a routine, as rapid fall indicated the need of stimulation or cessation from further operating at the time. In closing, Dr Fisher emphasized the great value of observing the blood-pressure in all cases of vascular disease; stating that its sudden or steady rise indicated the line of treatment, which might avert a catastrophe. At least, it might inform us of the danger of our patient.

High Blood-Pressure in the Toxemia of Pregnancy.—Dr. D. J. EVANS of Montreal said that in 12 of a series of 38 cases of pregnancy complicated with eclampsia, albuminuria, or vomiting of a toxic type which he had recorded the toxic condition was severe enough to call for the interruption of the pregnancy. In 8 cases eclamptic convulsions occurred, and among these the highest blood-pressure noted was 200 mm., and the lowest, 140 mm. In most instances the blood-pressure immediately before the convulsions was between 170 and 190 mm. One of the patients had three convulsions, though her blood-pressure never rose above 150 except just at the time of the convulsion. Two had a blood-pressure of 200, one with 5 and the other with 18 convulsions, and the child of the former died of convulsions 14 hours after spontaneous delivery. There were 4 cases of severe vomiting: 2 early in pregnancy and 2 near term. In the latter the blood-pressure was 140 in one and 125 in the other, and in both these labor was natural and the children were born alive. In the former, one whose blood-pressure was never above 125 recovered from her vomiting and went to term, while the other, a most severe case, was aborted at the sixteenth week and died 10 days later. For a considerable period the blood-pressure of this patient was taken several times weekly, and was usually found to be about 100 (never above 110); yet she developed retinal hemorrhages and other signs of severe toxemia. The other 26 cases were all albuminuries, with toxic symptoms of more or less severity. Seven of these had a blood-pressure of 160 or over—2 of them recording as high as 180—and in 12 it was 140 or under, the lowest record being 120. As the result of his experience he was inclined to conclude that the blood-pressure record is of little value as indicating the degree of toxemia present in cases of vomiting in pregnancy. Moreover, he had been surprised at the comparatively low reading obtained in many cases where the symptoms indicated the existence of a very considerable degree of toxemia. In three instances induction of labor was imperative, though the blood-pressure was 150 or under, and in four with a blood-pressure of over 150 the toxic symptoms were so slight that the cases were permitted to go to term, when they were delivered naturally. He was inclined to consider 160 as the danger limit, and that in cases where, in spite of treatment, the toxic symptoms do not yield and the blood-pressure is maintained as high as this point, or higher, labor should be induced. In cases of pregnancy with high blood-pressure without toxic symptoms there was little occasion for anxiety. In all cases with hepatic or renal insufficiency the blood-pressure should be carefully watched. A rising blood-pressure in such cases, associated with other toxic symptoms, was indicative of danger, and here he would consider 160 mm. of pressure the danger limit.

Factors Which Alter Blood-Pressure in Pulmonary Tuberculosis.—Dr. FRANCIS M. POTTENGER of Los Angeles, Cal., said that in a former paper he had drawn the following conclusions regarding blood-pressure in this disease: 1. A relatively low pressure is found in tuberculosis, especially in advanced tuberculosis. 2. The factors which favor low pressure are the effect of the toxins upon the vasodilators, the weakness of the heart muscle, and general wasting. 3. The factors which have a tendency to maintain pressure are hypertrophy of the heart muscle and thickening of the systemic arteries. 4 Thickening of the systemic arteries occurred perhaps as a result of the action of the toxins on the vessel wall, and was, therefore, found especially in those who had had tuberculosis for some time. Further experience had confirmed his former observations and also enabled him to add one more factor which he believed was of great importance in causing low pressure, namely, the altered function of the diaphragm and its accompanying splanchnic congestion and relative arterial anemia. It was well known that the splanchnics were capable of holding nearly all the blood of the body: therefore, if the splanchnics contained more than their normal amount of blood it was self-evident that the arterial system must suffer a deficiency, with a resultant low tension. His own theory as to the altered function of the diaphragm, due to displacement and diminished action, was that it is a part of the general scheme of protection by lessened motion, such as has long been recognized in abdominal lesions, and that its cause was the same as that which produced the spasm of the muscles of the neck and chest under the

same conditions; a reflex stimulation, the impulse passing from the inflamed lung to the cord, and there stimulating the adjacent cells of the segment and sending out stimuli to the diaphragm, through the motor fibers which took their origin from contiguous cells, causing the diaphragmatic muscle to assume a condition of tonic contraction or spasm.

The General Treatment of High Blood-Pressure.—Dr. SPENCER L. DAWES of Albany, N. Y., said the general treatment would naturally include the treatment by manual methods, regulated movements, baths, electricity, and sodium nitrite, but as papers on these were announced in the symposium, they would not be considered under this head. General treatment might be divided into (1) prophylactic, (2) curative, and (3) symptomatic. (1) A regulation of the habit of the individual as to diet, exercise, and excretion included the prophylactic measures indicated. Modern, rational, and, above all, systematic exercise would do more to prevent sclerosis of the arteries and its accompanying hypertension even than a regulation of the diet. And, in addition to this, most active business men should obtain at intervals, certainly once a year, the relaxation attendant upon a sea voyage or a period in the actual country, away from the excitement of business and society. (2) Here we should pay our first attention to causation, such as gout, syphilis, the excessive use of alcohol, and overindulgence of all kinds, for, after all, it had to be admitted that high blood-pressure was a symptom, rather than a disease. By far the most popular of all drugs used with the idea of cure was iodine in some form, given oftentimes to the point of toleration; but its value rested more upon empirical evidence than upon accurate measurement of the blood-pressure. Having discussed the administration of iodides, he passed on to the third point, symptomatic treatment. Unfortunately, he said, most of our efforts had to be directed toward relief, since the majority of patients did not come to us until a distinct arteriosclerosis was established, when it was often impossible to benefit them by curative treatment. Venesection, which had been abandoned on account of its abuse, not infrequently gave brilliant results in appropriate cases. Again, results as gratifying to the physician as to the patient might attend upon the free use of calomel or the mass of mercury, followed by a brisk saline purge. When there was intestinal torpor, with decomposition of the animal food, lactic acid tablets might be employed to advantage. In certain types of cases where there were inefficiency of the skin and kidneys and myocardial degeneration, with or without valvular disease, the promotion of free diuresis was often of great help; and here digitalis was of greatest value, notwithstanding that primarily it increased the arterial tension. Theobromine sodiosalicylate was also helpful, as, in addition to its action on the kidneys, it had a direct effect upon the vasomotor center and secondarily upon the blood-pressure; and the combination of these two remedies at times gave remarkably good results. For immediate effect upon hypertension, as well as for continued use over a long period, no class of drugs equaled the nitrites. Care should be taken, however, not to lower the blood-pressure to a point where the secreting function of the kidneys was unfavorably affected, and it was also well always to remember that not all cases where there was high blood-pressure demanded, or even admitted, a reduction of the tension, for as long as the cardiac powers compensated for obstruction in the circulation, no special treatment was needed.

Treatment by Mind Control and Mechanical Agencies Making for Vasomotor Control.—Dr. J. MADISON TAYLOR of Philadelphia said that since there was still so much doubt as to the gravity of the symptom, vascular hypertension, indecision as to how far it was an evidence of organic conservation, it was the part of wisdom to employ in overcoming it only those vasorelaxing agents whose action was understood, capable of exact regulation and likely to do the least harm. Many drugs were admittedly capable of confusing, even dangerous, retroaction; hence, in the absence of a precise knowledge of the action of these medicaments and a full appreciation of the complex factors present, there might be recommended training in mind control and simple, trustworthy mechanical and thermal agencies capable of opening or closing the blood-paths. A large number of individuals exhibited psychic hypertension as a common feature of various other derangements; also a vascular hypertension of from 10 to 25 mm. Hg. Again, it was a common observation that where conditions for vascular hypertension existed there was also psychic hypertension. In the case of the former marked relief was afforded by applying well-chosen methods of psychic relaxation; in the latter, no matter what the underlying cause, a gratifying and increasing lowering of vascular tension was occasioned by securing mental relaxation. Persistence in training in mind control produced satisfactory and permanent vascular relaxation and relief of distressing sensory symptoms. Having outlined his methods, which he said were more fully set forth in a paper entitled "Psychic Hypertension" in the *International Clinics* for July, 1912, Dr. Taylor stated that the following were satisfactory mechanical measures inducing vasomotor relaxation: (1) Manual therapy—using the fingers to press gently and continuously (distributed pressures) on the paravertebral tissues; useful in both acute febrile and protracted states. (2) Skin friction of the whole surface, dry or with water, for periods of not less than 20 to 30 minutes, preferably twice daily; especially for protracted or chronic vascular excitation. (3) Gentle, systematic, increasing passive, active, and resistant movements, watching the heart; also steady walking, slow "trudging" on level or gently sloping ground (*e.g.* "terrain kur" of Carlsbad, Aix, etc.). (4) Baths, especially the "neutral immersion bath"—water at 92° to 98° F., preferably containing sodium and calcium chlorides, in which the patient lay for half an hour to two hours once or twice daily.

Treatment by the High Frequency Current.—Dr. HOWARD VAN RENSSELAER of Albany, N. Y., said that in medicine it was customary to use a current in which the cycles ran from 200,000 to 2,000,000 per second, and with the high voltage of 10,000 to 500,000 volts. Both frequencies and voltages much in excess of these limits might be passed freely through the body, but when given much higher than these they gradually lost their therapeutic properties. Just what were the most advantageous frequency and voltage for the effect on the human system had not as yet been scientifically demonstrated. In its passage through the body the high frequency current seemed to contract or modify the vibrations of individual cells everywhere in such a way that it stimulated abnormally vibrating cells, bringing them back to their normal vibrations and thus restoring their health and function, as well as stimulating healthy cells to increased action. Its action was thus physiological, and the fundamental value of this form of electricity seemed to lie in its power of regulating and stimulating all nutritive processes. If the blood-pressure of a person with hypertension were taken before the electrical treatment, and again directly afterward, it would be found to have fallen, and, in general, the higher the tension the greater the fall, provided that arteriosclerosis were not present. The first treatments might not keep the blood-pressure down for twenty-four hours, but each succeeding day, if the electricity were given daily, the tension stayed lower for a longer time. Usually it stayed down longer than twenty-four hours within a fortnight, and after that the interval between the treatments might be gradually lengthened to once a week, or even once a fortnight. The action of the electricity appeared to be to modify and improve the underlying processes causing the high blood-pressure. The speaker related a case illustrating the good effects of the high frequency current on a person in the earliest stage of Bright's disease, before renal symptoms had been demonstrated, and expressed the opinion that had this patient not taken the electrical treatment the intestinal toxins present would in a few months, or a few years at the most, have produced a condition of hopeless chronic Bright's. From his study of this subject he offered the following premises and deductions: *Premises.*—(1) The underlying cause of most cases of high blood-pressure is metabolic, from faulty digestion of food. (2) The hypertension usually precedes renal, cardiac, and arteriosclerotic changes. *Deductions.*—That by proper treatment with high frequency currents (1) the general condition is improved, and especially the metabolic processes, so that less toxins are formed and absorbed; (2) when, by the aid of the sphygmomanometer, hypertension is recognized early, we are able to cure the initial stages of the disease, because we remove the exciting cause; (3) that we can prevent the actual development of Bright's disease; (4) when renal or cardiac lesions are already present, that we can check the rapid advancement of the pathological processes and thus prolong life; (5) in the later stages of the disease, when compensation has broken and the heart has begun to fail, that by lowering the tension we lessen the resistance which the enfeebled heart is obliged to overcome, and so can alleviate some of the symptoms and make the patient more comfortable; (6) that by the effect of the current in lowering arterial tension we protect the brittle blood-vessels from the liability to rupture, and thus we can minimize the danger of apoplexy.

(To be continued.)

State Medical Licensing Boards.

STATE BOARD EXAMINATION QUESTIONS.

Indiana State Board of Medical Registration and Examination.

July, 1911.

ANATOMY.

1. Give the relation of the internal abdominal ring to surrounding blood-vessels.
2. Give the origin, principal branches, and distribution of the superior mesenteric artery.
3. Give the boundaries and contents of the axillary space.
4. What part of the brain is most freely supplied with blood?
5. Describe the blood supply to the liver structure.
6. Describe the large intestine and tell how it differs from the small intestine in structural arrangement.
7. Give the names of the (*a*) temporary teeth in their order from front to back, (*b*) permanent teeth in same order.
8. What nerves unite to form the brachial plexus?
9. Name the most important nerve branch of the cervical plexus, its point of origin, and its distribution.
10. Give the names and locations of the bones of the face.

PHYSIOLOGY.

1. (*a*) What is meant by digestion? (*b*) Describe the process of digestion of an egg sandwich.
2. Discuss the factors concerned in venous circulation.
3. (*a*) Describe a cell. (*b*) How are cells propagated? (*c*) Give the functions of nerve cells.
4. (*a*) Describe the vasomotor system. (*b*) Give its function. (*c*) What center controls it?
5. (*a*) Compare voluntary and involuntary muscle. (*b*) What is muscular coordination? (*c*) By what centers is it controlled? (*d*) What causes muscular fatigue?
6. (*a*) Describe the respiratory function. (*b*) What is meant by the terms: (1) Residual air? (2) Vital capacity?
7. (*a*) Give the composition of the blood. (*b*) Reaction. (*c*) Specific gravity. (*d*) Amount in the body. (*e*) Time required for a complete circulation.

MATERIA MEDICA AND THERAPEUTICS.

1. Define solvent. Mention three principal solvents.
2. Define diaphoresis. Mention three diaphoretics and state the dose of each.
3. State the name and the dose of each of two cardiac stimulants.
4. In what form is iodine most frequently administered internally? What is the antidote for free iodine?
5. What serious results may ensue from the indiscriminate use of acetanilid?
6. Mention the conditions which affect the dosage of medicines.
7. What is cumulative action? Name one drug that has this tendency, and give symptoms of such action.
8. Name and describe three antiseptics useful for internal medication.
9. Name three indications for the use of opium.
10. How and when would you perform hypodermoclysis?

CHEMISTRY.

1. Give the formula for the two chief products of yeast fermentation of sugar and state the differences, if any, in the action of yeast upon cane sugar, milk sugar, and grape sugar.
2. State the chief differences between fixed and volatile oil and name three of each class that are extensively used in medicine.
3. Give the chemical composition and properties of ammonia gas.
4. Give the approximate constituents of cow's milk.
5. Give the chemical formula for urea and what is the normal amount excreted daily by an average adult.

PHYSICAL DIAGNOSIS.

1. Give physical signs of aneurysm of the thoracic aorta.
2. Give cardinal symptoms by which you can diagnose a case of appendicitis.
3. Give topographical anatomy of the heart and its valves.
4. (*a*) Give normal temperature of the body. (*b*) Give normal pulse (frequency).
5. If a man or woman, past middle age, complaining of constant slight vertigo, intensified on excitement or exertion, presents sclerosed arteries, arcus senilis, and ringing aortic closure, with or without moderate cardiac hypertrophy, what would be your diagnosis?

PATHOLOGY AND BACTERIOLOGY.

1. Define in contrast infection and intoxication.
2. What do you understand by phagocytosis, and what is its relation to immunization?
3. From what does thrombosis of the portal vein most frequently result?
4. From what does chronic gastritis most frequently result?
5. Name the pathological conditions most commonly found in the lymphatic glands.
6. How would you demonstrate the presence of the amœba coli in a case of amœbic dysentery?
7. How would you demonstrate the efficiency of a germicide?
8. Describe one method by which you can demonstrate the agglutination of bacteria by blood serum.
9. What bacteria most frequently cause puerperal infection?
10. Examine and name the pathogenic organisms under the microscopes No. 1, No. 2, No. 3.

ETIOLOGY AND HYGIENE.

1. Give the accredited causes of malaria and yellow fever and tell what measures afford the best means of protection from infection.
2. How are impurities in water classified; how can they be detected, and why is the presence of organic material in drinking water deleterious?
3. Illustrate the theory of immunity by means of antitoxin.
4. Is infantile paralysis infectious? If so, give rules for protecting the community.
5. Give etiology of: (*a*) hepatic abscess, (*b*) cardiac hypertrophy, (*c*) edema of the lungs.

PRACTICE.

1. Write in parallel columns the diagnostic symptoms of measles and smallpox.
2. Write in parallel columns the diagnostic symptoms of neuralgia and myalgia.
3. Mention the forms of insanity, and give the most common causes.
4. Give a differential diagnosis of pleurisy and pneumonia.
5. What are the average durations of the febrile stages in the following forms of disease: Typhoid fever, scarlet fever, measles, rheumatic fever, and pneumonia?
6. Give the symptoms of greatest diagnostic importance in locomotor ataxia.
7. Give the pathognomonic symptoms of hysteria.
8. Give symptoms and treatment of incipient phthisis.
9. What forms of disease present symptoms during the first three days resembling variola?
10. With what form of disease may scarlatina be confounded prior to the appearance of eruption?

ANSWERS TO STATE BOARD EXAMINATION QUESTIONS.

Indiana State Board of Medical Registration and Examination.

July, 1911.

ANATOMY.

1. *Relation of internal abdominal ring to surrounding blood-vessels:* The external iliac artery and vein lie immediately under the ring; the deep epigastric vessels are internal to the ring; and the deep circumflex iliac artery is external to the ring.

2. Superior Mesenteric Artery. *Origin:* Abdominal aorta. *Branches:* Inferior pancreatico-duodenal, vasa intestini tenuis, Ileo-colic, Right colic, and Middle colic. *Distribution:* All the small intestine, except the first part of the duodenum; cecum; ascending and transverse colon.

3. The axilla is *bounded: Anteriorly*, by the clavicle, Subclavius, Pectoralis major, costocoracoid membrane, Pectoralis minor; *posteriorly*, by the Subscapularis, Teres major, and Latissimus dorsi; *internally*, by the first four ribs, first three Intercostal muscles, Serratus magnus; *externally*, by the humerus, Coracobrachialis, and Biceps.

Contents: Axillary vessels; brachial plexus of nerves and their branches; some branches of the intercostal nerves; lymphatic glands, fat, and loose areolar tissue.

4. The gray matter and the base of the brain are most freely supplied with blood.

5. The substance of the liver derives its blood-supply

from the hepatic artery and its branches, also from the small hepatic branch of the gastric artery.

6. The large intestine extends from the termination of the ileum to the rectum. It differs from the small intestine in: (1) Its larger size; (2) its more fixed position; (3) the possession of teniæ; (4) in being sacculated; and (5) in possessing appendices epiploicæ.

The colon is divided into ascending, transverse descending, iliac, and pelvic. The *ascending colon* extends from the cecum to the under surface of the liver to the right of the gall-bladder, where it turns to the left, forming the *hepatic flexure*. It lies in the right iliac and right hypochondriac regions. The peritoneum covers the anterior and lateral surfaces. Length, 8 inches. The *transverse colon* passes from right to left, from the gall-bladder to the spleen. It forms an arch, convex anteriorly and below: the *transverse arch of the colon*. It is entirely surrounded by peritoneum, which is attached posteriorly to the spine, forming the mesocolon. Length, 20 inches. The *descending colon* passes from the end of the transverse colon by a bend, *the splenic flexure*. Between the splenic flexure and the diaphragm, opposite the tenth left rib, is a fold of the peritoneum, the *costocolic ligament*, which slings up the spleen. The gut then passes downward to the iliac crest, ending in the iliac colon. The peritoneum invests its anterior and lateral surfaces. Length, 4 to 6 inches. The *iliac* colon is continuous with the descending colon at the left iliac, crest, and ends at the inner border of the left psoas. Peritoneum invests its anterior and lateral surfaces; it has no mesentery. Length, 5 to 6 inches. The *pelvic colon* extends from the inner border of the psoas to the level of the third sacral vertebra. Length, 16 or 17 inches; very variable. It has an extensive mesentery.—(From *Aids to Anatomy*.)

7. The *temporary* teeth, from front to back, are: Central incisor, lateral incisor, canine, first molar, and second molar.

The *permanent* teeth, from front to back, are: Central incisor, lateral incisor, canine, first bicuspid, second bicuspid, first molar, second molar, and third molar.

8. The brachial plexus is formed by the union of the anterior divisions of the fifth, sixth, seventh, and eighth cervical and the first dorsal nerves.

9. The most important nerve branch of the cervical plexus is, probably, the phrenic nerve. It arises chiefly from the fourth cervical nerve, with filaments from the third and fifth cervical nerves. It is distributed to the diaphragm, pericardium, and pleura.

10. THE BONES OF THE FACE. Two *nasal*, forming the bridge of the nose. Two *superior maxillary*, forming upper jaw; part of roof of mouth, nasal fossæ and orbital cavities. Two *lachrymal*, situated at the front and inner part of the orbit. Two *malar*, at upper and outer part of face, forming the cheek bone. Two *palate*, at back part of nasal fossæ; they assist in formation of roof of mouth, and floor of orbit. Two *inferior turbinated*, on outer wall of nasal fossæ. *Vomer*, forming septum of nose. *Inferior maxillary*, or lower jaw.

PHYSIOLOGY.

1. *Digestion* is the name given to the series of changes occurring in food from the time of its ingestion till it is ready for absorption.

An egg sandwich consists of bread (proteid, carbohydrates and fat), butter (fat), and egg (proteid and fat).

The proteid is digested in the stomach and small intestine, where the pepsin (of the gastric juice) and trypsin (the pancreatic juice), respectively, turn it into proteoses and peptones. The carbohydrates are digested in the mouth, and small intestine, where the ptyalin (of the saliva) and amylopsin (of the pancreatic juice), respectively, turn it into maltose and dextrose. The fat is digested in the small intestine, where it is saponified by the steapsin (of the pancreatic juice) and the bile.

2. The factors concerned in venous circulation are: (1) The force exerted by the heart; (2) the suction action of the chest during inspiration; (3) the voluntary muscles; (4) the valves in the veins.

3. A *cell* is a mass of protoplasm, with a nucleus, and sometimes a nucleolus, centrosome, attraction cell and cell-membrane. It is capable of movement, response to stimuli, ingestion, egestion, assimilation, and reproduction. Cells multiply by simple division, but the division of the protoplasm is preceded by division of the nucleus. This latter occurs in two ways: (1) By direct, or simple, or amitotic division; and (2) by karyokinesis or indirect division, the more common way.

The *functions of nerve cells* are: (1) Receiving nerve impulses; (2) sending out nerve impulses; (3) modification of nerve impulses; and (4) nutrition of itself and its dendrites and axon.

4. "The vasomotor system may be said to be composed of the vasomotor center, situated in the medulla, together with some accessory and subsidiary centers in the spinal cord, and vasomotor nerves. The nerves are divided into two classes, according as they increase or diminish the calibre of the arterioles; those which increase the caliber are vaso-dilators; those which diminish the same are known as vaso-constrictors. All nerves that in any way influence vessel caliber are classed under the general head of vasomotor." (Ott's *Physiology*.)

5. *Voluntary muscle* is more or less under the control of the will; *involuntary* muscle is not under the control of the will, it is rhythmical in its contractions, and is also characterized by peristalsis.

Further, *voluntary* muscle is striated, has long narrow fibers with cross striations and many nuclei beneath the sarcolemma. *Involuntary* muscle is non-striated, has spindle-shaped fibers, one nucleus centrally located, and no sarcolemma. The great exception is cardiac muscle, which is involuntary and also striated. *Voluntary muscle* is found in all the skeletal muscles, pharynx, diaphragm, larynx, external ear, and eye. *Involuntary muscle* is found in the alimentary tract from the middle third of the esophagus to the anus, in the ducts of glands, in the trachea and bronchial tubes, within the eyeball, the internal urinary and genital systems, circulatory (except the heart) and lymphatic systems, and the capsules of some organs.

By *muscular co-ordination* is meant the harmonious action of individual muscles in a complicated muscular action. It is controlled by centers in the cerebellum.

Fatigue is caused by: (1) The consumption of those substances (particularly carbohydrates) which supply the muscle with energy; (2) the accumulation of the waste products of contraction, particularly sarco-lactic acid and carbon dioxide.

6. *Respiratory function.* "Respiration is the process by which oxygen is absorbed into the blood and carbon dioxide exhaled. The assimilation of the oxygen and the evolution of carbon dioxide takes place in the tissues as a part of the general nutritive process, the blood and respiratory apparatus constituting the media by means of which the interchange of gases is accomplished."

Residual air is the air which remains in the lungs after every effort has been made to empty them; it is equal to about 100 cubic inches.

Vital capacity is the amount of air which can be expelled from the lungs after the deepest possible inspiration; it is the sum of the complemental, tidal, and supplemental air, and is about 225 to 250 cubic inches.

7. BLOOD. *Composition:* Plasma and corpuscles. The *plasma* consists of water and solids (proteids, extractives, and inorganic salts). The *red corpuscles* consist of water and solids (hemoglobin, proteids, fat, and inorganic salts). The *white corpuscles* consist of water and solids (proteid, leuconuclein, lecithin, histon, etc.). There are also *platelets*, which are very small, colorless, irregular shaped bodies, about one-fourth the size of the red corpuscle.

Specific gravity: 1055 to 1062. *Reaction:* Alkaline. *Amount in body:* About one-thirteenth of the body weight. *Time required for a complete circulation:* About 23 seconds.

MATERIA MEDICA AND THERAPEUTICS.

1. A *solvent* is a liquid which holds another substance in solution. *Three principal solvents:* Water, alcohol, and glycerine.

2. *Diaphoresis* is the process of perspiring. *Three diaphoretics:* Spirit of nitrous ether, dose 30 minims; Dover's powder, dose 7 grains; alcohol, dose of whiskey, 2 ounces, diluted.

3. *Two cardiac stimulants:* Aromatic spirit of ammonia, dose 30 minims; nitroglycerine, dose 1 minim.

4. *Iodine* is most frequently administered internally as the iodide of potassium or sodium. Starch is the antidote to free iodine.

5. *The indiscriminate use of acetanilide* may cause: Collapse, chills, cyanosis, fatty degeneration of heart, liver, and kidneys, and destroys the hemoglobin-carrying efficiency of the red blood corpuscles.

6. *The dosage of medicines* is influenced by: Age, sex, weight, nationality or race, disease, pain, idiosyncrasy, body temperature, drug habits, method of administration, and the cumulative action of the drug.

7. *Cumulative action* is the property which some drugs have of producing more or less sudden and violent action, after single and successive doses have been taken with no untoward effect. *Example:* Digitalis; this produces fast

and irregular pulse, gastroenteritis, small pulse, low blood pressure.

8. *Three antiseptics useful for internal medication:* Urotropin, salol, and thymol.

Urotropin is a white, crystalline powder, soluble in water, prepared by the action of ammonia on formic aldehyde. It is used as a genitourinary antiseptic.

Salol is the salicylic ether of phenol; it is a white, crystalline powder, nearly insoluble in water, but is very soluble in ether. It is used as an intestinal antiseptic, owing to its power of splitting up (in an alkaline medium) into salicylic acid and phenol.

Thymol is a phenol contained in oil of thyme; it occurs in large crystals, of aromatic odor; it is soluble in fats and oils; and liquefies when treated with chloral or camphor.

9. *Three indications for use of opium:* To relieve pain, to produce sleep, and to check excessive secretion.

10. *Hypodermoclysis* "is a method of applying remedial agents through the skin. As a rule, 0.6 per cent. normal salt solution is used—a dram of table salt to a pint of boiled and filtered water. The site preferred is the anterior wall of the abdomen or the ilio-lumbar region, above the ilium and below the ribs. Thorough asepsis is necessary in the technique. An ordinary fountain syringe with a moderate sized needle is all that is required. The solution is best used at a temperature of from 110° to 115° F., and from four to eight ounces are employed. The method is extremely useful in conditions of shock, hemorrhage, diarrhea, uremia and in toxic states generally." (Butler's *Materia Medica*, etc.)

CHEMISTRY.

1. Yeast fermentation of sugar produces alcohol (C_2H_5OH) and carbon dioxide (CO_2).

Cane sugar, under the influence of yeast, is slowly converted into dextrose and levulose, which are then fermented to alcohol and carbon dioxide.

Milk sugar is first inverted by yeast, and then alcohol is formed; this occurs slowly.

Grape sugar, under the influence of yeast, is converted into alcohol and carbon dioxide.

2. The *fixed oils* are glycerides, and are capable of saponification. The *volatile oils* are mostly hydrocarbons, and are not subject to the same decompositions as the glycerides.

Three fixed oils used in medicine: Castor oil, glycerine and oleic acid.

Three volatile oils used in medicine: Oil of peppermint, oil of anise, oil of cinnamon, and oil of gaultheria.

3. *Ammonia gas.* The molecule consists of three atoms of hydrogen chemically united to one atom of nitrogen, NH_3. It is a colorless gas, with a pungent and irritating odor and a caustic taste; it is very soluble in water, also in alcohol; it does not burn readily. It combines with water to form an alkaline liquid containing ammonium hydroxide. It combines directly with acids, without separation of hydrogen, to form ammonium salts:

$$NH_3 + HCl = NH_4Cl.$$

4. Cow's milk consists of:

Water	87.00
Solids	13.00
Fat	3.66
Milk sugar	4.92
Casein	3.01
Albumin	0.75
Proteins	3.76
Ash	0.70

5. UREA. *Chemical formula:* $CO(NH_2)_2$. About 500 grains of urea are excreted daily by an average adult.

PHYSICAL DIAGNOSIS.

1. *Physical signs of aneurysm of the thoracic aorta:* Sometimes a bulging in the precordial region, visible pulsation, with a thrill on palpation, localized dulness on percussion, and a "bruit" on auscultation. One radial pulse may show diminished volume and irregular rhythm. There may be tracheal tugging.

2. *Cardinal symptoms in diagnosis of appendicitis:* Pain, beginning near the umbilicus, and settling in right iliac fossa, near McBurney's point; rigidity of right rectus muscle; tenderness on pressure over McBurney's point; nausea or vomiting; obstruction to passage of feces or gas.

3. TOPOGRAPHY OF HEART AND ITS VALVES. A line from the lower border of the second left costal cartilage (one inch from sternum) to upper border of third right costal cartilage represents the *base line;* the *right side* will be a line drawn from right side of upper limit to seventh right chondrosternal articulation; the *lower limit* is a line from this last point to the apex (in fifth intercostal space, three and one-half inches from mid-line); the *left side*, from left end of upper border to left of apex. The valves are: Aortic, mitral, tricuspid, pulmonary (and Eustachian and coronary).

The *aortic valves* are behind the third intercostal space, close to the left side of the sternum. *Pulmonary valves*, in front of the aortic, behind the junction of the third rib, on the left side, with the sternum. *Tricuspid valves*, behind the middle of the sternum, about the level of the fourth costal cartilage. *Mitral valves* behind the third intercostal space, about one inch to the left of the sternum.

4. Normal temperature of the body is 98.6° F. Normal pulse rate is about 16 to 18 per minute.

5. Arteriosclerosis.

PATHOLOGY AND BACTERIOLOGY.

1. *Intoxication and infection.* "In one class of diseases the infecting microbe remains localized at the point of inoculation, and is never or only exceptionally found in the fluids of the body, the general symptoms of the disease being due to absorption of the toxic products. Such are true *Intoxications*. In other cases the microbe is found circulating in the blood throughout the body and finds lodgment in most of the organs. These are called *Infections*. Tetanus is the type of the first class; anthrax, of the second." (Stengel's *Pathology.*)

2. *Phagocytosis* is the property of certain cells (such as some of the white corpuscles) to ingest and destroy bacteria. Metchnikoff believes that *immunity* is due to the chemotaxis which exists between the phagocytic cells and microorganisms.

3. "*Thrombosis of the portal vein* is most frequently the result of infective inflammation of the vein (pylephlebitis), resulting from ulcerative enteritis, appendicitis, or similar processes involving the parts from which the portal blood is received."—(Stengel's *Pathology.*)

4. *Chronic gastritis* is most frequently the result of improper food (including alcoholic drinks).

5. *Pathological conditions of the lymphatic glands:* Inflammation, tuberculosis, syphilis, tumors, Hodgkin's disease, leukemia, lymphosarcoma, status lymphaticus, atrophy, hypertrophy, and degenerations.

6. *To demonstrate the amœba coli in a case of amœbic dysentery:* "A satisfactory recognition of the parasite, particularly in the hands of the novice, demands that he should see it send out pseudopodia; he should observe active movement. In order to do this, the material should be reasonably fresh. In the case of feces admixture with urine is to be avoided. A drop of the suspected material is placed upon a slide and a cover-glass applied. The slide may be gently warmed, or the microscope may be kept in a reasonably warm place, under which conditions movement will be more active. Fresh specimens may be best stained by mixing with the suspected material, placed upon a slide, a drop of a watery solution of toluidin blue. This reagent acts as a fixative and at the same time stains the amebas intensely and rapidly."—(Coplin's *Pathology.*)

7. *To demonstrate the efficiency of a germicide:* "Koch's original method of determining this was to dry the microorganisms upon sterile threads of linen or silk, and then soak them for varying lengths of time in the germicidal solution. After the bath in the reagent the threads were washed in clean, sterile water, transferred to fresh culture media, and their growth or failure to grow observed. This method also determines the *time* in which a certain solution will kill microorganisms, so is advantageous." (Macfarland's *Bacteriology.*)

8. *The Widal reaction:* "Three drops of blood are taken from the well-washed aseptic finger tip or lobe of the ear, and each lies by itself on a sterile slide, passed through a flame and cooled just before use; this slide may be wrapped in cotton and transported for examination at the laboratory. Here one drop is mixed with a large drop of sterile water, to redissolve it. A drop from the summit of this is then mixed with six drops of fresh broth culture of the bacillus (not over twenty-four hours old) on a sterile slide. From this a small drop of mingled culture and blood is placed in the middle of a sterile cover-glass, and this is inverted over a sterile hollow-ground slide and examined. . . . A positive reaction is obtained when all the bacilli present gather in one or two masses or clumps, and cease their rapid movement inside of twenty minutes." (From Thayer's *Pathology.*)

9. *Bacteria most frequently causing puerperal infection are:* Streptococcus pyogenes, staphylococcus pyogenes aureus, gonococcus, bacillus coli communis, bacillus diphtheriæ, bacillus ærogenes capsulatus, bacillus typhosus.

ETIOLOGY AND HYGIENE.

1. Malaria is *caused* by the plasmodium malariæ, but *carried* by the anopheles mosquito. The cause of yellow fever is not yet determined, but it is *carried* by the stegomyia mosquito.

Prophylaxis of malarial fever. Individuals should use mosquito netting around their beds and wire gauze in doors and windows so as to keep out the mosquitos as much as possible. During residence in malarial districts quinine should be taken every morning before breakfast. All pools, stagnant water, etc., where *anopheles* may breed, should be removed. All mosquitos, larvæ, etc., should be destroyed as far as possible. By staying indoors during dusk and darkness, opportunities for infection may be avoided. Occasional fumigation with formaldehyde or sulphur is also efficacious.

To prevent yellow fever in the tropics: All cases of the disease should be isolated; houses should be protected by mosquito netting; mosquitos should be killed; swamps should be drained.

2. Impurities in water may be classified as: (1) Mineral, (2) vegetable, and (3) animal. The presence of organic matter is deleterious, because it may indicate fecal matter, with pathogenic bacteria. The processes employed for the detection of the various impurities are too lengthy for description here, and also too technical and complicated for use by the practising physician.

3. *How* antitoxin produces immunity and effects cure is not known, but *theories* deduced from observed facts are as follows: "As the various pathogenic bacteria produce the causative toxins of their respective diseases, so the organic cells of the body, reacting under the stimulus of the poisons thus introduced, immediately proceed to elaborate defensive bodies, which if produced in sufficient quantities will neutralize the effects of the toxins. Residual antibodies remaining in the blood after recovery render the animal immune for a time against the disease. The immunizing and curative effects obtained by the injection of the blood serum of an immunized animal into the circulation of another animal are due either to direct chemical neutralization of the toxins themselves by the antibodies so introduced (Behring, Kitasato), or to a particular influence exerted by the antibodies upon the living cells of the organism which, being affected in two opposite directions, remain neutral to the disease (Buchner). Some authorities hold that these results are due to the conjoint action of leucocytic and chemical forces. Ehrlich's side-chain theory assumes that every toxin contains toxophore molecules having direct toxic action, and haptophore molecules which combine the toxophores with a similar combining group of molecules in the tissue cell of the attacked organism. The tissue cell molecules being destroyed by the toxophores, a rapid and profuse regeneration of similar molecules occurs in side chains, and these molecules overgrowing are carried into the circulation, becoming the antitoxin, which acts by combining with the haptophores of newly arrived toxin, using up their combining power before they can reach the tissue cells." (Potter's *Materia Medica*, etc.)

4. Infantile paralysis is believed to be infectious, but the specific microorganism is not yet demonstrated. Quarantine, as for any other infectious disease, affords the best way of protecting the community.

5. *Hepatic abscess* is *caused* by: Microbes, ameba coli, parasites, biliary calculi, cholangitis, traumatism, and embolism, septic processes of circulatory or digestive tract. *Cardiac hypertrophy* is *caused* by: Arteriosclerosis, nephritis, prolonged muscular exertion, exophthalmic goiter, aortic disease, mitral regurgitation. *Edema of the lungs* is *caused* by: Infections, nephritis, arteriosclerosis, some cardiac lesions, pregnancy, and alcoholic excesses.

PRACTICE.

1.

	MEASLES.	SMALLPOX.
Incubation	10 days.	12 days.
Prodromes	3 days. Coryza, cough, etc. Koplik's spots.	3 days. Rigor, high fever, headache, lumbar pains.
Character of eruption.	Bluish papules; swelling of face; discrete or confluent circular outlines.	Macules, papules, vesicles, and pustules; discrete or confluent.
Parts first affected	Forehead, face, or neck.	Forehead.
Desquamation	Furfuraceous	Large crusts.
Duration	7 to 10 days.....	3 weeks.
Complications and sequels.	Eye and lungs; tuberculosis.	Larynx and lungs.

2.

MYALGIA.	NEURALGIA.
Skin is normal.	Skin may be inflamed.
Pain is increased by muscular contractions.	Pain is increased by pressure.
No skin eruptions.	Frequently skin eruptions are present.

3. *Principal forms of insanity:* Mania, melancholia, paranoia, idiocy, imbecility, paresis, dementia, delirium. *Most common causes:* Heredity, civilization, alcohol, syphilis, narcotic drugs, severe mental strains, depressing emotions, shock, trauma, autotoxemia, organic brain diseases.

4.

	CROUPOUS PNEUMONIA.	CATARRHAL PNEUMONIA.	PLEURISY.
1. Mode of invasion.	One or more severe rigors. Often vomiting.	Generally after bronchitis, or collapse, and without distinct rigors.	Frequently none, but sometimes several, not severe rigors.
2. Sensations about the chest.	Pain in the side at first, not stitch-like, but more dull and diffused.	Pains about the chest, but not specially localized.	Severe, stitch-like pain in side, increased on respiratory movements.
3. Cough.	Hacking, or in paroxysms.	Short, hacking, and painful.	Slight, and patient tries to repress it.
4. Expectoration.	Considerable; viscid, tenacious, "rusty."	Often less than before; not "rusty."	Absent, or very slight, and of no special characters.
5. Disturbance of breathing.	Very rapid breathing, and much perversion of pulse-respiration ratio, but not proportionate feeling of dyspnea until the later stages, when dyspnea is marked.	Rapidity of breathing increases when it occurs in bronchitis; dyspnea may be marked.	Quick, shallow breathing at first, but less disturbance of pulse-respiration ratio than in pneumonia. Later on, more or less actual dyspnea according to amount of pressure.
6. Degree of pyrexia.	Considerable; temperature usually high, 103°, 104°, 105° or more, and runs a regular course. Skin peculiarly hot and dry.	Temperature high, but there are considerable remissions, at irregular intervals.	No regularity in course of temperature. Skin not acridly hot.
7. Aspect of patient and general condition.	Marked flushing of face, often unilateral. Malar cyanosis. Herpes round mouth.	Face is flushed. Often much anxiety and restlessness, with loss of flesh and strength.	Nothing special. No particular prostration, or tendency to cyanosis unless dyspnea becomes marked.
8. Physical signs.	At first, fine crepitations, followed by signs of consolidation, viz., diminished movement, increased vocal fremitus, dulness, bronchial or tubular breathing, increased vocal resonance, etc. Usually one base is affected. The side is not notably enlarged, nor is there displacement of organs.	There may be signs of consolidation in scattered spots, with râles. Both lungs are usually involved in irregularly scattered patches.	At first friction-sound or fremitus, succeeded by signs of fluid, viz., side often enlarged, movements interfered with, diminished vocal fremitus, dulness occasionally movable, weak or suppressed breathing. Usually on one side, and often displacement of organs.
9. Course and termination.	(1) Often a marked crisis from 5th to 8th day; (2) death; (3) gangrene of lung; (4) abscess of lung.	No crisis, and course often prolonged or followed by acute phthisis.	No crisis, and course very variable.

(Wheeler and Jack's *Practice of Medicine.*)

(To be concluded.)

Medical Record

A Weekly Journal of Medicine and Surgery

Vol. 82, No. 6.
Whole No. 2179.

NEW YORK, AUGUST 10, 1912.

$5.00 Per Annum.
Single Copies, 15c.

Original Articles.

BIRTH RATES, OVERPOPULATION, AND THE COST OF LIVING.

By CHARLES E. WOODRUFF, M.D.,

LIEUT.-COLONEL, MEDICAL CORPS, U. S. ARMY.

In looking over an article on birth rates and overpopulation published in the *Popular Science Monthly*, January, 1911, by Mr. Scott Nearing of the University of Pennsylvania, and to which the MEDICAL RECORD referred in an editorial of May 27, 1911, it was amazing to find that some of his statistics were the same as in the book "Expansion of Races." It looks as though he had taken these facts without crediting the source, and yet in his review of this work published in the Annals of the American Academy of Political and Social Sciences he discredited both the book and its facts. Mr. Nearing, in his review, made many statements which were the exact opposite of the facts, and this is, perhaps, the reason why, in his last article, he shows that he has not the faintest conception of the significance of the data which Malthus collected and which Darwin put to such remarkable use as to make a real science of biology. Malthus proved that there was a tendency for population to increase in a geometrical ratio and crowd the food supply. He feared that a time would come when, in spite of the checks he mentioned, we would suffer dreadful distress from future overcrowding unless we took measures to keep down population so as to leave fewer to be killed by famines or in the wars due to the search for food or the means to purchase it. His fears were groundless, as the future overpopulation he dreaded was really present then, but it required a Darwin to show that the very basis of evolution of better beings of all kinds is this very overpopulation which forces a struggle for existence during which the best fitted to survive outlast the least fitted and thus cause a change of type. Those scientists who had specialized on plants and lower animals, after resisting the new generalization for twenty years, reluctantly embraced it, but those who had specialized on man and his activities—the anthropologists, sociologists, and economists—held off longer. Some of them even yet cannot bring themselves to see that nearly every social phenomenon is based on competition, as there are always more workmen than jobs and more people than available food. Part of this reluctance is due to the fact that political economy as a science was born too soon. Many of its laws were known two centuries ago, though they were first collected into a real science by Adam Smith in the last half of the 18th century, but it is now found that he made many blunders he would have avoided had he foreseen the work of Malthus. Similarly John Stuart Mill, who brought the science down to his time, correcting some of Smith's blunders, was himself woefully in error because deprived of the illumination of Darwin's later work, and was unable to use it when it did appear. Since Mills' epoch-making book there has been no economist of sufficient genius to correct the science to date and make it accord with modern biology. Thus it happens that in these few subjects it is basically wrong and will be until it applies to man the laws known to govern all other animals. Sociologists—and that term includes all who study any group phenomenon of man—are hopelessly divided and make contradictory proposals for human betterment. Some, while insisting on competition as an essential of society, are constantly making impossible suggestions to end the most basic of all competitions. It is taken for granted that man is not an animal and that there need be no destruction of the unfit; indeed, they say that there never has been overpopulation and that the unfit for survival do survive.

This is Scott Nearing's mistake. In his article he tries to show that the reduction of the birth rate is one of the reasons why Malthus' prediction of great distress has never been fulfilled, whereas the percentage of overpopulation is but little, if at all, less than a century ago. People, counted by millions, were starving to death in Russia and China this very year because they persisted in multiplying to the limit of the food production of years of good harvests, knowing full well that in the periodically returning lean years there will not be enough. In China there have been seventy famines, with millions of deaths each time, in the last seven centuries, not counting the lesser famines at all. Hindus breed like rabbits until the next cycle of poor rainfall, and then die out. In higher civilizations some of the people breed with like thoughtlessness though to less extent, so the problem of unemployment is driving socialistic legislators to distraction. It is high time that economists recognize biology. Professor Ellwood of the University of Missouri thinks it "horrible" to apply it in the strictest way, and yet in his own work on sociology, written to emphasize the biological side, there are amazing biological misstatements. On the other hand, one world-renowned economist writes me that he is in full accord with the main contention of the existence and necessity for overpopulation as a basis for competition, and another one writes me that I need not stay awake o' nights worrying over anything Ellwood says. And thus it goes.

The medical profession is vitally interested in this modern discussion of birth rates. We must recognize that the reduction of the size of families is a world-wide movement that has been going on many millenniums, but only noticed for a century. It is only one of the ways in which thinking people try to ease up the struggle for existence and make

survival more certain for their healthier, fewer, better raised offspring. But it must be known that at the present rate there are still produced enough men to overstock the labor market and make it impossible to employ them all. Mr. Nearing's article implies that overpopulation never has occurred and never will, whereas it is the basis of all advancement.

It may be remarked that few people realize what a narrow margin separates us all from starvation. Before harvest time, the last year's crop is nearly all eaten up; indeed, most foods are perishable. If all harvests were suddenly destroyed the world over, the foods in stock would not keep us alive long enough to plant the next year's crop, even if we had the seed. When a poor season brings starvation locally, say to forty million Chinese, the world cannot spare enough food to keep them alive a whole year, though we have enough money to buy it if it were available. Death is unavoidable to at least half, for they cannot eat gold. Famines, then, are permanent unavoidable phenomena, existing even where there is abundance of wealth, as in India.

Local famines, though, by leaving more food for the survivors, will never permit the world to reach that degree of distress which so worried Malthus. For many centuries the more provident Chinese and their statesmen have rather welcomed famines, because experience shows that after one is over the survivors have so much more food per capita, that there is a period of widespread comfort and prosperity, until the people by a shortsighted prolificness have restored the awful overcrowding. There is even an indisposition to fight plagues on this ground of benefit to survivors; that is, density of population is regulated automatically.

The main interest of physicians centers in the proof that a certain percentage of every society—the least efficient—are in such chronic want that proper nutriment is beyond their reach. It won't do to say it ought to be given them when we see shiploads of food leave our harbors to be purchased by abler men abroad. We cannot prevent the owners from selling to the highest bidders while there are thousands who are underfed here. And even in northwestern Europe where our food flows they have the same phenomenon of a certain percentage unable to buy that imported wheat and meat. So we witness children growing up into degenerates the world over through sheer underfeeding. Nor will it do to say that in time we will raise enough food for all, as man has been at that very thing ever since he planted the first grain. That is, there is always a demand for more food than exists, and man is always trying to raise more to prevent the distress and cause more to survive, but the only result has been more survivors with the same percentage on the poverty line, and many beyond, to die at the first poor harvest. Japan has actually terraced her mountains to supply foods when there were but ten million to feed, and she now has fifty million, among whom the struggle for food is enough to make one's heart bleed. When we have irrigated every inch where water can be conducted, and have drained every inch of our swamps, we may have some hundred million or so more mouths to feed, but the same percentage will be only partly filled or not filled at all. A thousand years will not change a phenomenon which has been going on for many millions, and which is the cause of all advances by survival of the fittest for survival.

Nor will it do the least good in this line to divide up the wealth now so unequally distributed. It may be necessary on other grounds to spoliate individuals of too much wealth, but that depends entirely upon the way they use it or misuse it. The general impression is now crystallized that the wealthy, in return for protection of their riches, must devote their lives to the people who allow them to have wealth, as the landed proprietors do in Europe, particularly in England, which is really administered by the unsalaried. Or the wealth itself must be devoted to public ends. But it will not diminish poverty to seize that wealth of millionaires to divide it up pro rata. Each man's share would feed him less than four months. If all this hoarded private wealth were invested for us the income would feed us only a couple of weeks or so. If devoted to the poor 10 per cent. of our population it would feed them ten times longer, to be sure, and permit them to raise more inefficients so that in the next generation the distress would be the same. So we had better let things go as they are, improving without revolutionizing, and doing it slowly, as we always have done, remembering that by present methods there are many more million happy, well-fed people in the world than Malthus thought possible.

The increased cost of living could also be very accurately explained by economists if they would only recognize the significance of Darwin's work. The present theories are so contradictory as to be absurd, yet each has a part truth. It is foolish to complicate the matter by discussing the value of the coins by which we are paid. The real test is whether a laborer can get as much of the necessaries of existence for his labor as he formerly did—not the amount of copper, silver, or gold he gets as compared with what he got one or ten decades ago. In Biblical times he got a penny a day, but copper was so rare that the penny supported his family fairly well, at least in a survivable way. Of what earthly use is it to a laborer to get 200 similar coppers today if they will not buy enough to support a family? He is working for the requisites of survival and does not care whether he is paid with a piece of paper, if he can exchange it for enough meat and potatoes, with something to spare for clothes and other things.

It is now acknowledged that ever since the first protolithic primitive man, or man-ape, picked up his first club or stone as a tool to help in getting food or shelter to survive, he has been constantly improving those tools to get more of that food and shelter so as to survive where otherwise impossible. Publicists still use the absurd expression, "labor-saving machines," whereas they all know that the only result in our labor competition due to overpopulation is increase of product. The sweatshop worker bending over an electrically driven sewing machine works just as hard and just as long as the needlewomen of a century ago, and gets just about as much of the necessaries of survival in exchange for an hour's work.

But there is now a vast difference in what is needed for survival. And here is where physicians can again enlighten economists in their discussions of the cost of living. Every invention permits a laborer to accomplish more than formerly, and he can demand more in exchange so he saves up or buys luxuries without which man has before survived. But in either case he is able to raise frail children who formerly perished for the want of extra foods or luxuries. There has been a progres-

sive racial physical enfeeblement from this kind of survival of the fittest for survival—the more efficient workers—and as a result we cannot possibly live as our ancestors of a few centuries back. "The luxuries of one generation become the necessities of the next." We must now have better food, clothing, and houses or we die. Moreover, when sanitation is bad, only the immune survive, and such races as the Chinese by this process can tolerate conditions fatal to us. When sick we need more attention and more materials. We also need shorter periods of labor, longer rest, and more recreation, for we would break under the old strains. That is why the laborer of the upper races makes more things by an hour's labor than ever before and gets more in exchange for them, and why human conditions have thus progressively improved since the first tool was made.

Nevertheless the same old competition from unemployment comes in, and we find idle men in the "market places" underbidding each other for jobs by which they can get enough to survive—a condition as old as the habitable earth. The only point to consider is whether a man gets enough for his work to survive, and that evidently regulates itself automatically, for if he fails to get enough he dies, though it may have been enough for hardier ancestors. The price of food also thus regulates itself automatically, and no human laws have ever succeeded in getting it down to the purchasing power of everyone, though innumerable attempts have been made. The birth rate keeps it automatically, just out of reach of the purchasing power of the submerged tenth, no matter what the actual price or how greatly the crops are increased by modern methods.

Writers are constantly befogging this matter by lugging in the question of the wages for special ability. We must deal with the average man, no matter what his trade, though certain employments are necessarily confined to the more intellectual who are the exceptions. Labor is worth only the increased value it gives to materials worked on, and that depends solely on the demand for the product. Among a hundred thousand stone cutters there may be but one who can make a beautiful carving, but he will not get a cent for his work unless there is a demand for it. He may die of starvation, and even if his work is demanded it may not bring in much, for the supply is great when he can duplicate it. An artist often gets less than mechanics, but after he is dead and the supply of his work limited forever, the demand throws the value up enormously. In like manner, any man who by exceptional ability can produce works of value is paid in proportion to their value. All these matters affect such a small percentage of the human race that we can ignore them in dealing with the wages of mechanics. The rule is absolute—the normal wage the world over, by reason of the competition of overpopulation, is and always has been the bare necessities of existence for man and wife and a baby. Those below the average cannot get these necessaries of their own exertions. No ordinary mechanic can support many children, and never could. These are cruel facts, and by ignoring them sociologists are doing much injury in their efforts to improve conditions.

Adam Smith first pointed out the natural cost of living (our total energy), but in measuring the price of food he made a remarkable blunder, due to his ignorance of overpopulation. He tried to measure the value of wheat by the labor of production, whereas its value is what the competing too numerous consumers are willing to pay for it to keep alive; and that amount is practically the whole labor of the lowest self-supporting layer of society. The labor of production doesn't enter into the problem except secondarily, for no consumer will give more labor for it than he would expend in producing it himself, omitting the costs of transportation and exchange. Modern machinery has enormously reduced the labor of production, but the actual price has not varied in like proportion, because the demand of increased population keeps exact pace with larger crops, and the price of our daily bread is the same as ever—our daily labor—omitting the other necessaries for the sake of brevity. The farmer grows much more food for his time than ever before, and would get rich if he could demand an equally increased amount of goods in exchange for his surplus. But he is as poor as ever, for several reasons. His own needs are more, and if his labor was very valuable there are competitors who would overbid him for his rented farm. This actually occurs, and the rents rise so that he has left only enough to live on. This is why the tendency is for farms to diminish in size to the point just sufficient to feed a small family and give a tiny surplus to sell for other necessaries. The land owner is the real beneficiary of the competition of overpopulation. He gets the unearned increment, and lives in town. That fact is so galling that many economists think it will be taken away from him in time.*

The results of all these checks and counterchecks is that the measure of the cost of food is what we can pay for it, and that the labor of the producer tends to equal that of the consumer. The two fluctuate slightly, but are practically equal from age to age. Increased crops, then (or lessened cost of production), merely increase the percentage of urban population. The submerged tenth are submerged because they have not enough bodily or nervous energy to equal that expended by a farmer, and, of course, they cannot get the food he grows. In times of scarcity food is high, no matter how little labor its production cost, and the poor, in order to survive, would sell their children, their wives, and even themselves, and at the present moment this kind of voluntary slavery exists in the majority of the human race, though it is disguised in form. To their minds it is better than death by starvation. When America cannot take this surplus population from Europe, what is to become of them in times of scarcity? and what will our state be?

The special temporary conditions in new coun-

*Rev. Monroe Royce in his book "The Passing of the American" mentions the enormous rentals paid by French farmers for the most desirable lands, $500 to $1,000 an acre. A "farm" of two or three acres is barely enough to support a family of six, all working who can to raise the six or seven crops a year and producing as much as forty-two times the yield per acre of many an American farm. If a man is rich enough to own one of these three-acre farms—$60,000—he lives in town supported by the rent. It seems that all working men (farmers and all) are drifting to a state of affairs in which they support themselves by working with the tools belonging to some one else, and land is here classed as a tool. If the farmer doesn't pay his rent some one equally efficient will, and a more efficient man will give more. Any one of the 5,000 shelterless vagabonds of Berlin would willingly pay more rent for the sake of the roof and food, but they are too feeble, mentally and physically, to do the work. The race is to the strong—and that's why so many weakling immigrants stop in New York while there is Western land almost for the asking.

tries like the United States, Australia, and New Zealand have also befogged some writers. There was vast wealth and food untouched by savages too stupid to get them. The newcomers became wealthy. Even the few laborers, by reason of high wages due to the great demand for them and the small supply, became proprietors and employers who had to send abroad for employees and tenants. Our immigration streams are thus composed of those who cannot make a survivable existence abroad—to use a rather tautological term—the failures in an overpopulation. Consequently, they are underbidding for jobs, and in time their wages will be the same as in Europe—mere existence, meat once a week, black bread, and six sleepers to a room. Indeed some of them are in that state now.

The cost of living counted in gold dollars is constantly rising the world over because gold is constantly diminishing in value with the increase in its amount. The actual yearly production of gold does not matter much now, because it is such a small percentage of that already hoarded. The process is the same as when the Mexican silver mines flooded Europe and that metal became so cheap that much more of it was needed for a day's food. Prices of labor and foods rose enormously, but no one got any less or more food for his efforts. In America, the glut of gold makes wages increase too, but not in proportion to materials, because of the greater relative increase of laborers. As shown by John Stuart Mill, the laborers in Europe are temporarily benefited by the emigration drain until the birth rate restores overpopulation and they do not so keenly feel the loss of value of gold and silver; but in America the laborer is damaged by every newcomer and is getting frantic, for he cannot see the reason why a day's labor does not bring the surplus and luxuries it did a generation ago. In time as immigration fills up the land and increases this competition, we will find that wages will sink to what they are everywhere else, just enough to survive in times of plenty, but with distress or even starvation after years of poor harvest. Saving will be possible only to those of exceptional ability, and not to everyone as it was when we had wealth to get for the taking, and the demand for workers could not be filled. These are the brutal normal conditions in the rest of the world as pointed out by economists long ago, and are being slowly brought about by unrestricted immigration. We must expect the cost of living to increase in America as measured by what we can buy with a day's work or day's wages, no matter whether the workmen are paid with a few grains of dear gold or few ounces of cheap. In passing it may be remarked that by a curious delusion, the laborers who are so injured by every newcomer very strongly object to restriction of immigration, while those who are advocating restriction or even exclusion are the well-to-do of the employer class who need cheap labor and are benefited by immigration.

The medical profession must face the growing conditions which, as in Europe and Asia, make it impossible for a sick workman to hire help—doctor or nurse—to buy medicines, or even the food to tide him over until he can again earn a bare existence. Moreover, it takes a wise man to foretell whether the fewer exceptional men who can save for a rainy day will be able to support these indigent sick, all the Lloyd-Georges to the contrary notwithstanding. As for taxing everyone for the purpose, that only increases the cost of living and will prevent a few more from getting the bare necessities. We've been living in a fool's paradise, paved with gold, whose brilliancy has so blinded us that we cannot see into what we are drifting by our over-generous call to the failures of the world to come over and share our beef, and wheat, and coal and iron. We would like to get the wealth back now.

These facts are beginning to dawn on German thinkers, who have likewise been blinded by unexampled prosperity and are now burdened by an army of unemployed, who actually slaughter horses and dogs for food to sustain life. As for New Zealanders and Australians, protected in their wealth by the enormously expensive navy of Great Britain, they too are thinking of the future. We cannot do as they do, for we must protect ourselves. They would not last a year if it were not for their protector keeping out Asiatic and European invaders. The cost of living includes the cost of preventing death in all forms, and there are starving millions in Asia ready to steal this wealth of food in Australasia, but are deterred by the British navy. Australians, therefore, can try all kinds of social experiments out of our reach. Late reports show that they are living beyond their means through supporting the inefficients.

It is evident then that the actual amount of gold given for a day's common labor depends solely on the local cost of living, and it cannot be less. In Japan the wage is between 15 and 20 cents, for that is ample where the houses are cheap, little clothing, fuel, and furniture needed, and the coolie intelligence so low as to need few relaxations. Mechanics and artists can get 50 to 70 cents and this partly relieves the wife of the necessity of laboring. In India it is far less, but it purchases what the two dollars do in New York—survival and but little more. That is, the natural wage the world over is just enough to keep a small family alive. If a man gets more, he is more or less exceptional. If less, he is a pauper. The time is long past when an American laborer can live in comfort and save. He is already near the poverty line. The time is near when no unexceptional man can weather a lean year—the conditions of Russia now. When will economists wake up to biological facts?

Industries could not exist if there was not an idle mass to call on to fill vacancies instantly, for if a single department cannot get men, the whole works must close. If every locomotive engineer were occupied and a sudden disaster overcome some of them and interfered with the milk trains of New York City it would kill 50,000 infants in a week. To avert that disaster other trains would be abandoned and interfere with or stop other business, obligations would not be met, and panic would result. That is, civilization depends upon an unemployed mass for emergencies, and if there was enough food to go round there would be no competition compelling the unemployed to jump into the vacancies. If any of the bizarre plans to end unemployment could possibly succeed, it would thus destroy civilization. It is sad to think that poverty is necessary, but sadness should not lead us to deny the inevitable. What will result when we evolve into some form not human—superman—no one can tell, and it is too far off to bother about. If the unemployed are put on public works, as now seems to be the fashionable theory, taxes are increased and all self-supporting men at the poverty line are pushed over into want, for on the last analysis all taxes come

from the workers no matter how we disguise them.

No man has ever been able to predict events accurately more than fifty years, and then only as a lucky hit when new factors did not enter to disturb calculations. Estimates of future population are notoriously erroneous. So we do not know what will be our state a century hence, nor whether we have intelligence enough to create artificial conditions raising us above the normal elsewhere. Of only one thing can we be certain, and that is, the more numerous we are, the less wealth will there be for each of us, and the cheaper will be labor. What percentage will work for mere existence as in Europe, is beyond our ken, but it will be more than now. This alone will have a vital bearing on the medical profession, and the present reduction of the number of medical students per 100,000 of population must continue, or few can make a living at it.

As illustrations of the above truths, a twenty dollar suit of clothing is almost of the same quality as a twenty dollar suit forty years ago, but the price is really half as the purchasing value of the present dollars is only half of what it once was. From farm to tailor the coat is made in half the time. Now, as the workman gets more of these dollars for a day's labor, he really gets more clothing in a year than he ever did before in the higher civilizations. Everything else he uses is produced more cheaply, too, from the use of better tools. A short, slow ride in a street car formerly cost us five cents, but by better machinery we now get a quick, long ride for a much cheaper five-cent piece. That is, transportation costs only a fourth or fifth of what it did a generation ago. Everything is cheaper from the same causes except luxuries and food, and the latter is under an entirely different law, due to our old habit of breeding to the limit of its production. Man needs more of everything else to survive and gets it. He needs more comforts and rest and gets them, too, but he needs exactly the same weight of food as ever. Modern machinery and methods enable a farmer to raise more food, as previously explained, but more people keep the price up to our working limit. It is nonsense to compare the dollar a bushel wheat of recent years with the shilling a bushel of two centuries ago without comparing the purchasing value of metal and how much of it a man can get by a day's work. The rule is absolutely fixed and invariable—the cost of the laborer's wheat measured by the labor of getting it never varies in the long run, though it is subject to tremendous fluctuations in a new country like America. Nevertheless, as we must have a little better food and other kinds of food every generation, to feed the weaklings now saved but who formerly perished, we actually do get more and better food than ever before, but it takes the same amount of effort—our limit of safety.

All this is due to nature's delightfully simple plan, of letting us breed inordinately and then killing those who cannot get this food, the survivors being those who can survive by their own exertions unless the charity organization steps in to save those the Lord doesn't. Clergymen who advocate large families are fond of saying that "The Lord will provide the food," but the trouble is, that is the very thing the Lord cannot do as He confesses in the famines recently raging in Russia and China. Political economy needs a new foundation, and curiously enough that foundation is an economic law known many ages before there was a science of economics: "The Lord helps him who helps himself," the others shall not possess the earth nor the fulness thereof. This new basis, then, is that no matter what are the necessaries for survival, men are too numerous for all to get them and food goes to those who can get it. Might makes right in the matter of living, and in a lot of other things where we think it should not.

As for the cost of meat, it must be remembered that it is entirely out of the reach of the vast majority of humanity—except, of course, a little fish daily or some pork now and then. For centuries the European peasant could not afford it more than once a week. One of the reasons for the expulsion of Christians from Japan in the 17th century was the fact that they were teaching the peasants to eat the invaluable draft cattle. We have been a beef raising country and have been deceived by its local cheapness, but our increasing numbers are quickly reducing the per capita amount available. It is already out of reach of many, and as the immigration continues it will be so scarce that few mechanics can afford it more than once a week. Moreover, as our farms increase and crowd the grazing area, it will cost more to raise beef and this will put it out of reach of many more. The enormous present cost is perfectly natural, but it is bound to bring diseases of lack of nutrition and perhaps reduce our stature to that of similar ethenic types of Europe.

Finally, it is time to think of the future American descended from those elbowed out of overpopulated Europe because unable to make a living there, but who could do it here where competition did not exist. Millions of them were eliminated this way in the 19th century, and the result has been a progressive rise in the efficiency of the stay-at-homes who are now inconceivably rich, numerous and powerful by reason of their abilities. This kind of elimination has been going on for some thousands of years, so that for a long time all great ideas have originated in Northwestern Europe. The breeder of race horses would be an idiot to breed from only the mares and stallions who get beaten on the race course, and yet there are hundreds of writers who say that we are breeding up, as in Adams County, Ohio, the finest type of man in the history of the world, from those who failed in the race of life in Europe! Great Britain deported her criminals for two centuries and we got a lot of them, so we now have about three hundred times as many murders as England. The newcomers kill our Presidents. The greatest elimination of inefficients was from Ireland, which now has left a splendid, moral, industrious population of increasing prosperity and a minimum of crime, while we have had two great conspiracies of wholesale murder—the Molly Maguires and MacNamaras—and perhaps others.

Surely it is time for political economy to learn a little of survival of the fittest by elimination of the least efficient due to universal overpopulation. Then we can suppress the Ellwoods and Scott Nearings, who won't learn.

There are historical records that law makers for three thousand years or more have been trying to circumvent nature and raise the price of labor and lower that of necessaries while increasing the number of laborers. Almost every conceivable Quixotic plan has been tried,—fixing prices, forbidding or taxing imports or exports, employing the unemployed, varying the size of the coins and a long list of other idiotic performances,—but the net result is absolutely nothing. To-day, as always, the

average man everywhere is struggling for a mere living and cannot raise all his babies without the labor of his children themselves, and the same old tenth cannot keep themselves alive. There is some general law in this proportion of the submerged, for it seems to be the same everywhere—about a tenth, more or less, are ready to die when the harvest fails. It shows how pitiful have been our efforts to end the competition and elimination by which nature evolves higher types which can live by millions where savages perished from inefficiency.

Can we reduce the birth rate so that competition will end, or is there reason to believe that no matter how high we progress there will always be a submerged tenth to excite our pity? The more prosperous and higher the social layer of those who make their own living, the smaller the birth rate; the clergy and nobility are excepted, as their numerous offspring are raised by money contributed by the producers. The higher types of the proletariat, therefore, tend to die out as the birth rate is too small, and the race is kept in existence by those families who have more than enough babies for the survival of their class. The human race then can survive only because there is a general tendency to reproduce more than enough and let them compete for existence.

These are the reasons why all socialistic schemes for ending poverty and distress have failed so far and will always fail—even while the general state of the efficient is constantly improving. Malthusian plans, also, though beneficial to an individual family, cannot possibly alter the conditions of the race or any branch of it, for nothing can alter the basis of our existence. The inefficient poor will be with us always, probably a tenth, and those we must support entirely may be 3 per cent., as at present, but more exact predictions are unwarranted.

Recent studies have shown that our 3 per cent. (dependents and outcasts) are all cases of arrested mental development, while in the 3 per cent. of very exceptional men, mental development may go on to 40. The average mind ceases to grow some time between 14 and 21. If it ceases earlier the person sinks into the submerged tenth. Every year of development after 21 raises it into the well-to-do class a little further.

"Scientific management" or "efficiency," of which we hear so much at present as though it were something new, is as old as man. Its only effect when widely adopted is to increase the output of a day's labor and thus diminish the value of the goods measured by the effort to get them. It has no effect whatever on wages or the difficulty of getting food. It adds to the per capita of the world's wealth but not its food. We have now an enormous and increasing public wealth of roads, houses, water and sewage works, and means of defense, and in the future we shall have better clothes, but we will work to get them just as hard relatively as now. What use will it be to increase efficiency so that we may all wear purple and fine linen, if we continue to breed so that the food will never go round? The unskilled workingman's standard of living in America is the same as that of medieval nobles, but he is on the poverty line all the same.

All this sounds pessimistic, but its purpose is to show why past efforts to end poverty and the high cost of living have failed, and yet why general conditions are constantly improving in spite of the unavoidable evils connected with race advancement. We can lessen the evils still more, but we must recognize the necessity for child labor and make it as wholesome as it was before the industrial age brought the deadly factories. Schools must train workers as well as citizens. Men who procreate beyond their ability to feed and thus allow the babies to die, are morally in the class of murderers. They must at least be considered public enemies and deprived of citizenship, if not imprisoned. They have depended on the Lord long enough, and the public burden of baby saving is irksome. People who depend on public relief of any kind—from dispensaries to almshouses—must not be permitted to have any share in public affairs; that is, the franchise must be limited to the self-supporting. These and many other lines of effort will surely lessen evils we cannot eliminate. We do not seem able to hasten the reduction of the general birth rate as Malthus advised, and it is fortunate we cannot.

Perhaps it would be clearer to state the proposition in more general terms, by dividing the cost of living into two parts, first that of the actual food needed to keep alive (carbon, nitrogen, water, etc.), and, second, of all the rest (protection from injury of all sorts, and that means clothing, housing, police, etc.). Recreation though necessary will be ignored as it need not cost a cent, but might cost a fortune. The cost of food except in new countries never varies from century to century the world over; it is something near three-fourths of the total energy of the least efficient self-supporting person, the rest of his necessaries require the other fourth of his total energy, but he gets more of these necessaries every decade. This man cannot marry unless his wife helps to obtain food or virtually supports herself. If disease or babies come, the family drops into the submerged tenth who cannot live without aid of their betters. The average man the world over is so much more intelligent and energetic, that he can obtain food for himself and wife and three children, providing the wife helps in some way, but their other necessaries are reduced to the minimum. If there are more than three helpless children, all are in poverty, if less they are opulent. Only a small percentage of the men of any high race, about one-tenth, are able to support a wife and three children without any aid from them; that is, they are able to hire help. Those who can raise a large family without their assistance—the rich—are as few as those who are public paupers. This is in accordance with the law of averages discovered by Quetelet a century ago, the average barely survive and the exceptional men on each side—the poverty stricken and well-to-do—are in equal proportions at any one place. But the higher the civilization the more do men vary from the average—more paupers and more millionaires. Savage tribes have neither class.

In every characteristic the more exceptional a man is, the fewer are in his class. The most efficient get food by the expenditure of only a fraction of their energy, the rest goes for luxuries or for hoarding. The cost of living in every case is measured by the energy of the fittest for survival—the self-supporting—the average who make the species—and competition for food urges them to bid the price up to their limit. If we measure the cost of living by the effort to make a living, every fact in history shows that the cost of living is unchangeable. It is not increasing except in new countries. It cannot increase in the old, as periodical famines remove competitors when too numerous, and emigration gives only temporary relief.

SPORADIC AND EPIDEMIC POLIOMYELITIS.

By WILLIAM HANNA THOMSON, M.D., LL.D.,

NEW YORK.

Sporadic poliomyelitis and epidemic poliomyelitis are two distinct affections, differing both in their cause and in their nature. Sporadic poliomyelitis is plainly as accidental an affection as a broken leg. A child, when heated in play, sits on a cold door step, or lies down on cold ground, and that night wakes up with a backache, which is commonly associated with slight fever. In the morning it is found unable to move its legs. After a few days one of its disabled legs recovers completely, but not so the other, certain groups of its muscles remaining paralyzed, and then undergoing an atrophy which lasts for life. Now none of this child's young brothers or sisters, nor any of its companions catch this disability from it, because it is no more communicable than a sprained ankle or a dislocated shoulder. There is no case on record of this long, well-known form of poliomyelitis spreading from one person to another, and thus becoming epidemic.

But there is a poliomyelitis which is epidemic. That fact of itself should call for investigation to find whether this form does not show characters which wholly separate it from our old familiar sporadic form. Affections like inflammations of joints, which have certain features in common, are often confounded together, such as rheumatism and gout. But neither rheumatism nor gout differ so essentially from one another as on investigation we find to be the case between sporadic and epidemic poliomyelitis. This difference is clearly illustrated by the findings of pathological anatomy. In the sporadic form only the anterior horns with their motor fibers are changed, the affection being strictly limited to parts of the spinal cord supplied by a branch of the anterior spinal artery. In epidemic poliomyelitis, the changes instead of being limited, involve, according to Flexner, the spinal cord, intervertebral ganglia, medulla, pons, cerebellum, and meninges, with injury to the white matter of both the spinal cord and brain. Moreover it induces serious changes in the whole lymphoid tissue of the body including the agminated glands of the intestine. Besides these, there occur visceral lesions in the lungs and in the liver.

These facts readily explain another significant contrast between the two affections. Sporadic poliomyelitis but rarely causes death, or even much constitutional disturbance, all on account of its limited extent. It does not invade the posterior horns nor cause transverse myelitis, nor ascending or descending cord changes. The patients subsequently enjoy perfect health, with the exception of localized paralysis. Epidemic poliomyelitis, on the other hand, is a fatal disease, the death rate varying from six to ten per cent. in different epidemics or localities. In epidemic poliomyelitis, notwithstanding the widespread derangements which it occasions, the disease usually passes on in a remarkably short time to complete recovery in most patients. This is another striking contrast, for the disabling results of sporadic poliomyelitis are both invariable and life-long in their duration.

We would, therefore, emphasize anew the great and contrasting anatomical changes which epidemic poliomyelitis causes, so as to show that these two affections no more resemble one another than smallpox resembles urticaria. Epidemic poliomyelitis, unlike sporadic poliomyelitis, causes enlargement of the mesenteric glands, and enlargement of the spleen, thymus, and tonsils, and superficial and deep glands of the neck, and focal necroses of the liver cells, besides all those widespread changes already mentioned in the substance of the cord and brain. Hence it presents all the characters of a virulent infection, and therefore can, and does become epidemic. Also that instances of it can occur *de novo* or sporadically is no more likely than in the case of typhoid fever.

Now we have said that these two affections differ altogether in their etiology and pathology. We have already discussed the mechanism of that frequent cause of disease and of death, commonly termed "catching cold" (Medical Record, February 17, 1912, page 301). Catching cold is caused by some localized shutting off of arterial blood from the part. This occurs whenever a local chill affects a part of the surface of the body which has vasomotor associations with internal parts or organs. The vasomotor nerves ramify on the coats of the arteries so as to control their caliber, either contracting or dilating same, according to the functional needs of the part. Among other laws of vasomotor association, which we cited, is the intimate association between the vasomotor nerves of the skin and the circulation of parts underneath that cutaneous area. No cells of any texture, such as those of the mucous membranes, can suffer any withdrawal, however brief, of any arterial, but not venous blood without injury. But this is particularly the case with the nerve cells, for these at once are disorganized by the shutting off of their arterial supply. Hence if a child has a local chill on any part of the skin over the spinal cord, it is then very liable to suffer from the changes in its arterial circulation, which in this case are limited to the branches of the anterior spinal artery.

In both diseases we have children affected much oftener than older patients. This may be explained by the vulnerability in children of the spinal cord to injuries, especially as the pyramidal tracts are so late in their development, and thus more liable to derangement. In the sporadic form the growth of the leg may be so affected as to become shorter than the other, and from the first its vasomotor nerves are so involved that the limb becomes cold. As time goes on, the atrophied muscles produce not only lameness, but deformity of the joints, which have to be specially treated, so as to compensate for this disability. Such particular and localized changes do not occur in the epidemic form.

The incidence of the epidemic form is strikingly according to the season of the year, namely, during the summer months, while the sporadic form commonly occurs during cold weather. The epidemic form has occurred in Europe in scattered localities, in France, Italy, Germany, and Denmark, more especially in Sweden. In the United States it has been very prevalent, occurring in the majority of the states of the Union. There can be no question that the epidemic form is of the nature of an infection, and therefore the question of its communicability is of great importance, that is, whether it may be directly communicated so that it may be properly termed "contagious," or indirectly as in typhoid fever, by some intermediate carrier. Such a question cannot well be determined in crowded cities, hence the importance of a careful study of the epidemics in purely rural communities. Thus I

was called in consultation to see a boy living in an agricultural neighborhood in Dutchess County, New York. He was then paralyzed in both legs, and had considerable difficulty in micturition, which never occurs in the sporadic form. I learned that the boy who sat next to him on a bench in a schoolhouse had been taken with the disease eight days previously, and died from it in four days. I was then taken three miles to a house in which a young woman was comatose with all the symptoms of cerebrospinal meningitis, from which she died. I then learned that the boy whom I first saw was a cousin of hers, and that he slept in her house for two nights, five days previous to the first symptoms which she developed. So far as these cases went, therefore, they would indicate that the disease was communicated from one patient to another directly. I therefore urged the physicians who called me in consultation that they should ask for a committee of their county medical society to investigate the succession of cases in a district of about twelve square miles, where people were very likely to be acquainted with one another, impressing upon them the importance of such observations being made there, compared with any observations in large towns or cities; but though I offered to present their reports before the New York Academy of Medicine, of which I was then president, I heard nothing more on the subject.

In this connection I would refer to the great benefit which the whole medical profession received from the reports published by the Danish Government on the subject of Asiatic cholera, when it prevailed in that kingdom in the year 1853. In the year 1855 the State Board of Massachusetts published a statement to reassure the public about Asiatic cholera, which was then approaching our shores and Europe. The Board then stated that Asiatic cholera was in no sense contagious, by which they evidently meant communicable, but that it was due to a miasm diffused through the air. Both these statements were mischievous errors, because the experience in Denmark showed that no case of cholera occurred which had not been in some way connected with a previous case. Secondly, we now know that there is no miasm, and that so-called miasmatic diseases, instead of exhaling from swampy districts, are really due to animal organisms carried by the mosquito *Anopheles claviger*, and communicated by hypodermic injections by this insect. Now in Denmark the government had issued instructions to all physicians practising in rural communities, directing them to carefully note the first five patients in their neighborhood who developed Asiatic cholera, and when these reports were all collected, they afforded conclusive proof that Asiatic cholera is a disease communicated from one person to another, and that it spreads in no other way.

In the widespread epidemic of poliomyelitis in the City of New York three years ago, the symptoms of the disease were often scarcely distinguishable from those of cerebrospinal meningitis, a fact not surprising, considering how often epidemic poliomyelitis begins in the blood vessels of the meninges. Epidemic poliomyelitis, when it occurs in rural communities, is plainly a communicable disease, and hence the profession should take steps to have it thoroughly investigated by competent observers whenever an isolated epidemic is reported. In large cities, on the other hand, it is often impossible to settle how any infectious disease is propagated, whether it be measles, diphtheria, whooping cough or the rest. The one practical conclusion is that if any infection is suspected to be directly communicable, the only measure then to deal with it should be by isolation or quarantine.

70 East Fifty-fourth Street.

THE PERSISTENCE OF CERTAIN RACIAL CHARACTERISTICS.

By PEARCE KINTZING, B.Sc., M.D.,

BALTIMORE, MD.

PROFESSOR OF PRACTICE OF MEDICINE AND PHYSICAL DIAGNOSIS, MARYLAND MEDICAL COLLEGE; PHYSICIAN TO THE FRANKLIN SQUARE HOSPITAL, ETC.

Some ten years ago I made a modest contribution to anthropological literature by publishing a series of observations upon the transmission of certain racial characteristics and the modifications that these underwent when the blood of the race in question was mixed with the blood of other races. Particularly these observations called attention to the persistence of certain variations in the descendants of the American negro in the event of intermarriage with the white race, and endeavored to determine the degree of blood dilution at which they severally disappeared.

The article in question attracted unexpected attention. It was abstracted by numerous medical journals in this country, reappeared in a French publication, was abstracted by at least one in Germany, and various parts of it appeared from time to time in the lay press, sometimes with the errors and misinterpretations incident to lay journalism.

The matter has a certain medicolegal interest which has increased since the appearance of the original article, owing to various States having passed enactments against miscegenation. Since I am able to add a few recent observations to those previously made, and since the original is long out of print and the publishing company thereof disbanded, I have decided to reprint the gist of the former paper, with the additions alluded to. If further reason were necessary, I would say that in several cases wherein I have been summoned to give expert testimony upon the question here discussed, it has appeared that there have been published remarkably few, if any scientific treatises upon this particular subject, and a search of the Congressional and Surgeon-General's Libraries has been practically barren of results.

From numerous allusions found in contemporary literature, especially in the writings of continental authors, it would seem that there is a widespread and generally accepted opinion that an admixture of white blood with African or negro blood imparts certain characteristics that are extraordinarily persistent, and that however attenuated the blood mixture, the stigma may be recognized by these peculiarities. The opinion seemingly prevails that the strain may be thus verified even when wholly unsuspected and when the general physiognomic traits would not indicate its presence, thus giving to the signs a definite medicolegal value. Among the most commonly mentioned signs are certain peculiarities of the fingernails. Thus Dumas, in one of his dramas, makes the denouement turn upon the detection by this means of the imposturing of a colored woman. Eactly what the signs are is not made clear. Although I have frequently encountered the idea in literature, the proposition is usually rather vaguely defined or expressed in terms too general to

have any real ethnic value. For this reason I am at present able to refer the reader only to three writers who set forth the idea with any degree of exactness. Paul Bourget, in "Cosmopolis," says of Florent:

"Il fallait le coup d'œil d'une Yankee pour discerner sous les ongles de ce bel adolescent un peu bruni la toute petite goutte de ce sang noir déja si lointain"—It would have required the keen glance of a Yankee eye to discern under the nails of this handsome, somewhat bronzed youth, the infinitesimal drop of black blood already so distant. Here the author probably refers to that bronzing of the nail so often seen in the colored races, and which in appearance is somewhat analogous to, the discoloration produced in the fingernail of the surgeon, after prolonged immersion in a solution of mecuric chloride. The only other interpretation that I am able to give to his words is, that the flesh beneath the transparent nail showed a difference in coloration, which could be detected by the practised eye, but which would not be remarked by the casual observer.

The following extract is from Theodor Storm's Jenseit des Meeres: "Als ich auf die schlanken weissen Fingerchen blickte, erschien mir daran, anders, als ich es sonst gesehen hatte. Die kleinen Halbmonde an den Wurzeln der Nägel waren nicht wie bei uns Andern heller, sondern blaulich und dunkler als der übrige Theil derselben. Ich hatte damals noch nicht gelesen, dass dies als Kennzeichen jener oft so schonen Parias der amerikanischen Staaten gilt, in deren Adern auch nur ein Tropfen schwarzen Sklavenblutes lauft, u.s.w."—As I gazed upon the slim, white fingers, there appeared to me to be something different there from what I had ever before seen. The small halfmoons at the roots of the nails were not as with us brighter, but bluish and darker than the upper part thereof. At this time I had not yet read that this is accepted as a sure token over there, of the ofttimes beautiful American pariah, in whose veins runs even the smallest drop of black slave blood.

No less a personage than Edward B. Tyler, D.C.L., F.R.S., in his introduction to Anthropology, says: "In the southern United States, the traces of negro descent were noted with the utmost nicety. Even where the mixture was so slight that the untrained eye noticed nothing beyond a brunette complexion, the intruder who had ventured to sit down at a public dinner table was called upon to show his hands, and the African taint detected by the dark tinge at the root of the finger-nail."

Here the proposition is clearly and definitely set forth. Likewise, the idea seems to have gained considerable prevalence in the South, that the nails of the negro possess distinctive characteristics, and while one often hears the expression, "nails like a negro," yet I have failed to find any unconfused or uniform idea associated therewith. Perhaps the most prevalent notion is that the lunettes are absent, or that they are transparent instead of being like ground glass in color, and that the underlying flesh differs in color from the pale pink tinge of the Caucasian.

In view of these literary allusions and the generally prevalent belief, I formulated the following proposition:

What physical traits of the negro persist in the case of blood dilution with Caucasians, and to what degree of descent are such traits transmitted? Do the nails of negroes and persons of mixed blood possess distinctive attributes? Is it possible to verify this admixture of blood when the general racial characteristics fail to indicate it?

Two general anthropomorphic principles may be laid down; first, that in the transmission of physical characteristics of development, those that are especially marked and prevalent in the one race are most apt to be transmitted to the offspring in the event of sanguineous racial admixture, though with certain modifications, even when such transmission seemingly is contrary to the general trend of evolution. Particularly is this the case with regard to variations in the osseous system, to pigmentation, to the more or less distinctive odor of the body, the color of the iris and sclerotics, and, to a less degree, to the appendages—the hair, the teeth, the nails. Second, that a much greater range of variations is found in the male than in the female.

Another principle of transmission is that the traits of the stronger parent prevail. Now in our country, offspring resulting from the union of white men with negro women is much more common than the reverse; consequently, the characteristic traits of the negro disappear more rapidly in the offspring resulting from such unions than would be apparent in general admixtures where sex selection was equal. In the cases of union between white women and colored men that have come under my notice, the women were usually of a very inferior social order, of the Slav or Magyar races, showing marks of mental and moral degradation—very seldom were they Anglo-Saxons—and most often such unions were barren of offspring. Hence the problem practically resolves itself into observations upon dilute blooded negroes sprung originally from the union of white males with negro females.

My hospital clinic (at that time the Hospital of the Good Samaritan and the clinic of the Women's Medical College) was largely attended by both colored and mixed races. Believing that it offered a favorable field for observation upon the propositions in question, I have, with this end in view, examined in the course of the past three years over five hundred suitable cases, in order to arrive at such conclusions as might be reached from ocular observation alone.

The term "mixed races" as used herein, refers to varying admixtures of negro and white blood. The term mulatto being used to indicate the cross between the full white and the full blooded negro; the quadroon or quarter blood, meaning the descendant of a mulatto and a white person; octoroon, indicates the cross between the quadroon and the white blood, while the term sambo (Sp. *zambo*) signifies, ethnologically, the return towards the negro type, being the descendant of a negro and a mulatto.

The general physiognomic characteristics of the negro are well known and need not here be described, but it may be advantageous to refer to a few of the less known variations, some of which are peculiarly persistent, and upon which racial recognition mainly depends. Such are the changes in the alar cartilages of the nose, the pigmentary deposits about the genitalia and in other localities, the relative length of the femur to the tibia, the stretch, the shape of the hairs, and, most eminently, the variations in the nails; hence it is to these details that I shall particularly direct attention.

It is to be noted that the negro characteristics in the offspring become more evident in practically all cases with advancing years; young children showing indifferent traits, while those of the same

family, beyond the age of puberty often display noticeable negro inclinations. Especially is this true of skin pigmentation. Not infrequently have I been asked whether negro babies are not born white. Needless to say this idea is wholly erroneous. Although the offspring of even the darkest skinned parents are invariably much lighter at birth than the parents, they soon darken. Sections of the skin that I have made from still births show the pigment layer to be present. Normal negro infants are included within a color scale between light putty and café-au-lait. These and other observations show conclusively that certain markings present at birth develop with growth, and that others are not apparent until a definite age of development is reached.

To illustrate: In a recent case of miscegenation in which I testified,*a boy of eighteen showed no positive racial signs upon which conclusive evidence could be based, yet an examination of the mother, a quadroon, gave unmistakable evidence of negro blood, and an older sister gave similar, though less conclusive, evidence. I was told that the brother and sister were each octoroons, but by different fathers.

To cite another example: A boy of 6 came to the dispensary, and while I pride myself on being able to classify accurately the two races, the boy was entered as white. Later, when he returned with an older sister, the mistake was apparent, yet a close family likeness was noticeable. Among the individuals examined were the members of two Washington families, who for two generations have passed for white, but who, in the third generation backward, to personal knowledge, showed the light touch of Tubal. The children of the present generation are of light blonde type, with flaxen hair, and in facial conformity are more widely removed from their prototype than the number of generations would indicate. The iris is generally blue, and the sclerotic shows no pigment stains, such as may be observed in mixed blood, nor does the pigment layer underlying the sclerotic impart to it the transparent blue coloration characteristic of negro blood. The nails also are negative.

The Nose.—In the white races, without exception, the alar cartilages of the nose do not meet in the median line in front, but leave a considerable hiatus into which projects the cartilaginous portion of the septum naris. Further, the alar cartilages are sharply beveled, the interval being most marked at the apex where they project considerably beyond the septum. This may be felt readily by placing the tip of the finger against the tip of the nose. In the negro race the interval betwen the two lateral cartilages does not exist, the bevel is wanting, and the cartilages join each other so symmetrically that it is impossible to distinguish by touch that they are not one piece. It is this variation in the alar cartilages that gives to the nose of the true negro its breadth and to the mulatto's nose its rotundity. I make this lengthy mention since I recall no descriptive anatomist who has heretofore (1899) called attention to this fact. The peculiarity is fairly persistent, and, generally, may be recognized in quadroons, but fails to maintain itself in much diluted blood, and would not be recognizable when confirmatory signs, such as color, conformation of the face, quality of the hair, and odor are lacking. The upward tilt of the negro nose is shared by Tartars and other Asiatics. It disappears much earlier than the trait above described.

*State of Md. vs. Saunders (Howard Co.).

The Hair.—The hair of the negro, coarse, black, woolly and kinky. (Ethnol. "Ulotriches"), on closer examination presents noteworthy peculiarities. Hair of intense black color is found through a wide range of climates and races, such as American Indians, Chinese, Japanese, Jews, the races of India and almost all of the Latin peoples. In most of these, however, as the Asiatics and American Indians, the hair is straight (Ethnol. "Lissotriches"), although some Indian tribes show a waviness like a horse's mane. On cross section the hairs of the Asiatics and our Indians are found to be round and the cross section area fully twice the size of the average Anglo-Saxon blonde hair, and, generally, to show a central cylinder. The light hair of the Caucasians on cross section is seen to be ovoid and the central pigment cylinder is absent. The negro's hair on section is an elongated ellipse with very flat sides. Longitudinally it shows nodes or kinks at short intervals. This variation is one of the most persistent of the race and one of the last to disappear. In one case wherein I testified, the defense endeavored to establish the claim that the accused was of Indian descent.* Although none of the other general characteristics was quite sufficient to establish the contention that the man was of negro blood, yet the hair showed that he was not an Indian and allowed me to say that in all probability he was of negro descent. His mother, who was introduced by the defense to establish the Indian claim, was easily shown to be a negro.

Odor.—The odor of the negro is distinctive and is much more apparent in hot weather than in cold. The matter of its persistence is very variable and seems to be an individual rather than a racial characteristic. It is noticeable in the secretions of the genitalia long after it disappears as a general trait, but is too intangible to possess much value save as confirmatory evidence.

Osseous Variations.—The midpoint of the human body, measured longitudinally, is the symphysis pubis and in well formed individuals, male and female, is fairly constant, although, as pointed out by B. A. Gould, the length of the legs is, in man, one of the most variable points. In the negro, however, the symphysis is situated above the midheight generally, owing to the extreme length of the femur and tibia compared with the length of the spine. Further, our comparative measurements of the tibias and femurs in the two races show (*a*) that the femur very generally is longer in negroes than in whites of the same height, and (*b*) that compared to the length of the tibia the relative length of the femur is likewise much greater in the negro than in the white.

The stretch, *i. e.* the distance from finger-tip to finger-tip with the arms extended to their fullest possible length, in the white race usually exceeds the height of the individual, especially in males, by a small fraction. In negro males the stretch exceeds the height to a greater degree than in any other non-Caucasian race and is much greater than in the white race, four inches being not rare, and in one instance five and one-half inches was noted. These variations, however, soon fail as we depart from the true negro, and even in light skinned individuals have little significance. Many other osseous variations might be dwelled upon, as the greater length of the os calcis, the more pronounced development of the superciliary ridges, the general configuration of the skull, the tendency of the distal phalanx of

*State of Md. vs. Connors.

the great toe to project upwards—in fact, a score of others—but they are not pertinent to the purpose of the present article.

Pigmentation.—General pigmentation disappears quite uniformly with the approach toward the white race, but is prone to persist in certain localities where white persons likewise show unusual pigmentation. Such places are the nape of the neck close to the hair, the genital regions, about the orbits, and sometimes the cheeks. The nails will be described separately.

Pigment, likewise, is sometimes found in locations where it is not prevalent in white persons, as in the sclerotics, the schneiderian and other mucous membranes, in the cerebellum and the cerebral ventricles. Darwin believed that the negro's keenness of smell was correlated to the pigmentation of the olfactory tracts.

Upon the genitalia characteristics pigmentation sufficient to recognize the race persists very generally to the third generation, but thereafter is subject to great variation and uncertainty; nevertheless, when present, it is very positive evidence of negro derivation. A peculiar lentigo or freckling of the skin of the face and back is often observed in negroes of very light tint and dilute blood, particularly females. This consists of small, very superficial, round or oval flakes of pigment which appear strikingly superficial, seemingly as though flecked with a brush upon the epidermis. These spots are more regular and proportionally darker than the lentigo of the whites, being often the color of browned coffee. Upon the sclerotics, likewise, small points and blotches of pigment often are seen; the sclerotics frequently present a muddy, yellowish tinge.

Pigmentation being common to many races, is by no means distinctive, but in cases involving simply the question of negro admixture is distinctly trustworthy.

The Nails.—First, a few observations on the general character of the fingernail of the pure-blooded negro. In this race, as found in this vicinity, the nails are usually of coarse texture, showing frequent longitudinal striæ, but very generally showing the presence of well-developed, prominent crescents. Indeed, my observations would lead me to the belief that the crescents are not less frequently present in the pure black than in the pure white races, since I was particularly struck by the fact that in the lower orders of European races they were found frequently to be absent, especially among Poles, Hungarians, Hebrews, and Russians. The body of the nail often shows pigmentation by reflected light, and the darker hue of the underlying flesh gives it a dark, dusky color, varying from brown to bluish-purple. The matrix is tightly adherent and on its upper surface, with the exception of a few longitudinal fissures, is continuous with the epiderm.

When, however, we examine the mixed races, we are immediately struck with a marked peculiarity, namely, the very general absence of the half-moons. This peculiarity shows itself as soon as we depart from the true negro and is markedly true of individuals who might be classed as mulattos, quadroons, and octoroons. In those of still more attenuated blood we get a gradual return of the lunette, which return bears a pretty constant ratio to the attenuation, and therefore serves as a fair index of ascent in the scale toward the white race.

It recurs first on the thumb, where it is often found with considerable admixture of dark blood; next, it is found most often on the little finger, and then on the index finger, after that, perhaps on the middle finger, occurring numerically oftener in the individual, as has been said, as the admixture of dark blood thins. Likewise the two hands are more frequently in harmony in the more blood-attenuated individuals. This description applies to those individuals in whom the admixture of negro blood is unmistakable and in whom it is plainly apparent owing to pigmentation and physiognomonic markings, and in whom therefore the traits enumerated, while interesting as variations, do not bear directly on the proposition. Moreover, in this class, the body of such nails, by reason of pigmentation between or beneath the layers could readily be recognized by a practised observer as belonging to a colored person.

As intimated, the flesh beneath the negro nail is dark in color, often of a bluish or purplish tinge, thence varying to the dusky color of lean ham. Especially is this color recognizable beneath the lunette. Further, it is quite true that the semi-transparency of the lunette and the underlying coloration described often persist to an unusual degree of mixed descent, recognizable very generally to the third generation, but not always. On the other hand, it is recognizable in the fourth generation with the utmost rarity, and therefore, of little, if any, value beyond the third generation.

The principal interest naturally centered in the examination of individuals whose features and color did not stamp them as of negro descent, but who admitted or were known to have contaminated blood in their veins. A careful examination of a large number of these, utterly failed to reveal any distinctive markings which would designate the "pariah."

The experiment was made a number of times of covering such persons and allowing the students who had assisted in the work to guess whether the individual were white or colored, the nails alone being exposed. It is to be noted that in a number of the cases herein referred to, the general racial traits were so far absent that critical examination did not enable me to classify them correctly. Especially was this the case with young children and with males more than females, which might be accounted for on the grounds of sex selection.

In conclusion, I express my belief that there is no positive sign whereby a very attenuated strain of negro blood may be asserted, the prevalent idea to the contrary notwithstanding.

1321 North Charles Street.

THE AFTER-CARE OF DISCHARGED CASES OF PULMONARY TUBERCULOSIS.*

By ALFRED MEYER, M.D.,

NEW YORK.

Let me state this problem a little more broadly: What shall be done *with* or *by* the large number of patients suffering from pulmonary tuberculosis who have been discharged from institutions, and how can the interests not only of the patient but also of his family and of the community best be served?

The problem varies somewhat according to whether a patient has been discharged with the hopeful labels of "apparently cured" or "disease arrested," or the less hopeful one of "improved," or, worst of all, "unimproved," which almost always means "worse."

"Apparently cured" and "disease arrested" cases

*Read before the Third New York City Conference of Charities and Correction, May 8, 1912.

most frequently return to the wage-earning class, as do a good proportion of the improved. The remainder are unable to do so and must either join the ranks of the rounders who are provided for by institution after institution until death, or they remain at home, a menace to their surroundings always, and all too frequently a focus of infection for other members of their family. This aspect of after-care is well illustrated in a study made by the National Council of Jewish Women. Three hundred cases of all stages discharged from Raybrook, Otisville, and Bedford Sanatoria during a period of five years were investigated. One hundred and thirteen, that is, over 37 per cent., occupied rooms with other members of their family, and 42, over 13 per cent., did not sleep alone. In another series of 361 at home cases reported by Miss Crowell for the Association of Tuberculosis Clinics, over one-fifth of the cases were sharing their bed with another member of the family.

In any systematic plan in our city for dealing with discharged cases the first and most important step is to provide a great increase of hospital beds for the advanced and far advanced cases. The State Sanatorium at Raybrook does not keep such cases longer than nine months; Otisville is not expected to keep them, and Bedford gives them a year, but then refers them to the Montefiore Home in the city, or to the inadequate care of their relations. In numerous instances the patients are too sick to travel and the sanatorium is forced to keep them until relieved by death. This often, unfortunately, means the occupancy for many months of beds established for the care of incipient and presumably curable cases that were ultimately to return to the wage-earning class. The needs of New York City with regard to hospital accommodation for such cases and the almost inhuman inadequacy of the present provision is well presented in a report issued by the Tuberculosis Committee of the Charity Organization Society in June, 1911: "A careful study has been made of the whole hospital situation, and it has been estimated on the basis of figures at hand that we need at once between 6,500 and 7,000 tuberculosis hospital beds, nearly 4,000 more than we now have."

Under these circumstances it is quite natural that physicians and philanthropic workers have been looking forward eagerly to the completion of the Sea View Hospital on Staten Island with its more than 1,000 beds, the largest single antituberculosis undertaking by the city since the agitation and crusade against this disease began. There is a horde of people awaiting care at such a place—people who have been at different times in charge of sanatoria, hospitals, and tuberculosis clinics. The eagerness is tempered with a feeling of regret that over six years have passed since the initial appropriation was made and the institution is still unprepared for the admission of patients—six years full of delays, some avoidable, some unavoidable, not creditable to our city government when compared with similar undertakings by private citizens.

Such institutional after-care for the presumably incurable cases is the one to be urged from the point of view of patient, family, and community until death relieves the patient of his suffering and the family and municipality of their responsibility. Unfortunately a considerable minority of such cases, for reasons of a domestic nature, prefers to remain at home. For them the opening of the East River Homes ought to prove a great boon. From the point of view of the home care of tuberculous patients nothing has happened in recent years in New York City to compare with this in importance. It is a well thought out and well executed plan for the humane housing of these unfortunates. It needs only a fuller acquaintance with them on the part of the medical profession and the people to get the needed cooperation which will make for the ultimate success of the scheme.

An important need in the after-care of arrested or apparently cured cases is a periodic reexamination of the patient, say, every three or four months, irrespective of how he feels or what he thinks. The plan is certainly feasible for tuberculosis clinic cases, and they form the major part of cases in New York requiring public care and supervision. Relapses might be diminished in frequency and extension of the disease more promptly recognized. For cases discharged from out-of-town institutions this would not be so feasible.

An increase in the number of women's auxiliaries connected with the tuberculosis clinics would also appear desirable. There are only nine such now in existence, whereas the clinics number twenty-three. When all is summed up that is being done by various agencies in the after-care of discharged cases, the lamentable fact still remains that many relapse because they are compelled to return to the unhygienic living and working conditions in the tenements of our cities. Thus as the Bedford Sanatorium of the Montefiore Home in the nine years 1902 till 1911, 153 men were readmitted with relapses, and four of these were admitted a third time. Similar experiences are reported by tuberculosis institutions and workers all over the world. Thus in a recent report of the Charity Organization Society Tuberculosis Committee prepared by Mr. Mann it was shown that there were 1,688 cases of homeless patients admitted to hospitals for the second, third, fourth, fifth, or more times in the fifteen months ending March 20, 1912. I do not know to what medical classification they belonged.

The time seems ripe for the introduction of another factor into the after-care of apparently cured and arrested cases, and that is the establishment of industrial and farming colonies. This is not a new idea; it has been advanced by many writers in different countries, but very little practical headway has been made anywhere. A few small farm colonies have been established; nothing has been done along industrial lines. Thus Dr. Philip of Edinburgh, after many years of endeavor to create public opinion, finally succeeded two years ago in establishing a 50-acre farm at Springfield, seven miles from Edinburgh, for arrested cases from the Royal Victoria Hospital. Another small post-sanatorium farm colony is operated successfully at Sannum in Oldenburg, Germany; in Norway, Sweden, and Switzerland the matter has scarcely progressed beyond the point of suggestion and agitation.

In our own country the experiment has been tried on a very small scale by the Eudowood Sanatorium, Md. It purchased a tract of land adjacent to the institution and eight men and boys who had been discharged were put to work raising hay, corn, and tomatoes. Wages were given. It is claimed "that this is the first attempt in this country to provide those leaving a sanatorium with work in a field where they may be able either partially or completely to support themselves under such guidance and in such favorable surroundings that the cure they have made is likely to become permanent."

The idea is really an extension to the patients *after* discharge of the method of work under supervision which already prevails in a number of our American Sanatoria. Thus Dr. Biggs says of Otisville, "that it is the policy to administer the institution as largely as possible through arrested cases—work is provided for a considerable number and experiments are being undertaken to build proper houses for such employees and their families and actually to supervise all the conditions of life of these ex-patients and their families even as if they were still inmates of the institution." Similarly at Saranac Lake, Trudeau has started a workshop at an outlay of between seven and eight thousand dollars. At times as many as fifty patients are engaged here in a great variety of occupations: carpentry, cabinet and all sheet metal work, typewriting, lace work and lace loom manufacturing, printing, illuminating, bookbinding, photography, framing, glass and leather work. The teaching staff consists of one superintendent and two assistants. At the Bedford Sanatorium for some years small individual truck gardens have been worked by about 75 patients, including children, under the guidance of a paid graduate of an agricultural school.

Enlarging then upon this idea I would advocate the establishment of farming and industrial colonies by one of the following methods: either as annexes to existing sanatoria, one at Raybrook under State control, one at Otisville under municipal control, one at Liberty, one at Bedford and one at Stonywold; or by the establishment of such colonies as independent undertakings, by public and private philanthropy apart from pre-existing institutions.

Of the two methods I prefer that of annexes to existing institutions for the following reasons:

It will be easier to get the patients to remain because of familiarity with their environment and because of restoration to health at that place.

It will be easier to prepare the way for the settlement of other members of the family in the same community during the last weeks or months of sanatorium care, and pending discharge.

It will be easier to acquire land for factories and farms because communities where sanatoria already exist would not oppose their establishment, for they haven't the phthisiophobia prevalent everywhere else.

It will be easier to enlist the aid—both by counsel in the developing stage and by guidance and supervision in the fully developed stage—of many medical men who have been most enthusiastic in the tuberculosis campaign. The same applies to the volunteer boards of lay people now administering some of these institutions.

It will avoid much of the delay that would be caused by hunting for new sites and a discussion of their general availability for the care of convalescent tuberculosis cases.

It may prove easier to obtain financial aid from state, municipal, and private sources as an extension and evolution of the humanitarian work already undertaken by them, rather than for the initiation of an entirely independent scheme.

The possibilities of industrial colony development apart from pre-existing institutions or communities are illustrated by the work done at Woodbine, N. J., under the auspices of the Baron De Hirsch fund. This colony was started twenty odd years ago for the benefit of Russian Hebrew immigrants. It is now a well-ordered, self-governing community of between 2,500 and 3,000 souls with model streets, homes, schoolhouses, and factories. Lots were sold on easy terms, mortgages being gradually paid off and not more than two families permitted in one house. The industries include manufacturing of clothing, hats, sweaters, machines, and yarn. The farming aspect has been less successful, but for easily explained causes avoidable by similar undertakings in the future.

Of course the illustration is not perfect (What illustration is?) because the Woodbine colonists were not convalescents from tuberculosis. But at least they were handicapped in many other ways—driven from home by religious persecution, settling as involuntary colonists in a strange land, among strangers, speaking a strange language and encountering customs and manners equally strange; still they have found a foothold on the soil, and are rearing their children—yes, and already their grand-children—among conditions that permit the rational pursuit of health and happiness.

Although I prefer the annex idea for the reasons already mentioned, still I must admit that the State has given an example of success by the alternative plan in dealing with another disease. I mean the colonies for epileptics and feeble-minded at Sonyea and Letchworth Village.

In this paper I have not considered at all the question of the care of the vagrant and alcoholic cases, whose number has been proved to be very great. For these I would favor compulsory segregation, and the suggestion to use Riverside and the Metropolitan Hospitals for this purpose seems a good one.

I am well aware that I have advocated a plan for the enlargement of tuberculosis work in this community which is colossal, and which will require great sums of money, and the thought and energy and enthusiasm of many workers for years to come. I agree with Dr. Gulick that in public health matters *what* to do is a medical question—*how* to get it done is a social question; a problem for the social engineer.

785 Madison Avenue.

THE INSURANCE EXAMINER AND BLOOD PRESSURE TEST.

By FRANCIS ASHLEY FAUGHT, M.D.,

PHILADELPHIA.

INSTRUCTOR IN MEDICINE, MEDICO-CHIRURGICAL COLLEGE.

For some years now it has been recognized that the blood pressure test is a useful and important guide to the state of health, and that in some cases when an individual may appear to be perfectly normal this test may give most reliable information. By it we may detect the signs of beginning change in the cardiovascular system and the kidneys, often before there is any distinct evidence of departure from normal, either in the physical signs, personal history, or uranalysis. In some cases we find that the apparent character of the pulse and a study of the superficial vessels fail to convey the proper impression of the state of the vascular system. That the arteries may not be what they appear, that the heart has become hypertrophied, or that a cerebral hemorrhage may at any time occur in spite of an outward appearance of perfect health.

The estimation of arterial tension or blood pressure by palpation is most unsatisfactory and at best unreliable. Even the most experienced clinician finds it very difficult if not impossible to estimate blood pressure accurately by palpation of the radial.

To quote from Wm. Russell (Arteriosclerosis, Hypertension, and Blood Pressure) we find the following very significant statement: "I must, however, again add a warning note to the effect that—feeling the radial pulse is not always a reliable guide as to what the blood pressure will read—I have two such cases under observation, the radial in neither being hard nor incompressible, and yet in both there is a steady reading of over 200 mm. of Hg."

Many times we may feel a soft and compressible radial where there exists marked sclerosis of the aorta and of the splanchnic area. Here only the blood pressure test reveals the true situation. In other instances the reading of the sphygmomanometer may explain the significance of an apparently simple headache, a mild attack of indigestion, transitory attacks of vertigo, in an apparently healthy individual, by demonstrating that these cases have suffered from a long continued toxemia, which has resulted in an unsuspected pathological change in the cerebral or other vessels.

It is now well recognized that such pathological changes may be present in the cardiovascular and renal systems, long before any suggestive symptoms are complained of by the individual, or if any complaint is made it is usually attributed to some trivial cause.

In the presence of such a beginning arteriosclerosis the blood pressure need not be greatly increased, an elevation of 30 to 40 mm. above that estimated as normal for the individual is significant and demands explanation. On the other hand a rise of even this amount should never be hastily assigned to arteriosclerosis and the risk therefore rejected without further study.

It is necessary to recognize in this connection the activity of other and less important factors, such as the alimentary hypertension, so well described by Russell, occurring in normal vessels due to errors in diet of either quantitative or qualitative origin and responding immediately to the correction of such errors together with stimulation of the eliminative functions. Of further interest particularly to the life insurance examiner are the so-called physiological variations, caused by age, sex, mental and physical excitement, fatigue, etc. These must all be taken into consideration in estimating the character and class of the risk.

Such variations need not confuse the examiner, as they all occur within a range sufficiently restricted to prevent them from obscuring the issue. The only one which needs special consideration is the age factor. To determine this, many tables have been suggested and devised in an effort to indicate the normal average systolic pressure for any given age. While these agree and can be applied, they are difficult to employ and hence are unsatisfactory, as their use entails reference to a table or the carrying of many figures constantly in mind.

To simplify this, the author suggested a formula based upon a large number of observations of his own and of others, which could be universally applied. The average obtained by this formula agrees closely with the experience of most observers, and since its first publication in 1910 (The Sphygmomanometer and its Practical Application, Pilling Co., Philadelphia) has been extensively quoted and is now employed by at least one insurance company (the Providence Life and Trust Company, Philadelphia). As originally suggested, it was as follows: "Consider the average normal systolic blood pressure in the male at age 20, to be 120 mm. of Hg.; for each year of life thereafter add one-half millimeter to 120." Later it seemed advisable to eliminate the fraction and this was done by changing the phraseology to read as follows: "Consider the normal average systolic blood pressure of a male age 20 to be 120 mm., then add one millimeter for every additional two years of life." In both the formulas the practical result is the same; thus at age 30 the normal average systolic blood pressure would be 125, age of 60, 140 mm., etc. It is sufficiently established to pass without question that the normal average blood pressure for women is approximately 10 mm. less than for men of the same age.

It is not sufficient to establish a normal average with which to rate the risk, but it is necessary to determine what variations above and below this shall be permitted to pass as normal. Unfortunately, with the evidence at hand, this question cannot be definitely answered, as existing statistics do not agree. So far as can be gathered from many published reports of the blood pressure test, a range of pressure of 35 mm. is deemed not to exceed normal. If we accept this, then a variation of 17 mm. above or below the normal average may be allowed; thus at age 20 any reading of over 137 or below 103 would call for explanation, while at age 60, the permissible variation should lie between 157 mm. and 123 mm.

In all determinations of blood pressure, the factor of the diameter of the cuff employed, and the type of instrument used in making the test, must be considered, assuming, of course, that the accuracy of the instrument itself is not disputed.

At the present time the accepted standard for the width of cuff is between 4¼ and 5 inches (11 to 13 cm.). A narrower cuff gives readings proportionately higher as the cuff is narrower.

Only those instruments that are in general use will be mentioned here. Among the mercury instruments employing the standard cuff, may be mentioned the Faught Standard, Cook's modification of the Riva Rocci, the Pilling Special, Kny Scherer, the Stanton and the Martin (in England) and among the aneroid the Faught Pocket Indicator. The Riva Rocci employs a narrow band and gives readings that may be from 15 to 50 mm. too high. Gaertner's tonometer gives readings which range from 10 to 20 mm. too low. The instrument of Potain is not graduated in mm. of Hg. at all, and therefore cannot be directly compared with the results obtained by other instruments. Potain in his work on blood pressure gives the normal for man, with his instrument, as 150 to 190 and in women 140 to 180 (Potain "La Pression artérielle de l'homme a l'état normal et pathologique," 1912).

As a routine measure, the left arm should be employed and bared to permit application of the cuff. Both applicant and operator should be in comfortable position, preferably sitting posture; nervous individuals should be assured of the harmlessness of the test, and should have their attention diverted from the proceeding. Time also should be allowed to permit the circulation to become quieted, after such exercise as rapid walking, stair climbing, etc.

When there is any doubt as to the accuracy of his finding, the operator should see the applicant upon a subsequent occasion, before making his report.

Bearing in mind the difficulty of early diagnosis in a case of chronic nephritis by a single uranalysis, particularly in individuals of apparently normal health, the importance of a blood pressure test will

be apparent, because it is recognized that we cannot have permanent kidney change without a constant elevation in blood pressure, and even in the presence of albumin or casts, we may question their true significance. Here a persistently high blood pressure, say 150 mm. or over in an individual below middle age will settle the question at least in regard to the risk. The presence of albumin and casts appearing scantily in the urine is not conclusive evidence of a diseased kidney, as these elements may come from a number of transitory and comparatively unimportant conditions. The blood pressure test will serve as a check, so that the applicant with a normal blood pressure which has occasionally shown albumin and casts will not immediately be rejected. In future such individuals may be given the benefit of the doubt and the company thereby relieved from committing a grave injustice. Besides the physiological variations already mentioned, the examiner employing the blood pressure test must endeavor to control as much as possible the condition surrounding the observation, otherwise the data as forwarded to the home office may be misleading. Every effort should be made to find out what is the actual blood pressure of the individual. More than one observation should be made when necessary in order to avoid reporting an abnormally high pressure, influenced temporarily by emotion, violent exercise, digestion, posture, or alcoholic stimulation.

A class of individuals demanding careful consideration by the insurance examiner is the overweights. This group does not show a favorable mortality in insurance statistics, particularly in the higher ages. Very often we may make our final decision in the moderate overweight on the blood pressure reading, accepting doubtful cases when it is normal, and declining if there is a tendency to high pressure.

The presence of a myocardial degeneration must always be considered, since the usual methods of examination rarely demonstrate the incipient cases of this affection. Difficulty will not be encountered, of course, when the disease has progressed sufficiently to affect the general health of the individual. In the early cases the systolic pressure need not be materially affected, so that recourse must be had to the functional tests of Graupner and Shapiro, and to the diastolic and pulse pressure, by which changes in normal reserve of the heart the strength and volume of its output can be estimated. Regarding the question of diastolic and pulse pressure there is but little definitely known, although several conditions are now recognized as affecting these readings which can be applied in health examinations and used to advantage in the work of the insurance examiner. Thus arteriosclerosis, on account of diminished elasticity of the blood vessels, will show an increased pulse pressure (over 35 mm. above the average) and the more extensive this change in the vessels the greater will the pulse pressure be. This condition may be demonstrated in a suspect even before the systolic pressure has permanently passed the normal high limit of health.

In incipient tuberculosis the only evidence of this condition besides possibly a slight rise of pulse rate and loss of weight will be a hypotension or subnormal blood pressure, usually accompanied by a diminished pulse pressure. In this connection Haven Emmerson (*Archives of Internal Medicine*, 1910), stated that hypotension is found in almost all cases of moderately advanced tuberculosis and that it has been found by many observers in early doubtful or suspected cases with or before physical signs of the disease of the lungs, and that it is considered by competent clinicians as a most useful sign. Cook also states that low blood pressure if persistently found in individuals or in families should put us on our guard for tuberculosis. In applicants of lightweight and a blood pressure of 100 or under and of poor family history the risk is bad.

Such mortality statistics as are available upon the relation of the blood pressure test to insured risks and their cause of death, bear witness to the importance of universal employment of the sphygmomanometer in life insurance work. The most important contribution to this study comes from the pen of J. W. Fisher of the Northwestern Mutual Life Insurance Co. (MEDICAL RECORD October 21, 1911) which covers an extensive study beginning in 1907. From a study of 2,668 insured taken from the actuary's tables giving blood pressure readings between 140 and 149 mm. Hg. he had 81.85 expected deaths, with 31 actual deaths, a percentage of 37.87 which was slightly below the normal death rate of the company on exposure of two years. He shows another table of mortality record of 527 insured persons with a blood pressure reading of 150 mm. Hg. and over, with 22.19 expected deaths and actual deaths were 12, which is about 35 per cent. in excess of the general average mortality of the company covering the same period and 18 per cent. higher than the general average mortality during the first five years of exposure covering the 20-year period of 1885 to 1905.

In table six he shows a mortality record of 782 persons, declined for insurance, in whom the blood pressure averaged 171.03 mm. Hg.; 21.61 deaths were expected with 32 actual deaths, a percentage of 155.27 or almost four times greater than the general average of the company. In another table he shows 366 cases rejected in which there were reported no other impairments than high blood pressure at the time the application was received at the Home Office. The expected deaths were 10.14, the actual deaths 14 or 138.17 per cent. of the table. Efforts were made to carefully follow these 366 cases in order to secure data as to the subsequent physical condition of these applicants. This is best shown in Table No. 10 of the article here referred to, which is copied in full.

TABLE 10. Subsequent Impairments Discovered or Developed; 366 Cases Rejected with High Pressure Only.

Arteriosclerosis Atheroma	Heart Murmur	Heart Hypertrophy	Albumin and Sugar	Albumin Only	Sugar Only	Albumin and Casts	Casts Only	Nervous Symptoms	Miscellaneous	Total	Expected	Actual	Per Cent.
6	9	4	2	14	5	33	13	6	10	101	3.061	4	130.66

These statistics are ample to show the great value of this test to Life Insurance Companies and also to show the almost absolute confidence which can be placed in a correctly made blood pressure record without even considering the other factors of the case.

The study of blood pressure in Life Insurance examinations has not yet met general acceptance by the Insurance Companies, although each month adds to the number requiring the test at the hands of their examiners. In some cases the blood pres-

sure tests is now employed in the examination of every applicant, irrespective of age, weight, past personal history, or amount of insurance applied for.

The chief drawback to the universal application of this test by Insurance Companies seems to be the difficulty presented by the examiners themselves who have been slow to see the advantage of the study and the use of the sphygmomanometer in their practice.

The recent rapid advances of sphygmomanometry will undoubtedly speedily overcome this objection so that in the near future this test will be incorporated in the printed form for the routine examination of every applicant for Life Insurance.

5231 Baltimore Avenue.

RACE RESISTANCE.

By HORACE GREELEY, M.D.,

BROOKLYN, N. Y.

A good deal has been written and said about family tendencies to disease; indeed the belief is popular that maladies are actually inherited, while little thought is given to those national weaknesses which every distinct people, as but a larger family, undoubtedly manifest. Of course, many of our modern nations are too conglomerate and recently formed to possess such peculiarities to a recognizable extent, yet many distinct races with which we are familiar may be shown to manifest either greater susceptibility or more resistance than the average to many common adverse conditions and maladies.

In the first place possibilities show that this may be either in the direction of mechanical wear and tear, the endurance of the organism as a machine, or the possession of those latent forces whose elaboration determines the result in diseases due to parasitic agencies. As illustrative of the first, a race may possess heavier and stronger bones than another and therefore be less subject to fractures; a skin more suited to the sunlight intensity of its locality; muscles better able, with the least strain, to overcome the physical resistance of the daily routine and stronger and more resistant teeth with all the possibilities of more efficient digestion following. Also many minor physical peculiarities which may render their possessors better able to compete under those natural conditions, as modified by civilization, that ever make for the survival of the fittest.

Negroes have proverbially heavy and tough bones, not only of the skull but throughout their framework, and comparatively seldom suffer from fractures. The same is true of their teeth which, while exposed to all adverse conditions, show considerably greater endurance than in most races. Among the white peoples the Teutons claim first advantage in these particulars, as also in muscular endurance, although this is really entirely dependent, apart from conditions of disease, upon the food supply. It seems that the color of the skin is only of concern in tropical regions where the demand for protection against the harmful effects upon all tissue activity and growth, similar to that exerted upon bacteria, of too strong a sunlight, requires a more impervious screen than the blond skin of the northern races, so that here the darker complexions have the advantage.

But it is with the second that our chief data are concerned, and corroborated as they are by all that we know of the principles of immunity make very interesting and important matter. The Jewish race has been known for at least five thousand years, and according to every conservative indication has remained a practically pure racial stock for that time, and during the last two thousand has been almost entirely a city dweller, usually amid the most crowded and unsanitary conditions, and yet today, in spite of a physique and appearance much under the par of the average population, its individuals are both longer lived and more resistant to all the infectious diseases than any other member of society. The last United States census gave the comparative number of deaths for the year among each one thousand of the living members of the principal races in this country as follows:

From All Causes.

Ages.	Native White.	Colored.	German.	Irish.	Scandinavian.	Italian.	Jews.
0-4	43	118.5	47.6	56.1	37	80.7	36.7
5-14	3.7	9.8	3.7	4.5	3.7	4.9	2
15-24	5	15.6	4.8	7.5	5.7	6.6	2.7
25-34	6.4	16.9	7.4	12.2	7.4	7.1	3.5
35-44	7.5	21	9.6	15	9	9.2	5
45-64	14.6	36.7	20.3	30.6	16.9	17.2	9.7
65-	65.9	108.6	81.8	96.9	67.3	66.1	40.9

From Consumption (Per 100,000 living).

0-15	27.5	246	26.6	42.2	32.4	50.7	11.4
15-44	162.5	587.4	205.9	428	233.7	149.9	67.4
45-64	131.8	518	207.5	340.9	267.3	157	103.9
65-	176.4	548.7	235.3	324.7	236.6	144.7	243.2

A glance at this table will show the immense difference between the mortality of the Jews and that of all other races. Even the native whites, who undoubtedly live under better hygienic conditions than any of the others, have a rate greater by fifty per cent. On that best basis of comparison their resistance to tuberculosis, the disease of all others to which the whole population may be regarded as universally and constantly exposed, they show a mortality of less than half that of the native whites except beyond the age of forty-five, before which period, as is apparent from the table, the greatest death rate exists among the more susceptible races. After this age the Jew's comparative mortality from this disease rapidly increases and, after sixty-five years, surpasses that of any other white race for the reason that they are so resistant to the malady that when they do succumb it is much later in life. It is known that the most congested districts of a city have the heaviest death rate, and to bring out the great resisting power of the Jews to the concentration of the health menacing factors of modern civilization here present it is interesting to note that in the most thickly populated sections of New York and of Chicago their death rate from tuberculosis is but 1.63 per thousand living, while the Gentiles under the same conditions suffer to the extent of from 4.95 to 5.65, fully five times as much. In Berlin this rate is: Jews 1, Gentiles 2.17; and in Vienna 1.31 as compared to 3.17.

The Irish, mainly descended from the ancient Celts that peopled all of northwestern Europe, have until recent years been an isolated and rural people and have not developed, because not stimulated to do so by circumstance, that resistance to transmissible disease that has been forced upon the city dweller. Previous to 1864, when the urbanization of the country practically began, Ireland had the lowest death rate from tuberculosis of any portion of Europe, but since this period the rate has steadily risen until at present it equals sixteen per cent. of all deaths as compared with England's rate of nine per cent. and the United States' of ten and a half. This shows how markedly resistance depends upon exposure, for while the disease undoubtedly was carried to Ireland by the original Celtic settlers their isolation and lack of intercommunication impeded its spread until recent years when, in addition to

changes due to the greater development of the cities and improved methods of travel, the frequent return of the emigrant, when sick, to his native heath increased the last, the opportunity to acquire, without the malady's greater prevalence having had time to raise the former, the resistance. In the United States, as will be seen from the foregoing table, the Irish lead all the white races in this sinister particular, even showing during the age period of fifteen to forty-five a comparative rate of more than double any other, besides being far in the lead in the table showing deaths from all causes.

In Italy changes similar to those in Ireland have occurred and the tuberculosis death rate in the more modernized and commercial provinces of the north has risen accordingly till it is at present double that of the southern more rural and backward portions. In the province of Milan, for instance, the rate is 3.20 per thousand living, while in that of Messina it is but 1.60. The best authorities state that fully one-third of all Italian emigrants under twenty-five years of age coming to the United States (although all are carefully inspected before entering this country and detected cases debarred) eventually die of tuberculosis, and it has been claimed that a fourth of those returning in the steerage are suffering from the disease.

In the United States, as may be seen from the first of the foregoing census tables, the Italian death rate, except for those under fifteen years of age, is about the same as that of the other foreign nationalities represented, not considering the Jews or the Irish; but in the second table covering the tuberculosis factor alone the Italians lead the remaining white races. This apparent special susceptibility of their children, while partly actual and due to habits of feeding induced by poverty and economy which render them more than others the prey of general disease, is in a great measure to be explained by the immense reduction in the mortality lists of the adults resulting from the return of the latter to their birthplace so soon as they become seriously ill, which is effected either on their own savings, through their government's representative, or with the assistance of a benevolent society. The resistance of the other Latin races is of a similar nature and degree.

The German death rate from all causes, in this country, is but little above that of the natives, more markedly so from tuberculosis—see tables—while in regard to the somewhat modern and increasingly prevalent cancer it leads in the returns, as follows:

Ages.	U. S. White.	U. S. Negro.	German.	Irish.	Italian.	Jews.
Under 65	155.3	159.1	238.6	232.2	119.4	92.3
Over 65	374.9	290 6	561.5	479.9	392.7	263.5

The rate from this cause is next greatest among the Irish, as of common Celtic stock; it is lower among their more distant relatives, the Italians, and among the negroes, the furthest removed and most distinct variety of the human family, the rate is only second to that of the Jew. These relative susceptibilities are maintained by European statistics, and all show this disease to be on an apparently world-wide increase.

The Scandinavians, another Celtic offshoot, seem to have tendencies similar to the Irish, modified again by special conditions, for they have almost as little resistance to tuberculosis, having second place in the table of European death rates from this disease at 1.92 per thousand as compared to that of the Irish at 2.16. In this country they also follow close upon them, as will be seen in the returns from the city of Minneapolis, largely settled by the former, where the death rate from this malady per thousand living is: Foreign born Scandinavians, 1.69; native born of such parents, 1.14; as compared to the rate of 0.69 of those born of American parents, thus clearly showing that this national trait is being modified as the Scandinavians become more and more lost in mongrel America. In regard to leprosy, it seems that among the Scandinavians alone of all the European races this disease is increasing, undoubtedly owing to some peculiarity of constitutional make-up by which the Scandinavians have lost their measure of European immunity to this old-time malady.

Coming to the Japanese, as representative of the second great leading variety of the species, the Mongolian, and first to the discussion of what has been delayed till now, the supposed varying ability of different races to perform a given work and maintain a body equilibrium on a minimum diet, as this is the people credited by some with the special ability to produce the most under such conditions. It is a well known and publicly recognized fact that anyone on a daily diet of beefsteak, changing to fish or fowl or even mutton, frequently experiences a digestive revolt which is popularly attributed to a poisonous quality peculiar to the particular article, or to a permanent idiosyncrasy of the consumer. The same is true as regards almost any unaccustomed food. The true reason of this, as determined by physiologists, is that each and every substance in use as food presents to our digestion particular and special poisons with which, if unprepared by previous and prolonged experience, it is unable to properly cope and the symptoms of intoxication naturally result. So it is that anyone, no matter how poisonous to him any particular food may at first seem, may be gradually accustomed to its use, as special antitoxins necessary to counteract its injurious influences are gradually elaborated.

The little Japanese has for generations lived principally upon a vegetable diet (rice) which, although it supplies almost a minimum of tissue building material, contains everything necessary for driving force and when once the digestion has been accustomed to handling it, it is easily made to fulfill all requirements—the over-supply of starch becoming tolerated even if not all used—so that if he is able to accomplish more on a unit of this simple food than a European, it is the result of a prolonged course of ancestral and individual digestive education which would have produced the same result in another. The Italian laborer on bread, maccaroni, and a little "lardo," is a similar example of accustomed diet which enables him to do the very heaviest work, although at a great cost to his machinery, which is worn away rapidly without the greater reparative assistance that a more liberal diet supplies. With this we will dismiss racial claims to superior endurance under privation and physical strain, for no test would be fair that did not allow to each the conditions to which it was accustomed, and when these are permitted all are alike. So, as the Japanese are passing under what are best denominated modern commercial conditions, their death rate is rising, especially from tuberculosis, which now causes almost twenty-five per cent. of all deaths as compared to a Caucasian average of fifteen per cent. and this, for reasons similar to those explaining the increase in Ireland. A like reasoning applies to all claims for racial longevity as dis-

tinct from special susceptibilities as detailed, for this depends principally upon the conditions of food and work affecting the individual, particularly as to whether they are his normal conditions.

In 1822 the death rate of the negroes in the United States equaled that of the whites, forty per thousand living; but since slavery's abolition and the changed conditions of life among them it has rapidly risen to seventy, nearly double, while that of the white population has almost halved. Today the negroes share with the Indians and others of recent savage ancestry a great susceptibility to infectious diseases, notably tuberculosis, and a glance at the census tables shows how enormously their death rates are ahead of all others included therein. In some ways, however, the negro has greater resistance than the white man, namely, to malaria and yellow fever (both caused by organisms of allied nature), to which special immunity is so lacking among the Caucasians that that of the negro becomes markedly impaired in the mulatto.

The so-called savage races present a great contrast by which we may judge of the resistance to the diseases of civilization already acquired by the white man. The American Indians when first seen were free from most of our infectious maladies, and therefore unarmed against their attack, and so great is their present susceptibility to, for instance tuberculosis, that fully seventy-five per cent. of all deaths among them, even those on Government rations and leading idle and even temperate lives in the so-called best climates, are caused thereby. Among the Sioux twenty-five die yearly out of every thousand living, while among the same number of Jews only 0.7, and the same number of Irish, 3.4 succumb. In passing it may be noted that most of those Indians who do not die of this malady yield to heart disease, a fact rather negativing suppositions that such is ever caused by overwork. So great is the Indians' lack of resistance that in certain French-Canadian settlements, where many have partial redman ancestry, tuberculosis is found to be as virulent almost as among the full-bloods. Again those Indians, as the Pueblos, and those in Mexico that have long resided in villages, show much greater resistance to the malady, having already been exposed long enough to the evils of the white man to have developed considerable immunity. Among all of the uncivilized, all over the world, passing under modern conditions imitated from or imposed by Europeans, together with greater exposure to cases of the disease, tuberculosis is so rapidly increasing that it, more than any other factor, promises to make this an entirely white man's world, a suggestion that, despite all the influence of civilized modern methods, natural selection is ever dominant, making for the survival of the fittest.

Most of the contagious diseases of childhood, with which civilization has been afflicted since time immemorial, have become so unable to effect harm that although nearly every child exposed contracts them a fatality is most rare. That this is due to immunity gradually acquired by transmission of an ever-increasing resistance from parent to child is borne out by the disastrous effects of these same maladies among savage nations, as the Eskimos, Hawaiians, Maoris, the Hill Tribes of India, or the inhabitants of Polynesia where an epidemic of measles, whooping-cough, or influenza, will destroy in a few weeks half the population of a village. In 1875 an epidemic of measles in the Fiji Islands carried off within four months, fifteen thousand out of a population of forty thousand. In South America and Mexico and the West Indies soon after the discovery by Columbus, the major portion of the native Indians were destroyed by such diseases, and today their remaining representatives, and even those having a detectable Indian strain, are particularly susceptible to them. Our old Biblical enemy, leprosy, evidently with our ancestors for ages, and now diminishing to almost extinction among all white races except the Scandinavian, has found a more suitable soil with these unsophisticated peoples and seems to be gradually increasing in prevalence among them.

Thus the degree of resistance any race presents may be shown to be directly proportional to what may be called its natural education to the requirements of the surroundings, and it is a matter of common knowledge in the tropics, and even in the cities of the temperate zone, that newcomers are more apt than natives to fall victims to any prevailing disorder, so showing that residence for a few years even may increase individual resistance to a recognizable degree. So it is easy to understand how constant exposure of a particular race to a particular disease produces constantly increasing immunity, as those who in the beginning possess it to the greatest extent outlive the others, transmit to the greatest number of offspring some of their protection, which in its turn is exposed to similar trial, possible increase, partial transmission and restimulation, and this is repeated progressively down the ages till quite a degree of general immunity to the malady is attained. By exposure is meant an equal opportunity to acquire the disease with others who succumb. The individual so exposed either already possesses sufficient special body forces inherited from some ancestor who suffered for him to entirely prevent infection, or, after a more or less prolonged illness develops the required weapons, destroys the invader and ever permanently retains some of his new power, even transmitting it to his descendants.

So it has been with the Jews, whose present representatives are reaping a reward for the long-suffering from their ancestors and who now enjoy a greater general vitality than any other, at least under the conditions of the modern world.

140 Clinton St.

EXOPHTHALMIC GOITER.*

By AUGUSTUS A. ESHNER, M.D.,

PHILADELPHIA.

Long considered a blood-dyscrasia or a circulatory disorder or an affection of the nervous system, the complex of symptoms known as exophthalmic goiter has in recent times been attributed to excessive functional activity on the part of the thyroid gland, resulting in varied derangements in function through the agency of a supposititious internal secretion. In support of this view is the hypertrophy of the thyroid gland found upon surgical removal or after death, the development of symptoms of the disease or their intensification on administration of preparations of the thyroid gland to healthy persons or to individuals suffering from exophthalmic goiter respectively and the subsidence of the symptoms following ablation or atrophy of the gland. What excites the hyperplasia and the overaction is up to the present time undetermined,

*Read before the Southeast Branch of the Philadelphia County Medical Society, May 17, 1912.

and it may ever remain so. Our knowledge of internal secretions is as yet but fragmentary and incomplete and the physiologist, in conjunction with the internist and the clinical surgeon, has here a fertile field for observation and experiment.

Exophthalmic goiter is a disease of adult life, the average age at which it occurs being between thirty and thirty-five years, although childhood and youth, as well as old age, do not altogether escape. The affection is four or five times more common in females than in males. At times it appears to be superinduced by physical stress or mental strain. In some instances an hereditary or familial tendency to the disease is observed.

The onset of exophthalmic goiter is usually insidious and its evolution gradual. Occasionally it develops abruptly and at times it pursues a fulminant course, terminating fatally within a period of a few weeks. Generally it lasts for months or even years, with remissions and exacerbations. It is an open question in my own mind whether perfect recovery ever takes place. The prognosis is least favorable in cases occurring in early life. The disease may pass over into myxedema from secondary exhaustion or atrophy of the thyroid gland.

While the more obtrusive phenomena of exophthalmic goiter, namely the enlargement of the thyroid gland and the protrusion of the eyes are those generally that first attract attention, careful investigation will commonly disclose that the patient has for some time been irritable, tremulous, restless, perhaps conscious of palpitation of the heart and oppression in breathing, especially on exertion or emotional disturbance, of a sense of flushing or of heat, with or without increased perspiration. As most of the sufferers are women and as some of the phenomena mentioned occur in conjunction with the menstrual function and with pregnancy, their significance may for a time escape recognition. Moreover, transitory fullness of the thyroid gland sometimes occurs under the same conditions, while menstrual derangements are not uncommon in the course of exophthalmic goiter. Difficulty in breathing and in swallowing and choking sensations, with a feeling of constriction of the throat, perhaps with actual increase in the size of the neck, will eventually attract attention to the enlargement of the thyroid gland, in which one lobe or both lobes and even also the isthmus may take part. At the same time, or possibly earlier, or soon afterward, the eyes present their characteristic staring appearance, with retraction of the lids, infrequency of winking and protrusion and restricted mobility of the globes. These changes also may be symmetrical or they may preponderate on one side. On examination, the pulse will be found rapid, sometimes in an extreme degree, the heart overacting and perhaps arrhythmic, and a characteristic, roaring bruit often is audible over the full, soft, and sometimes pulsating thyroid gland, while the blood-pressure is subnormal. Cardiac murmurs are not necessarily present. Dermographism is demonstrable. The patient presents an agitated appearance, with fine tremor of the fingers and of other parts of the body, while the face is likely to be flushed and the skin moist. There is complaint of a sense of weakness and sleep often is disturbed. The bowels may be loose, the stools containing an excess of mucus or membrane, and the urine may contain sugar and at times albumin. Changes in the skin, pigmentary and otherwise, have been noted in some cases and profound mental disturbances in others. Hemorrhages may take place from various mucous surfaces or into the skin.

The treatment of exophthalmic goiter has been most varied, partly in accordance with the prevailing conception of its pathology, partly on an empirical basis. It comprises the use of drugs, such as arsenic and iron, digitalis and strophanthus, aconite and veratrum viride, quinine and strychnine, ergot, belladonna, nitroglycerin; the administration of preparations of the thymus and even of the thyroid gland; the blood serum and milk of thyroidectomized animals; the serum of animals treated with hypertrophied thyroid gland; the application of electricity in its various modalities; the employment of the rest-treatment, and finally surgical procedures, such as resection of the cervical sympathetic, cutting off of the arterial supply of the thyroid gland, and partial ablation of the gland itself. Preparations or derivatives of the adrenal gland or of the posterior portion of the hypophysis might be expected to act as physiological antagonists to the excessive thyroid secretion, but, unfortunately, they appear to be wanting in therapeutic efficacy in the case of exophthalmic goiter. In my own experience I have seen the best results from the employment of strophanthus, with or without sedatives, such as bromides, and with rest treatment, and, these failing, from resection of the thyroid gland.

1019 Spruce Street.

A CASE OF HENOCH'S PURPURA TREATED WITH HUMAN BLOOD SERUM; RECOVERY.*†

By S. J. WILSON, M.D.,

Brooklyn, N. Y.

House Physician, Jewish Hospital.

The successful therapeutic application of blood serum in the treatment of hemorrhages from various causes has been reported by many investigators in the recent literature. Thus Weil treated eleven cases and Wirth twenty cases of hemorrhage in this manner with gratifying results. To these may be added the following case of Henoch's purpura:

X., a boy, nine years old, born in the United States, and attending school, was admitted to the hospital February 2, 1912. Family history: Parents are living and well. No history of rheumatism or hemophilia on maternal or paternal sides. Previous history: Had measles, mumps, and diphtheria without complications. Has had three or four attacks of tonsilitis during the winter months of the last two years. Has had a few very mild attacks of epistaxis, preceded by a slight headache, the epistaxis stopping promptly and spontaneously. Present illness: Three days before admission to the hospital he began to complain of pain in his legs. His mother subsequently noticed a red eruption over the tibia. The following day he complained of abdominal pain and an ice bag was applied to the abdomen. On the day before he was admitted to the hospital an eruption of the same character as the one on the tibia was noticed on the abdomen, where the ice bag had been applied. He also vomited several times, the vomitus containing food remnants and some blood. During these three days he had fever and passed less urine than usually.

Physical examination: The patient is well devel-

*Read at a meeting of the Williamsburg Medical Society, March 11, 1912.

†From the medical service of Dr. Leon Louria at the Jewish Hospital of Brooklyn.

oped, but anemic. He is drowsy and answers questions correctly, though very slowly. He tosses from side to side and seems to be quite exhausted, with occasional sighing respiration. Neck: Tenderness on pressure over the suboccipital region and cervical vertebræ. Very foul odor from the mouth, and teeth are in a bad condition. Tonsils are enlarged, but not inflamed, and in the center of each tonsil there is a grayish, punched out, ulcerated area with ragged edges and angry-looking base. Edges are slightly inflamed. Glands are not enlarged. Chest: No irregularities. Lungs: Negative. Heart: Regular in rhythm and force. No murmurs heard. Pulse rapid, 120 per minute, of a very small volume, and easily compressible. Abdomen: No distention. Slight tenderness on palpation over the whole abdomen. Liver not palpable. Spleen, lower border palpable, not tender. Skin: A large ecchymotic spot over the upper end of each auricle. Over both cheeks and over the chin there are several discrete ecchymotic spots, slightly raised above the level of the skin, and somewhat indurated. These are all tender. Some are yellow while others are of a red or dark red color. Over the dorsal surface of the left arm, around the elbow and the left index finger, and also over the inner side of the right elbow are seen similar areas. Hemorrhagic spots of varying sizes and shapes are also seen over the spine of the left scapula, over the inner aspect of both thighs, and over the anterior aspect of both tibiæ. Over the abdomen, in the umbilical region, the skin has a purplish discoloration, with many bright red spots in it. This is the area to which the ice bag has been applied. The hemorrhagic spots do not disappear on pressure and are not raised above the skin. In some places these spots are discrete, while in others they are confluent. There are also two large purplish areas which are slightly raised over the inner malleoli. Urine: 1012, acid, heavy trace of albumin and a few leucocytes. Blood: Red blood cells, 4,500,000; hemoglobin, 70 per cent.; leucocytes, 19,600, with 80 per cent. polymorphonuclears. Coagulation time, 5 to 6½ minutes. Throat culture: Predominating organisms, *Streptococcus longus* and *Staphylococcus citreus*. Temperature: 100.8°; pulse, 120; respirations, 28. Clinical history: On the day of admission the patient vomited a greenish fluid containing no blood. The patient received 2,000 units of diphtheria antitoxin and in the evening was more restless, the sighing respirations having markedly increased. The first day after admission the patient was very drowsy. His peripheral circulation was very poor. His lips were cyanotic and had a few dark blue blotches. A few new rose-colored spots appeared over the sacrum. Marked tenderness was observed about the knee and ankle joints, where subcutaneous bluish discolorations could be seen. Pain on motion in these joints was marked and there was evidence of effusion in the left knee joint. The patient vomited a green fluid with bright red blood in it. Temperature was 102°, pulse was very small and rapid, and the extremities were cold. No change in the former skin eruptions or in the ecchymotic areas. The patient's condition believed to be hopeless. The following day his condition was not improved and serum therapy was decided upon. Venesection was performed on the father and fifteen ounces of blood were obtained. The edges of the two angry-looking areas over the tonsils became smoother, but the base was still necrotic. Slight cervical glandular enlargements were present. Heart: A faint systolic murmur was heard over the apex and was not transmitted. New deep rose-colored spots, irregular in outline and of different sizes, ranging from that of a pinhead to the size of a twenty-five-cent piece, were present over the fore and upper and outer parts of the thighs and over the sacrum. These spots were not raised above the skin. Over the inner aspect of the knees and ankles, where the bluish discolorations were previously visible, there are now seen bright, red, large, irregular blotches. These were raised in some places and had a darker hue in the center. The patient again vomited eight ounces of greenish fluid, with no blood in it. He was alternately delirious and drowsy. The first injection of 45 cubic centimeters of serum obtained from the father's blood was given subcutaneously. Blood culture: Sterile. The feces contained blood, which was evident macroscopically as well as microscopically. On the third day after admission the hemorrhagic spots over the forearms were slightly raised. Over the knees and ankles the red blotches seemed to have become smaller, fading at the periphery and becoming darker and scaly in the center. The gums were bleeding, and the two spots over the tonsils were now of a brownish red color and had regular edges. A new small ulceration was seen on the inner aspect of the right cheek, while on the inner aspect of the left cheek an ulceration with a grayish base about the size of a dime was noted. The elbows, wrists, knees, and ankles were painful on motion, but an effusion was manifest only at the left knee. A second injection of 45 cubic centimeters of father's serum was given subcutaneously. Pulse, 150. The patient vomited six ounces of brown fluid containing blood. On the fourth day after admission the pulse had fallen to 120 and the patient felt chilly at times. The extremities were warm and there was no cyanosis of the finger or toe nails. Heart: Systolic murmur at apex, very distinct but not transmitted. The patient did not vomit and was more comfortable. The hemorrhagic spots and blotches were no longer raised and seemed to be fading. A third injection of 72 cubic centimeters of serum from the father's blood was given subcutaneously.

On the fifth day after admission the purplish spots over the abdomen were disappearing, and the other eruptive areas were fading. There were no new eruptions over upper extremities, but a few new hemorrhagic spots were noted over the anterior aspect of the knees. The two areas over the tonsils looked healthy, appearing as two small punched-out depressions. The ulcerated area over inner aspect of left cheek did not improve. Feces did not contain blood macroscopically, but gave a positive benzidin test. The spleen was palpable. On the sixth day after admission a second venesection was performed on the father and about twelve ounces of blood were obtained. On this day the patient vomited a clear blood-colored fluid containing no clots. The left knee was still very tender and swollen, the patella was floating, and the lateral spaces were bulging, the circumference of the knee being 29 centimeters, while that of the right knee was only 27 centimeteres. The hemorrhagic spots all over the body had small pinhead-sized bloody scabs in the center and a faint red margin. The large red blotches were scaling. No new eruptions appeared, the temperature was declining, and the pulse was 104, the lowest rate since admission. A fourth injection of 90 cubic centi-

meters of serum from father's blood was given subcutaneously. On the same day the eye grounds were examined by Dr. Beery, who reported as follows: Left fundus: Many small fresh retinal hemorrhages. Right fundus: A few fresh hemorrhages. On the seventh day after admission the patient was comfortable. There were no sighing respirations. The hemorrhagic spots were fading and scaling. Joint tenderness was still present. The ulcer on the inner aspect of the cheek was deeper and had undermined, irregular edges. A fifth injection of 90 cubic centimeters of father's serum was given subcutaneously. On the eighth day after admission cultures from the ulcer of the cheek showed many staphylococci and some bacilli. On the tenth day after admission the temperature had been normal for the past two days, and pulse ranged from 84 to 106. The patient was comfortable and very lively. The joint tenderness had all disappeared. The left knee still measured 28.5 centimeters, and the patella was floating, but motion was not so painful. Feces were negative as to blood, even with the benzidin reaction. The eruptions were fading rapidly. The dark, bloody scab over the auricles and over the outer side of knees and elbows were still present, but drying up. The spleen was still palpable. A faint systolic murmur was present at the apex, but was not transmitted. The ulcers over inner aspect of cheeks were rapidly healing up.

On the fifteenth day after admission there were no elevation of temperature and no new eruptions, and the color of the old eruptions was becoming yellow and pale pink. Feces: Negative as to blood. Eyes: No fresh hemorrhages, though the outlines of the old hemorrhages were still present. Spleen: Barely palpable. Effusion of left knee gone and circumference now measured 27 centimeters, same as the right. On the nineteenth day after admission the spleen was not palpable. The heart murmur was very faint and was heard only on exertion. Blood count showed 3,100,000 red blood cells, 50 per cent. hemoglobin, 5,200 white blood cells, with 69 per cent. polymorphonuclears. From now on the patient was gradually placed on a regular diet and was allowed to walk about. He gained in weight and strength rapidly. He was discharged March 9, 1912, in perfect health, with the following blood count: Red blood cells, 4,800,000; hemoglobin, 75 per cent.; white blood cells, 8,800, with 60 per cent. polymorphonuclears. As the accompanying chart shows, the pulse came down 48 hours after the injection, while the temperature began to come down 72 hours after the same injection. The temperature and the pulse were highest on the day that the largest number of hemorrhages occurred.

Before considering the efficacy of the serum in this case we must endeavor to explain the etiology of this condition. The two ulcerated ragged areas on the tonsils at the onset of the disease, and later the two angry-looking ulcers on the inner aspect of the cheeks led us to believe that the condition was due to toxins in the circulation absorbed from these ulcerated areas. The damage by the toxins was done, not to the blood, but to the wall of the blood vessel, for the coagulation time was not altered. These toxins Flexner calls endotheliolysins, and their action can be explained, according to the Ehrlich side chain theory, as follows: The endothelial cells of the walls of the capillaries have normally a certain protecting substance that does not allow their disintegration and the escape of blood between them. The toxins unite with this substance, and thus disintegration of the endothelial cells and escape of blood takes place. The fresh human serum injected supplies a hyperabundance of this protecting substance and the bleeding stops, so that the disintegration of the endothelial cells and the extravasation of blood ceases. The serum can be administered in three different ways: Intravenously, subcutaneously, or locally. The subcutaneous is the most convenient and is given in the same manner as diphtheria antitoxin. The local method can be used in conjunction with either of the other two methods by applying to the bleeding point gauze soaked in the serum. The subcutaneous dose advised by many is from 20 to 40 cubic centimeters each day, but 45 to 90 cubic centimeters can be given daily. By the intravenous method the dose should be smaller, about 20 cubic centimeters at a time. It is best to use the serum from the blood of a near relative, but any human serum is satisfactory, and even horse serum may give an almost identical result. Venesection is employed for obtaining the serum, which can be used even when it is fourteen to sixteen days old. Direct transfusion will at once suggest itself to many as a better and more efficient method of treatment, but the operation for transfusion itself and the danger of infecting the donor in cases where the purpura is due to an infecting organism, make this method inconvenient and dangerous.

I desire to express my thanks to Drs. Leon Louria and William Lintz for suggesting this method of treatment, and for assisting me in preparing the report of this case.

Surgery of Cancer of the Cardia.—A. Parcelier points out the feasibility of radical intervention in cancer confined to the cardiac end of the stomach. It appears to have been well established that such tumors cannot be extirpated solely by the abdominal route. The abdominothoracic route, such as has been described by Janeway and Green, is the best, although for exploratory purposes alone laparotomy is sufficient. The thoracic stage in the operation must be conducted under differential pressure or with the aid of tracheal insufflation anesthesia. The latter procedure enables one to secure immobility of the lung, which facilitates the various manipulations. An important point in this operation is that of drainage. The line of sutures closing up the opening in the stomach should be within the abdominal cavity. The diaphragmatic wound should be closed and the esophagus carefully fixed to the diaphragm. Drainage should be effected through the peritoneal cavity.—*Archives Provinciales de Chirurgie.*

Alopecia Universalis with Dystrophy of the Nails.—J. H. Sequeira reports the case of a sturdy boy, aged 4, whose mother stated that he was born with the usual amount of hair, but that when he was six weeks old the hair of the scalp, eyebrows, and the eyelashes came out, and since then the boy had been completely bald. Both parents were in good health and there was no history or evidence of syphilis. There were two other children; one has had rheumatism and the other has been quite healthy. There was no history of any similar affection of the hair and nails in any member of the family. There have been no miscarriages, and the patient was born at full term. The child presented the usual features of complete alopecia. All the nails of both hands and feet were narrow, laterally curved, and elevated from their beds at the distal extremities. Under the free margins there was a brownish-black horny mass. There were no other abnormalities. Thyroideum siccum in tablet form had been given, but, so far, without improvement.—*Proceedings of the Royal Society of Medicine.*

MEDICAL RECORD.

A Weekly Journal of Medicine and Surgery.

THOMAS L. STEDMAN, A.M., M.D., EDITOR.

PUBLISHERS

WM. WOOD & CO., 51 FIFTH AVENUE.

See fourth page following reading matter for Rates of Subscription and Information for Contributors and Subscribers.

New York, August 10, 1912.

DIPHTHERIA ENDOTOXIN IN THE TREATMENT OF DIPHTHERIA INFECTION.

THE success attending the employment of antitoxin in the treatment of diphtheria has apparently diverted attention from any other factor in the pathogenesis of this disease than the soluble toxins of the diphtheria bacillus. The possible rôle of the insoluble toxins of this microorganism has been barely suspected. On July 11, 1903, E. Rist reported before the Societé de Biologie that the bodies of the diphtheria bacilli, freed from their soluble toxins, still possess toxic properties. By inoculating guinea-pigs intraperitoneally with diphtheria vaccines, thus utilizing the endotoxins of the Klebs-Loeffler bacillus, he was able to produce paralysis similar to the clinical forms. These experiments apparently explained why the early administration of diphtheria antitoxin had little or no effect in preventing subsequent paralyses, for, according to Rist, these are the result of the action of the endotoxins upon the nerve cells, the soluble toxins alone being neutralized by the diphtheria antitoxin.

These investigations in spite of their far-reaching importance attracted very little attention. No efforts were made either to confirm or to disprove the pathogenic significance of the insoluble toxins of the diphtheria bacillus. A most promising avenue of research was opened up; nevertheless, no one sought to determine whether it might not be possible to produce an active or passive immunity by means of inoculations with diphtheria endotoxins. From another direction, however, this subject has lately been approached. In an effort to cause the disappearance of diphtheria bacilli from the throats of diphtheria carriers or of chronic cases of diphtheria, the thought suggested itself to R. T. Hewlett and A. T. Nankivell (*Lancet*, July 20, 1912) of inoculating these individuals with the endotoxin of the diphtheria bacillus. The endotoxin was prepared by growing the virulent organism on serum or blood-agar in Roux bottles, collecting the growth, washing it two or three times in sterile physiological salt solution by centrifuging so as to remove any adherent toxin, grinding the bacterial mass by the Macfadyen method in the presence of intense cold, and filtration of the ground mass through a Berkefeld filter. The filtrate contains the endotoxin and is standardized by the addition of sterile salt solution so as to contain two to five milligrams of the endotoxin per cubic centimeter. It was found by Hewlett that the endotoxin is harmless to guinea pigs and that to a considerable extent it protected these animals against injections of living diphtheria bacilli.

It is pointed out that ordinary cases of faucial diphtheria are not, as a rule, free from infection for four or five weeks after the onset of the attack. In addition to receiving the usual injection of antitoxin, five individuals suffering from tonsillar diphtheria of moderate severity were inoculated on the following day with 2 milligrams of the endotoxin. In four of these cases the diphtheria bacilli disappeared from the throat within two weeks after the inoculation with endotoxin. In another series of cases the patients had harbored diphtheria bacilli for many weeks or months. As the result of one or more injections with the endotoxin, all of the cases showed definite improvement, the diphtheria bacilli either disappearing entirely or greatly diminishing in numbers.

The treatment of the diphtheria carrier is an important problem in preventive medicine. The use of antiseptic sprays and gargles, and even of sprays of living microorganisms, such as the *Staphylococcus aureus*, may serve to reach the diphtheria bacilli exposed on the surface of the fauces, but are not effective in reaching the organisms hidden in the crypts of the tonsils or in the accessory sinuses of the nose. The endotoxin method, which may be compared with the vaccine treatment of other persistent infections, apparently serves to combat these hidden foci better than any other measure yet proposed. It has been found that the best results followed an initial dose of 2 milligrams of the endotoxin; if necessary, a dose of 5 milligrams is given a week or ten days later, and even repeated after a similar interval if the culture from the throat is still positive.

ARTIFICIAL VERSUS NATURAL SELECTION.

EUGENICS is very much to the front in these days. There are those, especially in Great Britain, who claim that the salvation of the civilized races hinges on the practical recognition of the laws of heredity. Many great authorities state that in all industrial countries degeneracy is on the increase. Of all countries Great Britain is the most industrial and therefore it is there that degeneracy is most marked. Up to the present time industry on a large scale has meant the crowding together of masses of people in inadequate areas. Of the population of Great Britain nearly three-quarters are herded together in cities, and this under existing conditions involves the dwarfing of the people physically and to some extent mentally. The trend of all modern nations is toward commercialism and thus it would appear toward degeneracy. Even in this far stretching land the population is surely drifting in the direction of the cities. The problem then is successfully to combat the forces leading to the production of an inferior stock and the eugenists affirm that this can be effectively done only by artificial selection.

Not all, however, of those competent to speak are unreservedly on the side of eugenics. I. Harris, writing in the *Liverpool Medico-Chirurgical Journal*, proclaims himself an opponent of artificial selection and explains his attitude. In his opinion, eugenics is a "quack remedy" recommended as an infallible cure for the rapid degeneration of the European races. He points out that animal and human breeding are very different matters. In the artificial selection of animals a given quality for a given purpose is sought. What then is the standard that shall guide the followers of Mendel in human artificial selection? Shall physical strength or the purely mental attributes be the criterions of human excellence? Darwinism, or natural selection, effects that the one organism in possession of a superior faculty in its struggle for existence shall survive. Artificial selection, on the other hand, presupposes *a priori* and quite gratuitously the desirability of a certain faculty which it attempts to perpetuate. In Darwinism variability is the main factor in progress. Thus artificial selection can concern itself only with the intensification of a specific faculty, but evolution means progress in manifold directions. It should also be carefully noted that genius often makes its appearance as an abnormality difficult to distinguish from the degenate, such as the eugenist would reject. The families of the genius and the great are frequently tainted by insanity, cancer, gout, and tuberculosis, but would the world have been the better without them? Variety is the spice of life, and this axiom applies to the breeding of men and women. We do not want, Harris says, a race of magnificent animals of a like type. It is not, he contends, artificial selection which is needed, but a cessation of the methods now being taken to preserve the unfit. Left to themselves, the unfit will disappear without the aid of eugenics. At any rate, it may be confidently stated that enough is not yet known concerning the working of the principles of eugenics to warrant the optimistic assertions of its too enthusiastic followers. The cold searchlight of reason must be turned on the matter for some time to come ere the teachings of Mendel can be put into practice so far as the human race is concerned; all of which does not mean that society should permit criminals and degenerates to propagate and perpetuate their kind without heed or restraint.

FACTORS OF SAFETY.

After the recent Harvard-Yale boat races it was the three losing crews which evidenced the greatest exhaustion; in one instance the men were so "all in" that they had to be lifted from their boat. One might have expected the reverse—that the victors, having taken the extra exertion necessary to win, had worked more nearly to the limit of their powers and had been more used up in consequence. But this would not be taking into account the stimulus of victory on the one hand, and the depressing effects of defeat on the other. Spitzka has estimated that the mortality from wounds in a defeated army is in proportion to that of the victors as four to three or even as three to two. The explanation of such phenomena must be that success reacts upon and brings into greater play one's factors of safety, while failure has the reverse effect to depress these factors. The term was borrowed from the mechanical engineer by S. J. Meltzer when he addressed the Harvey Society on "The Factors of Safety in the Animal Structure and the Animal Economy."

These factors are the body's reserve forces, which avail in times of undue stress and strain; they keep the living organism in fairly normal condition despite many untoward environmental agencies. By the term "factor of safety" the mechanical engineer designates the margin of safety required in constructing engines, bridges, houses, and the like. If, for instance, the tensile strength of boiler steel plates and stay bolts is 60,000 pounds to the square inch, the actual stress which is allowed for the work of the boiler should not be more than 10,000 pounds per square inch for the plate and not more than 6,000 pounds per square inch for the stay bolts—which means that the stress to which the plates may be exposed in the boiler should be only one-sixth or one-tenth the actual strength of the steel. The factors of safety here are six for the plate and ten for the bolts. Thus mechanical structures are expected to withstand not only the stresses of reasonably expected maximum loads, but also those of six or seven times such loads.

The factor of safety is founded upon finite human ignorance of what might happen, and a commendable desire to provide against such contingencies. The human machine is of complexity quite infinite; and it is much more difficult to foretell the possible strain, the stress of environment, accidents, the attacks of pathogenic organisms, and the myriad other agencies hurtful to the human machine, many of which we are powerless to prevent, concerning many of which we are in ignorance—ignorance, however, which modern medicine is more and more dissipating.

In the human machine the potential energy in many organs—the heart, the liver, the kidneys—far exceeds the needs of normal, every-day existence. In the case of many functions the necessary mechanisms are doubled and even trebled. One organ is often assisted as to its functions by other organs. And living tissue is provided with one factor of safety that is peculiar to sentient existence and which does not obtain with any other kind of existence—the mechanism of self-repair.

Thus do factors of safety provide the integrity of life and the perpetuation of the species; and they have an important bearing on the process of natural selection. Thus becomes comprehensible the saying, "The half of his strength he put not forth"; for every man has in him a latent potentiality. Factors of safety explain also how under stress of fright or under the inspiration of great affection or other tremendous emotion, things have been accomplished of which the doer would never have believed himself capable. And to medical science is it especially known that many men and women complete the span allotted them, despite the many diseases, accidents, and other untoward circumstances to which human life is constantly sub-

ject. And in arousing a patient's latent capabilities the physician will oftentimes make wise suggestion an adjuvant to cure.

Infection Following Tonsillotomy.

It has been recognized for a long time that the tonsils may serve as a portal of entry by which many types of pathogenic microorganisms gain access to the circulation. Little attention, however, has been paid to the dangers of serious infection that may occur through the wound left after removal of the tonsils, whether by tonsillotomy or by enucleation of the tonsils. H. Koplik in the *American Journal of the Medical Sciences*, July, 1912, calls attention to this possibility, and in addition to a few instances that he has observed, cites a number of cases that have been reported in the literature. He refers to three forms of infection that may follow removal of the tonsils, or of adenoids, or of both structures: (1) Following the operation the patient may appear to be doing well, but on the second or third day the temperature begins to rise and continues to run an obscure course for about two weeks. The patient recovers without any ill effects on the heart, and with no rheumatic manifestation. (2) In another set of cases, following the removal of the tonsils, there occurs a moderate rise of temperature which may continue for a number of weeks. In the meantime cardiac murmurs appear, and the patient may even succumb to a malignant form of septic endocarditis. (3) In the third class of cases the infection is a severe one, and causes destructive blood changes with such evidences of sepsis as the presence of ecchymotic and petechial areas on the skin, and of patches of bronchopneumonia, together with the occurrence of profuse hemorrhages from the bowel. An interesting case of this type is reported by the author. It was one of profound sepsis in a boy aged five years following the operation of tonsillectomy and adenectomy performed amid the ideal hygienic surroundings of an institution. There occurred seven hemorrhages into the skin and conjunctive and from the mucous membranes. This hemorrhagic form of sepsis was also accompanied by a rise of temperature and the development of an endocarditis. Transfusion was performed as a last resort and succeeded in saving the life of the patient.

A New Method of Applying Carbon Dioxide Snow.

Carbon dioxide snow as a cauterizing agent has in many respects revolutionized the treatment of various skin affections. The application of this agent is distinguished by its simplicity as well as by its excellent cosmetic effects, a valuable desideratum when disfiguring scars on the face or on other exposed parts of the body are concerned. W. Knowsley Sibley writes in the *Practitioner* for July, 1912, concerning a new method of applying this remedy. He has found that carbon dioxide in solid form will mix with and form a solution in ether or in absolute alcohol. This mixture is what may be considered for all therapeutic purposes a preparation of liquid air, but without its unstable character and dangerously low temperature. It can be easily painted on the skin as a stimulating or cauterizing agent, according to the length of time the reagent is applied. However, only more or less superficial lesions can be dealt with by this method, as it is not possible to exert any great amount of pressure, the degree of which is so important in treating deeply seated lesions with solid carbon dioxide. Still, if a deeper action be required a well compressed lump of solid carbon dioxide may be soaked in ether or absolute alcohol and then applied by a pair of forceps to the skin. According to Sibley, in the treatment of superficial conditions the solution of carbon dioxide in ether is superior by far to the methods formerly adopted because the part under treatment is exposed to view the whole time, and the area dealt with, however irregular in outline, can be so easily defined. Especially is the method satisfactory for application to small or large patches of lupus vulgaris.

Pathological Portraits.

Diagnosis of unsuspected disease in a person long dead through portraits is no new thing, but on account of the rapid progress of medical knowledge each generation may read new meanings into an old likeness. There is no doubt that much of the fanciful is present in these diagnoses. It has been stated seriously that Beethoven had the facial configuration of a heredosyphilitic, and this possibility has been invoked to explain his deafness and other individualities. Poe's portrait has been asserted to show evidences of hydrocephalus, despite the fact that the survival of sufferers from this affection beyond twenty years or so has been pronounced impossible. Naturally Poe's well-marked degeneracy is readily explained on the basis of such a defect. At a recent meeting of the K. K. Gesellschaft der Aerzte of Vienna (*Münchener medizinische Wochenschrift*, June 25) Kronfeld discussed the pathological portrait and bust. He states that these are extremely numerous, but considers the subject in broad lines only, referring the reader to standard works like those of Hollander. Artists have of course often been called upon to paint those actually deformed, ill, or disabled—blind people for example. With this sort of pathological portraiture we have no concern. The representation of affections which no longer exist among us would of course possess high value, but few such are known to exist. The absence of teeth, including false dentures, is an example of this sort which would hardly be possible to-day in the class of people who have portraits painted. One of the commonest pathological portraits is the adenoid facies, the nature of which must have been quite unsurmised. It is possible that women apparently gravid who sometimes appear in portraits without any apparent reason were painted from models having enteroptosis. Style and fashion among painters cannot be omitted from consideration in this connection, as Botticelli, Dürer, and others are said to have had a tendency to paint their women with peculiar configuration of the abdomen.

News of the Week.

Fighting the Plague.—Assistant Director Edward Francis of the Government Hygienic Laboratory left Washington for New Orleans on August 3, ordered there to assist the local authorities in warding off the invasion of plague. Dr. J. F. Harrison of Mobile has been appointed temporarily a member of the Public Health and Marine Hospital Service to inspect vessels entering the port of Mobile, and direct their fumigation. No new cases

of the plague were reported in Havana or in Porto Rico during the week ending August 3rd. A case of the disease was discovered in Liverpool on Monday of this week.

Yellow Fever in Panama.—The occurrence of a single case of yellow fever has caused the establishment of a quarantine against Panama by Costa Rica, a detention of four days being required. This is the first time that a quarantine has been established against the Isthmus in nine years.

Typhoid Fever in Porto Rico.—An epidemic of typhoid fever prevails in the municipality of Penuelas, eight miles from Ponce, in Porto Rico. In a population of about twelve hundred, there have been seventy cases of the disease, with five deaths in three weeks. The infection has been traced to the water supply, which is received from the river, and arrangements have been made by the Director of Public Health to have water from another source brought into the town.

Health of Cuba.—The Cuban Cabinet on August 3 adopted a resolution declaring that Cuba would welcome an American commission for the investigation of Cuba's sanitary condition, and also declaring that Cuba would be found in the matter of health to compare favorably with any country in the world.

Cleaning-Up Week.—Charity organizations, the Department of Health and the Department of Street Cleaning of New York, assisted by the Boy Scouts, began on July 29 a "clean-up" week in New York.

Ambulance Surgeon Hurt.—Dr. Charles Frazer, interne at the Williamsburg Hospital, was seriously injured on July 31 when the ambulance in his charge was struck by a trolley car and overthrown. Both the surgeon and the driver were thrown out, the surgeon sustaining a fractured skull and internal injuries.

Caring for Babies.—The Commissioner of Health of New York reports that during the week ending July 27, there were in the city 349 deaths of babies under one year of age, or 26 less than during the corresponding week a year ago. This makes a total decrease in infant deaths so far this year as compared to last of 456 in the entire city. The saving has been in Manhattan Borough, where the deaths have decreased by 508, and in Queens, where the decrease is 41. In the other boroughs there have been slight increase in the number of deaths; in the Bronx 41; in the Borough of Brooklyn, 33; and in Richmond, 19. It is estimated that about 43,000 babies are under the care of public and private agencies this summer.

Gifts to Charities.—The New York Polyclinic Medical School and Hospital receives a bequest of $3,000, and the White Plains (New York) Hospital Association one of $500, by the will of the late David J. Garth, of East Chester, New York.

By the will of the late Simon Adler, of New York, the sum of $500 each is left to the Lebanon and Beth Israel Hospitals of that city.

Dr. J. Anna Norris, of Chicago, has been appointed director of health and physical training for women at the University of Minnesota.

A Bill to Amend the Pure Food and Drug Law.—The Interstate Commerce Committee has favorably reported the bill of Representative Shirley to amend the pure food and drug act. This measure prohibits "false and fraudulent" curative claims on labels. It seeks to meet a decision of the Supreme Court that the putting forth of false and extravagant claims regarding the curative powers of medicines was not in violation of the pure food law.

VI. International Congress Midwifery and Gynecology.—Under the patronage of the Empress of Germany, this congress will meet at Berlin on September 9 to 13, 1912. The president of the congress is Geh. Med.-Rat. Prof. Dr. E. Bumm, and the secretary-general Privatdozent Dr. Ed. Martin, who may be reached at Berlin N. 24, Artillerie St. 18.

Obituary Notes.—Dr. JOHN JAY TAYLOR, of Philadelphia, died on August 1 at his summer home in Ocean City, N. J., after a protracted illness. Dr. Taylor was born in 1853 and was graduated from the Medico-Chirurgical College, Phialdelphia, in 1887. He was editor of the *Medical Council* and formerly one of the editors of the *Medical World*, his entire medical life having been devoted to literary work. He was a member of the Philadelphia County Medical Society, the Medical Society of the State of Pennsylvania and the American Medical Association, and of the American Medical Editors' Association.

Dr. JOSEPH E. V. MATHIEU of Central Falls, R. I., a graduate of the Medical Department of Victoria University, Toronto, in 1879, coroner of Central Falls for ten years, and for the past three years State Senator, died at his home suddenly of heart disease, on July 12, aged 49 years.

Dr. RUSSELL CAFFERY of San Antonio, Tex., a graduate of the Medical Department of the Tulane University of Louisiana in 1891, and a member of the American Medical Association and the Texas State, Bexar County, and West Texas Medical Societies, died at his home of uremia, after a short illness, on July 11, aged 44 years.

Dr. JOHN KURTZ, formerly of Moorhead, N. D., and a pioneer physician of the Red River Valley, a graduate of the George Washington University, Department of Medicine, Washington, in 1870, died at his home in Washington, D. C., on June 30.

Dr. FREDERICK C. BOYD of Kingston, Ontario, a graduate of Queen's University Medical Faculty, Kingston, in 1911, and for a short time interne at Columbus Hospital, New York, died at his home of tuberculosis, on July 5, aged 23 years.

Dr. ALFRED M. HAIGHT of White Plains, N. Y., a graduate of the New York Homeopathic Medical College and Hospital in 1879, a member of the American Institute of Homeopathy, the Academy of Pathological Science, and the New York State and Westchester County Homeopathic Medical Societies, and attending physician to the White Plains Hospital and the Jennie Clarkson Orphans' Home, died suddenly of heart disease at Ocean Grove, N. J., on July 14, aged 57 years.

Dr. W. R. TROTTER of Fort Des Moines, Iowa, a graduate of the College of Physicians and Surgeons, Keokuk, Iowa, in 1882, died at his home of paralysis, on June 29, aged 61 years.

Dr. HENRY GILES ANTHONY of Chicago, Ill., a graduate of the Rush Medical College, Chicago, in 1884, a member of the American Medical Association, the Illinois State and Cook County Medical Societies, the American Dermatological Association, and the Chicago Dermatological Association, assistant professor of skin and venereal diseases in the Rush Medical College, and professor of skin and venereal diseases in the Chicago Polyclinic, died at his home, on July 10, aged 52 years.

Dr. FRANK FIFE of Dayton, Ohio, a graduate of the Medical College of Ohio, Cincinnati, in 1892,

formerly assistant superintendent at the Dayton State Hospital, and a member of the Ohio State and Montgomery County Medical Societies, died at his home of uremia, on June 29, aged 47 years.

Dr. William Guy Richards of Tarrytown, N. Y., a graduate of the College of Physicians and Surgeons, New York, in 1878, died at his home, on June 30, aged 61 years.

Dr. Henry M. Field of Los Angeles, Cal., a graduate of the College of Physicians and Surgeons, New York, in 1862, formerly professor of therapeutics in the Dartmouth Medical College, Dartmouth, N. H., a member of the Boston Gynecological Society and a non-resident member of the New York Academy of Medicine, died at his home on July 11, aged 73 years.

Dr. Sprague Winchester of Natchez, Miss., a graduate of the medical department of the Tulane University of Louisiana in 1892, died suddenly at his home on July 20, aged 53 years.

Dr. Heneage Gibbes of McAlester, Okla., a graduate of the University of Aberdeen, Scotland, in 1879, died at his home on July 21.

Dr. Theodore F. Watkins of Philadelphia, Pa., a graduate of New York University Medical College in 1861, died at his home on July 23, aged 79 years.

Dr. Robert Fulton Boyd of Nashville, Tenn., a graduate of the Meharry Medical College, Nashville, in 1882, and professor of gynecology and abdominal surgery in his alma mater, died suddenly at his home on July 20, aged 54 years.

Dr. Jesse B. Hyland of Keene, N. H., a graduate of the Harvard Medical School, Boston, in 1884, and a member of the American Medical Association and the New Hampshire State and Cheshire County Medical Societies, died at his home after a brief illness, on July 11, aged 50 years.

Dr. Horace M. Bellows of Huntingdon Valley, Pa., a graduate of the Medical Department of the University of Pennsylvania in 1861, and a surgeon in the United States Army during the Civil War, died in Philadelphia of heart disease, on July 13, aged 73 years.

Dr. Wilbur Fisk Lamont, of Catskill, New York, a graduate of the Albany Medical College in 1880, and a member of the New York State and Greene County Medical Societies, died in the Albany City Hospital in Albany of pernicious anemia, on August 1, aged 49 years.

Dr. John Samuel Bassett, of New York, a graduate of the Berkshire Medical College, Pittsfield, Massachusetts, in 1850, died at his summer home in New Milford, Connecticut, on July 31, aged 84 years.

Dr. John Solomon Kreiter, of Akron, Pennsylvania, a graduate of the Bellevue Hospital Medical College, New York, in 1882, and a member of the Pennsylvania State and Lancaster County Medical Societies, and for many years of the Akron School Board, died at his home on July 18, aged 59 years.

Dr. Van Duyne A. Sutliff, of Philadelphia, Pennsylvania, a graduate of the Medico-Chirurgical College of Philadelphia, in 1902, a member of the Pennsylvania State and Philadelphia County Medical Societies, and demonstrator of anatomy in his alma mater, died at his home on August 1, following an operation for appendicitis, aged 40 years.

Dr. William E. Wood, of St. Louis, Missouri, a graduate of the Eclectic Medical College of Cincinnati, in 1891, and a member of the Missouri State and St. Louis City Medical Societies, died suddenly on July 22, aged 49 years.

Correspondence.

THE PREVENTION OF TETANUS.

To the Editor of the Medical Record:

Sir—The article by Dr. Dowling Benjamin in your issue of June 29 on "The Elimination of Lockjaw," is unquestionably correct, but unfortunately his treatment like that by antitoxin is preventive. What is sought especially is some treatment that is efficacious after tetanus develops. Some of the injuries that result in lockjaw are so small that it is not probable a surgeon will ever be consulted for them.

In a practice of thirty-seven years many cases of tetanus have come under my observation and care, and very insignificant injuries have often been the cause. Since the germ theory of the disease was advanced I have always treated every injury about the hands and feet of children as infected injuries and I have never had a case of tetanus follow any wound so treated. A cut or scratch is easily handled; it is the punctured wound, made usually by a nail through the sole of the foot, that requires care. An injection of some local anesthetic or the inhalation of chloroform or ether is required in the operation for cleaning a wound of this kind. With the patient anesthetized a slit is cut through the skin and tissues at the site of the wound and all foreign particles that may be dragged in by the puncturing body are washed away with an antiseptic solution. This done the wound is wiped to its extremity with a solution of equal parts of tincture of iodine and phenol and then packed with a little moist gauze. In about three days it is freshly dressed with gauze after being washed with an antiseptic. Healing is prompt and without much if any pain, and, like Dr. Benjamin, I feel reasonably certain that this treatment is justified in every case of injury of this nature.

This season I have had two cases of tetanus in children in whom death followed an infection entering through very insignificant cuts on the feet. The cuts were so small that the cases did not come under my care until the muscular spasms had developed. I have used various plans of treatment with poor success in years past. The only cases that have recovered in my practice were treated with morphine hypodermically and hydrate of chloral. But often this treatment has failed. It seems quite certain that if all wounds were properly cleaned and kept clean until healed there would be no tetanus.

Howard Jones, M.D.

Circleville, Ohio.

THE PREVALENCE OF INTESTINAL PARASITES IN THE SOUTH.

To the Editor of The Medical Record:

Sir:—Although articles on some few of the intestinal parasites occurring in the South are beginning to appear in the literature, the question of the prevalence of such parasites has not been touched, except in the case of the hookworm. Recently there was reported an examination of 407 cases in Florida without demonstrating the ameba.* This seems very unusual.

In going over my records of feces examinations in 551 individuals, 521 whites and 30 negroes, 329

*King: Quoted by E. R. Whitmore, *Arch. Int. Med.*, ix, 4, 515-519.

males and 222 females, I find that 370, or 67 per cent., were infested with some of the animal parasites, while 181, or 33 per cent., were uninfested.

The parasites found were as follows, in some instances double, triple, and even quadruple infestations being present:*

Necator americanus	118	
Ascaris lumbricoides	12	
Oxyuris vermicularis	5	
Trichuris trichiura	1	
Strongyloides intestinalis	12	(2)
Tænia saginata	4	
Hymenolepis nana	27	
Fly larvæ	3	
Amebæ	225	
Lamblia intestinalis	1	(2)
Trichomonas vaginalis	82	

The pathogenic and non-pathogenic amebæ are intentionally listed together, as at present I am uncertain about the occurrence of *Entamœba tetragina* in this locality.

According to age the infestations occurred as follows:

Age.	Cases.	Per Cent.	Positive.	Per Cent.	Negative.	Per Cent.
Under 10 yrs..	70	12.70	55	78.57	15	21.43
10 to 19 yrs..	228	41.38	152	66.66	76	33.33
20 to 29 yrs..	114	20.69	77	67.54	37	32.46
30 to 39 yrs..	68	12.35	40	58.82	28	41.18
40 to 49 yrs..	29	5.27	22	75.51	7	24.49
50 to 59 yrs..	30	5.44	16	53.33	14	46.66
60 to 69 yrs..	9	1.63	5	55.55	4	44.45
70 to 79 yrs..	3	.54	3	100.00	0	0.00
All ages	551		370		181	

The majority of these cases harbored only such harmless commensals as *Entamœba coli* and *Trichomonas vaginalis*.

Hookworm, roundworm, pinworm, and dwarf tapeworm infestations were confined almost entirely to the first two and a half decades of life, while the beef tapeworm, strongyloides, myiasis, and amebæ, both pathogenic and non-pathogenic, seem to occur at any age.

At this time I wish to bring out only one point—that in the South more than one-half of the population, regardless of age, harbor some of the intestinal animal parasites.

WILLIAM ALLAN, M.D.

CHARLOTTE, N. C.

*Nomenclature is after Braun, "The Animal Parasites of Man."

THE PREVENTION OF TONSILLAR HEMORRHAGE.

TO THE EDITOR OF THE MEDICAL RECORD:

SIR:—Some years ago a well known surgeon and a well known throat man could not see things the same way. The surgeon maintained that tonsillar hemorrhage could be stopped by the construction of a well placed ligature, the other man maintained that the requisite ligature could not be well placed and in fact told his students that the placement was impossible. The surgeon told me all about it and I promised to try the method and give him an unbiased opinion of its use in the hands of a green, inexpert, throat man like myself. The very able article in the MEDICAL RECORD of June 1, 1912, suggests to me that what I did actually do may prove of some value to some one engaged in throat work as I shall probably not have occasion to avail myself of the expedient again—or only in great emergency—as I do not anticipate performing any more tonsillectomies.

I had three cases on which to experiment. In two I cut off the tonsil and then introduced a purse-string suture of No. 1 iodinized catgut as the surgeon suggested. It worked as might be anticipated and the operation was easy. At least it was not to be compared in difficulty with trachelorrhaphy. Then the idea came to me that the ligature should be introduced first and the tonsil cut afterward. If a double threaded needle of the smooth-round variety be passed through the pedicle of a tonsil, which has been pulled out by an army bullet forceps held by an assistant, the direction is a matter of choice. The needle should be pulled clear out of the mouth, a knot tied in the loop which it carried, and then it is a simple matter to pass one free end over the holding forceps, through the loop, to draw all tight into place, to fasten with two or three knots, to cut off the long ends, or to use them as tractors, and to perform a bloodless tonsillectomy. The old-fashioned way of ligating a hemorrhoid gives a good idea of the process.

Linen or silk is the best ligature material and the needle should have no cutting edges. Then if a large artery should be transfixed the probabilities of hemorrhage are decidedly lessened. Manifestly the method would be used solely in such tonsillar conditions as rendered hemorrhage probable. Any one accustomed to the use of a modern needle holder would place such a purse string-pedicle-stitch in a very few minutes and the linen will not soften in moisture, but will cut out in approximately from six to ten days. The fault that I should consider most probable would be too great tension rather than too little. It is somewhat painful and if I intended to employ it I should certainly inject the stump with the novocain-urea solution, the anesthesia from which frequently lasts a week or more.

This letter is purely suggestive and extensive trial might bring out objections which I do not now see.

DOUGLAS H. STEWART, M.D.

128 WEST EIGHTY-SIXTH STREET, NEW YORK.

OUR LONDON LETTER.

(From Our Regular Correspondent.)

ROYAL SOCIETY'S 250TH ANNIVERSARY—BICENTENARY OF DUBLIN MEDICAL SCHOOL—TROPICAL MEDICINE APPEAL—INSURANCE AND LIVERPOOL MEETING — NURSES — RED CROSS — CENTRAL HEALTH COMMITTEE FOR LONDON.

LONDON, July 19, 1912.

THIS week the Royal Society, which we look upon as the chief scientific society in the world and its Fellowship as the blue ribbon among scientific distinctions, has been celebrating the 250th anniversary of its foundation. On Monday there was a somewhat informal reception of the delegates from other countries who came to offer the congratulations of their various institutions. This afforded an opportunity for making the personal acquaintance of the guests and their entertainers. On Tuesday there was a commemorative service in Westminster Abbey in the morning and in the afternoon the formal reception of delegates in the society's great library. The addresses brought by these delegates were not publicly read, but each spoke a few words of congratulation to the President and Fellows on this great occasion. The day wound up with a banquet in the Guildhall. On the next two days numerous visits were arranged to places in and around London. There was a garden party given by the Duchess of Sutherland in the afternoon of Wednesday, and in the evening the conversazione of the society was held.

Yesterday the King and Queen gave a reception to the delegates at Windsor Castle. The President

of the Society, Vice-President, Treasurer and Foreign Secretary were presented to their Majesties first, and then the President, Sir A. Geikie, presented the Councillors and the delegates. Afterwards they were invited to join the Royal garden party, to which numerous Indian and Colonial visitors, foreign ambassadors, members of both Houses of Parliament and representatives of the naval and military services, of the musical, dramatic and literary professions and other eminent personages had been invited with their wives and daughters. They formed a brilliant assembly of about 8,000, and their Majesties spent a long time among their guests. The weather was very favorable, not too hot, the "heat-wave" we lately borrowed from you having passed by. To-day a number of the delegates are visiting the universities of Oxford and Cambridge.

An exceptionally interesting memorial of this 250th anniversary has been published. It is a facsimile reproduction of the signatures in the Society's Charter Book, from that of King Charles II, the founder, down to those of the Fellows elected and admitted this year. It consists of two volumes. The names are by no means restricted to science, and from the very beginning of the society every branch of knowledge was freely recognized. Medicine as the chief scientific profession was well represented at the foundation and has maintained its position ever since. Sir Archibald Geikie, the president, contributes to the work an instructive preface explaining the circumstances which led to the formation of the society.

Another very interesting memorial was shown at the conversazione. On the central table was Newton's death mask, a lock of his hair, the manuscript of the *Principia*, the original model of his reflecting telescope, and some other objects. There are places in the manuscript showing another hand correcting it and believed to be Halley's, who cooperated in various ways with Newton and made himself responsible for the cost of printing the *Principia*, for the philosopher at the time was poor as is evidenced by the fact that the society remitted for him the financial dues of the Fellows.

A celebration on similar lines and more closely connected with the profession was held last week in Dublin—the Bicentenary of the Medical School. For three days Trinity College was the scene of academic festivities and delegates from the universities and colleges of numerous countries attended to offer congratulations. The Royal Colleges of Physicians and Surgeons were of course deeply interested and elected Honorary Fellows while the University conferred honorary degrees on distinguished doctors. A meeting of graduates was held under the presidency of Mr. Woods, ex-P.R.C.S.I., when it was determined to establish a permanent memorial of the Bicentenary and a committee was appointed to collect subscriptions and decide on the form of the memorial.

On Wednesday there was a refreshing scene at the Foreign Office—leaders of both political parties met to promote the appeal for the School of Tropical Medicine, Mr. Curtin Chamberlain was in the chair, and among the speakers were three secretaries of State, Sir E. Grey, Lord Crewe, and Mr. Lewis Harcourt. The chairman said that day was selected for meeting as the king had intended to lay the foundation stone of the extension of the School that afternoon on his way to visit the docks but unfortunately that visit had been abandoned. The call on the public by the *Titanic* disaster made it impossible to urge their claim at the same time. Recently some gentlemen had taken the matter up privately. Mr. Otto Beit had promised to add £250 to every £1,000 collected up to £20,000 and he had already paid £4,000 on that account. Mr. Waldorf Astor offered £1,000 if nine others would give the same and the chairman said he was glad to report that a donor who wished to be anonymous had sent him the whole £9,000. Altogether between £17,000 and £18,000 had been collected in the last two or three weeks.

Sir E. Grey said the object was beyond criticism and beyond praise. It had the advantage of being noncontroversial, but things sometimes suffered from that as people thought such claims undeniable. We should be grateful to Mr. Chamberlain for taking up this which owed its inception to his father when Colonial Secretary. The impetus he gave to Tropical Medicine would never be forgotten. Other men, as Sir Patrick Manson, had given expert knowledge and experience. This appeal was not made on a forlorn hope. Enough had been done to show how much was yet to be done and could be done.

Lord Crewe, as one who succeeded Mr. J. Chamberlain at the Colonial office, gave eloquent expression to his interest in noncontroversial matters as well as the combative subjects with which he loved to deal. The chairman would, he was sure, agree with him that the countless admirers of the great statesman could offer no more acceptable a testimonial than a handsome addition to the resources of this School. At the India office as well as that of the colonies they appreciated this great work.

Mr. Lewis Harcourt said he need not repeat what he had been saying for the last six months but would thank Mr. A. Chamberlain for the splendid, untiring energy he had put into this work, but for whose efforts the subscription list would never have reached what it had.

See how "good and pleasant it is for brethren (politicians?) to dwell together in unity!" Parties profess agreement on noncontroversial subjects and on Tropical Medicine they have shown they mean it. Why not on Insurance? The Liverpool meeting is upon us and that is to decide whether to break off negotiations. Yesterday in an interview with the press Mr. Masterman, financial secretary, threatened that if an agreement cannot be come to medical benefit may be suspended. We shall see.

On Monday Queen Alexandra entertained her auxiliary committee of the Queen Victoria Jubilee Nurses Institute for its sixth annual meeting. This committee helps the Jubilee Institute much as the League of Mercy helps the Hospital Fund. Two hundred or more ladies pledge themselves to raise at least £10 each during the year, so securing a sum of £2,000 for the work. The actual sum for 1911 was £2,071—19. On Tuesday Queen Alexandra gave a reception in honor of the British Red Cross Society. Upward of 1,000 members of committees, presidents of branches, and others interested were entertained in the garden of Marlborough House on one of the finest summer days of this year.

A conference of persons interested in promoting the Health of London was held in the Mansion House on Tuesday. Sir M. Beachcroft said the object was to ascertain whether sanitary authorities and voluntary agencies could be brought into closer communication so as to avoid overlapping and waste. Some thought that the work of the two

agencies was too distinct. Others held that in health matters local organizations were best and a new central authority unnecessary. After discussion on the motion of Dr. Allan, seconded by Sir John Tweedie, it was decided to be desirable to establish a "Central Health Committee for London" representing the various agencies at work and to promote joint action between Metropolitan and Municipal authorities and voluntary societies engaged in the prevention of disease and the education of all classes in hygiene. It was further decided to invite the co-operation of a long list of such agencies and to ask the Local Government Board to allow the meeting of the new central committee to meet at the offices of the department.

OUR PARIS LETTER.

(From Our Regular Correspondent.)

PERMANENT ARTERIAL HYPERTENSION—TREATMENT OF INFECTION BY INTRAMUSCULAR INJECTIONS OF MERCURY—SCHLEICH'S ANESTHESIA—DEATH CAUSED BY ANTITETANIC SERUM—TREATMENT OF THE MORPHINE HABIT.

PARIS, May 30, 1912.

AT a recent meeting of the Academy of Medicine Fiessinger read a paper on permanent arterial tension not infrequently observed in the subject of arteriosclerosis who may have no apparent functional lesion of the kidneys, in the obese, and in those suffering from asystole. In subjects of this kind one often sees temporary crises of high blood-pressure brought about by some extra exertion, a hearty meal, a long railway journey, or fatigue arising from any cause. The treatment of these crises consists in a milk diet, or at least the avoidance of meat, in rest in bed, and in a strict observance of all hygienic rules. The high frequency current is of use only in these temporary attacks but does not reduce permanent or chronic hypertension. The hypertension encountered in the obese calls for the same treatment as the obesity itself; when the patient's flesh is reduced his blood-pressure will fall at the same time. In the arterial hypertension of asystole minute doses of digitalis combined with theobromine will give excellent results. Thus the curable forms of chronic arterial hypertension are those in which one is able to cure the causes of high blood-pressure, as in obesity and asystole. Treatment is of value only in the crisis which yield to diet and rest, but even with a high blood-pressure patients may live many years if they will avoid excesses of all kinds which may open the door to cerebral accidents or renal insufficiency.

An interesting discussion took place recently at a meeting of the Société de Chirurgie on the treatment of infection by intramuscular injections of mercury. Souligoux related his experience with this method in the treatment chiefly of puerperal infection. He injected daily for seven days a solution of 1 cg. each of cyanide of mercury and stovaine in 1 c.c. of distilled water. Of 144 patients so treated the author lost but three, and on the strength of this showing urges the use of mercury in all cases of systemic infection, the only contraindication being renal insufficiency.

At the same meeting Jean Louis Faure read a paper on the induction of general anesthesia by Schleich's mixture of ethyl chloride 10, chloroform 20, and ether 60. He regarded it as greatly superior to chloroform alone, for he had never seen any heart trouble due to it, and postanesthetic vomiting rarely, if ever, occurred.

A case of death following an injection of antitetanic serum was reported by Riche. The serum was obtained from the Pasteur Institute and was given hypodermically in dose of 10 c.c. The speaker regarded this as an exceptional case, the general experience up to the present having been that the use of antitetanic serum was innocuous. Jacob said that one instance of this sort should not be allowed to weigh against the employment of so valuable a prophylactic. The preventive action of antitetanic serum had been conclusively demonstrated in military practice. Whenever the serum had not been employed, as in the Madagascar war, tetanus prevailed largely; where it was habitually used, as in the Morocco campaign, tetanus was practically non-existent, the only cases observed being in those exceptional instances in which for one reason or another a prophylactic injection had not been given. Arrou said his experience with the antitetanic serum had been uniformly favorable. He made it a rule to give a prophylactic injection in all cases of lacerated or punctured wounds and for eleven years past he had had no case of tetanus in his practice. Reynier was not quite so optimistic as the previous speakers, for he said the serum was not always so innocuous as surgeons in general were inclined to think. Nevertheless the undoubted prophylactic value so far outweighed the possible accidents that one would not be justified in withholding the serum in cases of lacerated wounds.

At a recent meeting of the Société de Medecine Maurice Page read a paper on the treatment of morphine addition. Sudden deprivation was dangerous, he said, and apt to induce syncope and fatal collapse. The substitutive method by giving other narcotics was worse than useless, for it resulted merely in a succession of weanings from drug habits without arriving at any end. Gradual suppression was without suffering, but it was ineffective unless the patient was under constant and complete control. Rapid suppression, in the course of eight or ten days, is favored by Sollier. This, however, causes much distress and measures must be instituted to calm the patient. Active purgation is called for, and baths—of water, light, and electricity—under excellent service. Among drugs are to be recommended sparteine sulphate, ammonium valerianate, and bromides.

OUR LETTER FROM THE PHILIPPINES.

(From our Regular Correspondent.)

VAGARIES OF LIGHTNING—DEATHS FROM LIGHTNING IN THE PHILIPPINES—CENSUS OF MIDWIVES—POSTGRADUATE COURSE IN TROPICAL MEDICINE—SANITARY ORGANIZATION IN THE PHILIPPINES.

MANILA, P. I., May 31, 1912.

A MOST unusual instance of lightning stroke occurred in the town of Cervantes, in the province of Lepanto, on May 2. During a light thunder storm a bolt of lightning entered the middle of a grass roof near the comb and passed down the center supporting post of the building and killed a young man, aged 18, and a girl, aged 12, who were sitting on a bamboo couch near an open window. The father of the two children, who was sitting on the ground nearby, was stunned by the electrical charge, but soon recovered. The victims both showed burning of the hair of the scalp on the side of the head, the burned area being, approximately, an inch in diameter. No other marks or disfigurement could be found. Three hours after the accident no post-mortem rigor had set in.

The building in which these persons were killed is a low, grass shack, approximately 8 x 10 x 8 feet; the sides or walls are constructed of nipa palm; the roof is made entirely of grass and is nearly a foot in thickness, and the building is located in an open, treeless field about a kilometer and a half from the center of the town. There are no habitations or houses of any kind within a distance of four hundred yards. A fish pond, 20 x 40 feet, with water a few feet deep, is located within fifty feet of the house. Another child, who was playing outside, near the house, did not notice anything unusual about the lightning, nor did she know that anything had happened to the occupants of the house until about ten minutes later, when she entered the building. It seems, indeed, most singular, that a low building which is built of such non-conducting materials as are enumerated above should have a lightning bolt pass through a foot of dry grass, select the middle post, pass down this and kill two persons who were, perhaps, five feet away at the time. It is curious to note, however, that this middle post was of a wood known as tebbeg, and entirely different from the wood which composed the other supporting posts of the roof. The lightning split the post badly, and the explosion which took place caused splinters, some of which were a foot long, to be hurled in all directions. It was possible to pull many of them out of the walls of the house, where they had embedded themselves.

In this connection it may be interesting to observe that during the past five years deaths from lightning in the Philippine Islands have been reported as follows: 1907, 42; 1908, 34; 1909, 71; 1910, 47; 1911, 30.

This gives an average incidence of 45 deaths from this cause per annum, and as the population of the Philippines is, in round numbers, 7,000,000, it will be observed that there is one death from lightning stroke annually among every 155,556 of population. The United States census shows that in the United States there is one case of death from lightning stroke among every 333,333 of population. In view of the fact that thunder storms prevail during eight months of the year in the Philippines, and only, approximately, four months in the United States, it will be seen that the incidence is about the same. In further analyzing the figures of deaths from lightning stroke throughout the Philippine Islands it is interesting to observe that the deaths are fairly evenly distributed throughout the archipelago. The majority of the deaths, however, occur in provinces which are on islands which have the largest area. The smaller islands, like Bohol, Masbate and Romblon, which have areas less than 1,600 square miles, have not reported any deaths from this cause.

Recently a complete census of the midwives in Manila was made by the Bureau of Health, and also an investigation of their fitness and training. It was found that there were 66 midwives who regularly carried on this vocation. Of this number 41 had no license whatsoever, and invariably their personal cleanliness and the cleanliness of the houses in which they lived was much more unsatisfactory than among the licensed midwives. It is very difficult to deal with the unlicensed midwives in a legal way, because no penalty attaches unless it can be shown that they receive a fee for their services, and this has been difficult to demonstrate in the past to the satisfaction of a court. In order to overcome this difficulty the Manila Medical Society has drafted a law for consideration by the Legislature which makes it illegal to practise midwifery without a license, whether the woman charges a fee for her work or not.

The College of Medicine and Surgery of the University of the Philippines is just about to start a postgraduate course in tropical medicine and in public health. The degree of Doctor of Tropical Medicine is to be granted after the satisfactory completion of a one-year postgraduate course in tropical medicine, and the degree of Doctor of Public Health after the satisfactory completion of the first year postgraduate course in tropical medicine, and a second year course in public health. The enormous amount of clinical material available in the city of Manila, as well as the facilities afforded by the very modern Philippine General Hospital, and the large number of trained scientific workers who are connected with the University, affords the school unusual opportunities for giving a first-class course in these branches.

Sanitary organization and its practical application has probably reached a higher degree of development in the Philippine Islands than is the case elsewhere. The success which has attended the application of hygienic and sanitary measures has fully justified the plans under which it was achieved, and the laws by which it was brought about are, therefore, of great interest. The Sanitary Code for the City of Manila is one of the few ordinances in existence which covers the whole field of municipal hygiene and sanitation. The course in public health will offer innumerable opportunities to observe the actual workings of this law. On account of Manila's close proximity to the great infected centers of the Orient there are more opportunities for studying modern maritime quarantine methods and witnessing their application than is the case elsewhere. The large Mariveles Quarantine Station has treated more infected vessels in recent years than any other similar station in the world. The questions connected with better water supplies in the tropics, with a view to their solution, have received a vast amount of attention and extensive laboratory studies are constantly in progress. On account of the rapid development of the islands many occasions are constantly afforded for observing the installation of the different kinds of water systems and noting their effect upon public health. There will be ample opportunity to become familiar with the laboratory examinations connected with the analysis of foods and drugs in connection with the enforcement of the Food and Drugs Act. The new developments in public health work are constantly being applied in the Philippines on a large scale, so that the testing of the new theories of sanitary science by practical application may be constantly witnessed and their value determined.

From the foregoing it is evident that the postgraduate course outlined offers opportunities of the very highest order which should secure interest and students from universities not so favorably situated. Students who are graduates of the College of Medicine and Surgery will be admitted free of charge. Those who are not graduates of this institution will be obliged to pay a fee of $125 per school year.

Alvin J. Cox, formerly Chief of the Division of Inorganic Chemistry, Bureau of Science, has been appointed Acting Director of that Bureau, and Henry D. Gibbs, formerly Chief of the Division of Organic Chemistry, has been appointed Acting Assistant Director.

Progress of Medical Science.

Boston Medical and Surgical Journal.

July 25, 1912.

1. Second Note on Bacterial Invasion of the Blood and the Cerebrospinal Fluid by Way of Lymph Nodes; Findings in Bronchial and Retroperitoneal Lymph Nodes. E. E. Southard and M. M. Canavan.
2. Immigration and the Midwife Problem. J. S. Wile.
3. The Efficiency of the Operative Population of a Textile City as Viewed from a Surgical Standpoint. M. B. Swift.
4. Institutional Dentistry. Methods. Results. F. A. Keyes.
5. The Massachusetts Reformatory Method of Differentiating Defective Delinquents. G. G. Fernald.

1. Invasion of Cerebrospinal Fluid by Way of Lymph Nodes.—E. E. Southard and M. M. Canavan, following the same technique adopted by Gay and Southard in their study of the post-mortem bacteriology of the blood and cerebrospinal fluid, and that of Southard and Canavan in their study of the blood, cerebrospinal fluid and mesenteric lymph nodes have studied the post-mortem bacteriology of further cases, replacing mesenteric by bronchial lymph nodes, and in other cases adding retroperitoneal lymph nodes. The conclusion of two former papers is further established, viz., that post-mortem cultures from the cerebrospinal fluid are more likely to yield growths than cultures from the blood. Just as the cerebrospinal fluid proved more frequently positive than did the mesenteric lymph nodes, so, too, the fluid remained more frequently positive than the bronchial lymph nodes. Retroperitoneal lymph nodes, however, were found more frequently invaded than either blood or cerebrospinal fluid in the authors' series.

2. Immigration and the Midwife Problem.—J. S. Wile states that in order to appreciate the relation of immigration to midwifery, it is necessary to ascertain how many midwives are admitted to this country. In order to protect the country from the unscrupulous midwife, it is essential that a system of education, supervision and control be established throughout the various States of the Union. Only by education and legislation and by controlling the immigrant midwife will it be possible to prevent an increase of the dangers now attributed to midwifery among the constantly increasing immigrant population. The increase in midwives depends upon the increase of female immigation. The standards of midwifery in this country should be raised at least to the standards existent in the countries from which the immigrant midwife comes. By the further control of immigation and the securing of information relating to the educational, professional and legal status of midwives, it will be possible to place the midwife problem in an intelligent manner before the American public.

3. Surgical Aspects of the Textile Industry.—M. B. Swift notes that in Massachusetts the permanent loss of efficiency due to the textile industry is small. This is due in part to the laws which govern the industry, and to the care used voluntarily by the employers and employees. The hours of labor have little or no bearing on injuries, as these injuries happen with about equal frequency at all hours of the day. Temporary loss of efficiency is considerable, not necessarily because of the severity of the injuries, but rather because of the care necessary in the treatment of the injuries to ward off the effects of infection. The open antiseptic treatment of the open wounds is the only logical treatment, and produces most excellent results in maintaining the efficiency of the industry. The cotton manufactories in Massachusetts do not cause as great a loss of efficiency to the community as do the other mechanical trades

New York Medical Journal.

July 27, 1912.

1. The Tissue Density Factor. H. Wakefield.
2. The Newer Teachings of the Diseases of the Alimentary Canal. M. I. Knapp.
3. Insanity and Heredity. J. B. Macdonald.
4. Ten Sex Talks to Girls. I. D. Steinhardt.
5. Mercuric Salicylate Intramuscular Injections in Syphilis. J. L. Wollheim.
6. The Corporation of Barber Surgeons in England and Holbein's Painting. C. G. Cumston.
7. Tincture of Iodine the Best Surgical Disinfectant. F. T. Woodbury.
8. The Physician as an Investor. D. Fenwick.
9. "Neuralgia of the Testicle" Caused by Adhesions. E. G. Ballenger and O. F. Elder.

1. The Tissue Density Factor.—H. Wakefield believes that throughout the body the tissue density factor is an important one in various respects. In relation to the circulation the loss of the vascular tonicity of expanded and flabby tissue is familiar to all. Dilated vascular walls imply a passive hyperemia and a sluggish circulation. Elongated muscles, ligaments, and aponeuroses imply weakness, incoordination, and general incapacity. The relation of tissue density to its permeability is one of great importance. The exudation in progressive order of water, serum, and blood from rarefied tissues is common in pathological cases, and edemas, hemorrhagic extravasations, and purpuras are not infrequent in some advanced cases. Rarefied cells and dilated interstices, low surface tension, and osmotic pressure, are responsible for innumerable deposits in such tissues of urates, oxalates, and tissue and blood detritus and pigments, as well as bacteria. The problem of susceptibility to infection is closely related to the density of tissue as regards invasion, favorable soil, vital resistance, reaction weakness, impaired oxidation, autolytic powers, and all the other factors which go to make up the prophylactic capacity of high tissue integrity. The selective determination to, and action upon the diseased tissues by the dyes recently introduced into therapeutics, must depend upon the difference of surface tension and osmotic pressure.

5. Mercuric Salicylate Intramuscular Injections in Syphilis.—J. L. Wollheim states that the injection of the insoluble mercury suspensions causes indurations. Quinine and urea alleviate in many cases the pain and discomfort caused by most of the mercury salicylate suspensions. Quinine and urea hydrochloride is nontoxic and does not impair the therapeutic action of mercury.

7. Iodine as a Surgical Disinfectant.—F. T. Woodbury discusses the essential and indispensable properties which a substance must possess in order to be a surgical disinfectant. It must be bactericidal in simple solutions with harmless liquids. It must form solutions with great osmotic power; that is, with power to penetrate and reach the deep-seated bacteria. The solutions of this substance must not be poisonous in bactericidal strength. The solutions must be equally bactericidal in any accessible infection in any tissue of the body. The disinfectant must not be histolytic, even on debilitated tissue, but should favor cellular recuperation and organization when in solutions of sufficient strength. It must have prophylactic power when used before any symptoms of infection have appeared. The solutions of this substance must be simple in formula and easy to prepare. The substance in antiseptic solution must be cheap. It must be readily obtainable. It must be readily and safely transportable in ordinary containers without deterioration. It should not be irritating to those using it, nor form compounds with other chemicals used in surgery, which may be dangerous. With these points in view, one may reasonably entertain the belief that iodine (and particularly the two per cent. alcoholic tincture and the five per cent. watery solution) comes nearest to fulfilling the requirements of surgical disinfection of any of the substances offered for that purpose.

Journal of the American Medical Association.

July 27, 1912.

1. Plague: The Menace of the United States. H. D. King.
2. The Necessity for Rodent Extermination in American Seaports. W. C. Rucker.

3. Further Experience with Aneurysmorrhaphy (Matas). A Report of Eight Cases. J. H. Gibbon.
4. Gynecological Pelvic Drainage. J. Wesley Bovée.
5. Tumors of the Small Intestine. W. D. Haggard.
6. Benign Epithelioma. A Study of Transitional Morphology. M. L. Heidingsfeld.
7. Diverticula of the Gastrointestinal Tract: Their Surgical Importance. C. H. Mayo.
8. Chronic Unopened Empyema. E. M. Von Eberts.
9. The Surgery of Chronic Infectious Diseases of the Lung. S. Robinson.
10. Experimental Poliomyelitis in Monkeys. Thirteenth Note: Survival of the Poliomyelitic Virus in the Stomach and Intestine. S. Flexner, P. F. Clark and A. R. Dochez.
11. A Case of Myositis Ossificans Traumatica. St. C. Vance.
12. Tonsillectomy and a New Tonsil and Nasal Septum Knife. A. H. Sawins.
13. Endothelioma of the Lymph Nodes of the Neck. E. A. Babler.
14. A New Case of Duodenal Stenosis. J. M. Anders.
15. Supernumerary Axillary Mammary Glands. E. G. Mattison.

1. **The Menace of Plague.**—H. D. King states that plague is a menace to the United States at the present time. The present pandemic is not merely unchecked but is really growing greater daily, as shown by its occurrence in Cuba and Porto Rico. It has followed commercial routes, but largely by sea as against the overland commercial routes of former pandemics. It is not limited by continents or latitudes or longitude, but can become epidemic in any part of the world under favoring local conditions. Certain peculiarities of this pandemic are worthy of note, such as variations in susceptibility, and in the virulence of the disease in certain areas. The most dangerous fact is the tendency of the diseases to remain dormant in certain localities only to recur sporadically. This leads to a false security and the disease may insidiously establish new foci of infection. Nowhere are these peculiarities more manifest than in South America, which may be considered as the occidental distributing center at the present time. The present danger is from without, but it is very close, and if the plague should reach the country King believes it will be through some Gulf or South Atlantic port. The entire west coast of South America is infected and its eastern coast in spots, from one of which it has spread to Porto Rico and Cuba. In no South American country is there a properly constituted board of health. There is a lack of cooperation between the state and local boards. Maritime sanitation is very imperfect and the means of combating plague are inadequate and antiquated. The character of the exports is also to be considered and the importation of rodent furs, such as chinchilla, may be a means of carrying infection. The above strictures do not apply to capital cities, like Rio, Buenos Ayres, and Valparaiso. The author credits the smuggling and coasting traders between the West Indies and South America with the introduction of the plague to Cuba and Porto Rico.

4. **Pelvic Drainage.**—J. Wesley Bovée notes that the indications for drainage of the pelvic portion of the peritoneum are (1) the suspected presence of infectious materials, such as pus or serum or infected blood-clots of ovarian, uterine or tubal hemorrhages caused by ectopic pregnancy or other conditions; (2) capillary hemorrhages and denuded areas resulting from separation of broad adhesions between the remaining pelvic structures and the uterus, pelvis, Fallopian tubes, and ovaries or neoplasms of the same; and (3) injuries of the rectum, lower ureter or bladder resulting usually from operations on the adnexa or on those structures themselves by the transperitoneal route, from which sites subsequent leakage may be feared.

5. **Tumors of the Small Intestine.**—By W. D. Haggard. (See MEDICAL RECORD, June 29, 1912, page 1246.)

6. **Benign Epithelioma.**—M. L. Heidingsfeld questions the commonly held opinion that skin diseases afford special advantages for the study of morphological changes incident to malignancy. No malignant tumor of the skin can attain sufficient size to permit macroscopic recognition and at the same time demonstrate its genesis and origin from some definite follicle, gland or epidermal structure. There is, however, a certain class of skin tumors, the so-called multiple benignant systic epitheliomas, which present some unusual features for study. Five cases of this type are discussed as regards their morphology. The author has also included in his consideration a case of morphea-like epithelioma and a case of carcinoma epitheliale cicatrisans on account of certain features they afford for comparative study. The conclusion that he reaches is that the genesis and fundamental origin of all forms of epithelioma must, in the light of present knowledge, remain a more or less unsettled question. While it is clinically true that moles, etc., sometimes take on malignancy the vast majority show no such etiology. If malignancy starts from hair follicles, sweat glands and other preformed cellular structures, cases should be more frequent than are currently reported.

7. **Diverticula of the Gastrointestinal Tract.**—By C. H. Mayo. (See MEDICAL RECORD, June 29, 1912, page 1248.)

8. **Chronic Unopened Empyema.**—By E. M. Von Eberts. (See MEDICAL RECORD, June 29, 1912, page 1245.)

9. **Surgery of Chronic Infectious Diseases of the Lung.**—By S. Robinson. (See MEDICAL RECORD, June 29, 1912, page 1245.)

10. **Survival of the Poliomyelitic Virus in the Stomach and Intestines.**—S. Flexner, P. F. Clark, and A. R. Dochez conclude from their experiments that the poliomyelitis virus occurs in the nasal and buccal mucus in human cases of poliomyelitis and it is inevitably taken into the stomach with the swallowed saliva. The virus survives the action of both the gastric and intestinal secretions and persists for a time in these organs. In human beings it leaves the body, in part, with the intestinal discharges, which are therefore a potential source of infection. It remains to be determined whether in the monkey artificially fed with the virus it also passes out in a viable state with the dejecta.

11. **Myositis Ossificans Traumatica.**—St. C. Vance notes that there are two forms of myositis ossificans—progressive and traumatic. The progressive form is a rare disease of early life tending to ankylosis of all articulations. Traumatic ossifying myositis follows one of two kinds of injuries. The trauma may be a slight one and frequently repeated, and such cases are occasionally seen in cavalrymen, in whom the adductor muscles undergo sprain from overuse, resulting in what is called "rider's bone." In the other type the trauma may be a single severe one. The theory is that blood and possibly a number of displaced periosteal cells infiltrate the muscular connective tissue and organize into the bony structure. The salient points of a case reported by the author are the formation of the tumor in nine weeks, its location in the crureus muscle and the early excision and complete relief of disability.

The Lancet.

July 20, 1912.

1. Intractable Constipation Treated by Operation. P. Lockhart Mummery.
2. The Causes Leading to Educational Deafness in Children, with Special Reference to Prevention. M. Yearsley.
3. The Treatment of Diphtheria Infection by Means of Diphtheria Endotoxin. R. T. Hewlett and A. T. Narkivell.
4. Recent Advances in Our Knowledge of Heart Disease. A. J. Whiting.
5. The Relation of Iron to Anemia in Infancy and Childhood; Also Showing What a Large Amount of Iron There Is Stored Up in the Fetal Liver at Birth. H. T. Ashby.
6. An Improved Classification for Cases of Pulmonary Tuberculosis, with a View to Comparative Statistics. F. R. Walters.
7. Observations on the Neuron. H. Campbell.

1. **Intractable Constipation Treated by Operation.**—P. Lockhart Mummery states that one can recognize three distinct types of constipation: (1) Obstructive constipation, in which some definite obstruction exists to the passage of fecal material along the colon; (2) atonic constipation, in which the peristaltic and expulsive power

of the colon is deficient; (3) undue solidity of the fecal material interfering with its passage along the colon. The cases of obstructive constipation form the majority of the cases brought to the surgeon and are those which in most instances can be treated successfully only by surgical operation. Adhesions constituted one of the commonest causes in the author's series, being present in eight out of a total of thirty cases. Cases due to adhesions are generally characterized by well localized pain in the abdomen, which is especially noticed at the time when peristalsis is active—that is to say, two or three hours after a meal and before the bowels act. The pain, in a few cases, is very severe, and is then probably the result of enterospasm in the section of bowel just above the kink. The essential factors which make for success in operations for localized adhesions are: (1) perfect asepsis; (2) doing the operation bloodlessly, and particularly leaving no blood in the peritoneal cavity; (3) covering in all raw surfaces and stumps by careful suturing, and, where necessary, by plastic operations on the peritoneum; and (4) gentle handling of the peritoneum. Of all the cases in the author's series those of visceroptosis and atony of the bowel were the least satisfactory. According to the author's experience there is no surgical treatment which can be depended upon to cure these cases. Appendicostomy, by enabling the bowel to be kept empty, gets rid of the autointoxication, which is one of the most serious symptoms, and therefore gives considerable relief, but the author cannot say that appendicostomy entirely cures these cases.

3. **Treatment of Diphtheria Infection by Means of Diphtheria Endotoxin.**—By R. T. Hewlett and A. T. Nankivell. (See page 252.)

5. **Relation of Iron to Anemia in Infancy and Childhood.**—H. T. Ashby states that the liver is the organ that has most to do with the storage and with the metabolism of iron. The liver in intrauterine life receives a very good blood-supply by means of the branches of the umbilical vein carrying arterial blood from the placenta. It seems that the liver performs a similar storage function with regard to iron as it does with regard to fats and carbohydrates. As in animals, the human being has iron stored up in the liver at birth to last while the individual is being fed on the milk, which is almost devoid of iron. A full-term fetal liver contained five times as much iron as the adult liver, and as much as one from a case of pernicious anemia. Most of the livers from children contained more iron than the adult ones, but the iron in the livers of the infants gradually diminishes as they grow up, which would be expected. The liver of a rheumatism case contained practically no iron, a fact that is interesting when it is known how pale the child was and that she died from the effects of rheumatism with peri- and endocarditis. In this case there must have been a great destruction or else an inhibition of the renewing of the red blood cells. A case of Hodgkin's disease, in which there had been anemia for a long time, also had very little iron; on the other hand, the splenomedullary leucocythemia, which had great anemia, contained a fair quantity of iron. These last two cases had had large quantities of iron given them during the disease, but it must have been nearly all eliminated as soon as it was taken, or, at any rate, was not stored in the liver. The two cases of pernicious anemia contained a large quantity of iron, which was in the form of inorganic iron, unlike the other livers, and the iron could thus be stained at once without unmasking. A case of hypertrophic cirrhosis also contained a large quantity, and after the piece of liver had been burnt away in the crucible the iron could be seen quite clearly as a red residue. No doubt the iron in pernicious anemia is in such a state that it cannot be used, or else the body is unable to use it for some reason.

British Medical Journal.

July 20, 1912.

1. Operations for Cancer of the Tongue. W. G. Spencer.
2. Oxygenation and Tuberculosis. B. Moore.
3. Experience of the Dionadin Treatment. A Report upon the Patients Who Received the Treatment. C. Wall.
4. Anesthesia by the Intratracheal Insufflation of Ether. R. E. Kelly.
5. Acute Epiphysitis. C. M. Kennedy.
6. Appendicitis in Private and Public Hospitals for the Insane. J. F. Briscoe.
7. Gastric Adhesions as a Cause of Sudden Death. G. Hamilton Winch.

1. **Operations for Cancer of the Tongue.**—W. G. Spencer states that the late Sir Henry Butlin taught that the excision of any persistent patch or indolent ulcer is the means for preventing the onset of cancer of the tongue. The operation is quite safe, is not followed by any deformity, and as soon as the tissue removed has been examined the patient may be assured of safety. Further, the early excision of an epithelioma of the tongue, followed by excision of the glands in the neck, is for early cases not dangerous, and in Butlin's hands as many as 42 per cent. of such were alive and free from recurrence three years after the operation. If these cases are advised to submit to early operation one will not have to regret that they will reach an advanced stage, when severe, deforming operations become necessary. Yet one might quote any number of single cases, which have been exhibited by various surgeons, alive and well more than three years after such operation. Sir Henry Butlin made a great advance; there is a need for much more. As he remarked, the majority of cases operated upon die of the disease, and the Registrar-General's statistics state that more than 750 people die annually in England and Wales of cancer of the tongue.

2. **Oxygenation and Tuberculosis.**—B. Moore states that the tubercle mass is non-vascular and perishes and caseates as it grows in size for lack of oxygen. The giant multinucleated cells which it contains probably owe their form and development to lack of oxygen—at least that is the type of result which is seen when young growing cells are partially asphyxiated. The tubercle bacilli in a tubercle are in a situation where they are in a minimum concentration of oxygen. First of all they are in relationship to the lymphatic system, where outside them the oxygen supply is at its poorest; and then, in addition, they are separated from the lymph by a non-vascular area which increases in size as the tubercle grows. This is a favorable condition of growth, and when the tubercle breaks down the live bacteria are discharged to find new points at which to start more tubercle formation. The well recognized treatment of tuberculous joints by the hyperemic method of Bier is interesting from this point of view; the increased capillary pressure leads to increased lymph flow, and so does artificially for the joint what mitral stenosis does for the lung. The beneficial results of the Finsen light treatment upon lupus are also commonly ascribed to the local hyperemia induced in the affected area. If this be so, it is an additional argument in favor of the view that increased oxygenation of the surrounding lymph is the beneficial agent, for the increased blood supply and blood pressure in the capillaries will lead to increased lymph flow, and hence to increased oxygenation of the affected area. The treatment of phthisis by open-air methods and by high altitudes is also in accord with this view, upon which the effect obtained would in both cases be due to a common cause—namely, the more efficient ventilation of the lung, and, as a result, the mechanical increase of the lymph flow, especially at the apices.

4. **Intratracheal Insufflation Anesthesia.**—R. E. Kelly summarizes the advantages of this method as follows: The current of air at the glottis is outwards. The air enters through the catheter and escapes between the catheter and the opening of the glottis. Against this cur-

rent no blood, mucus, or vomitus can possibly find its way into the air passages, so that in difficult mouth, tongue, jaw, and goiter operations, or cases of intestinal obstruction, there is not the slightest danger of any foreign material gaining entrance to the lungs. In mouth and neck operations the surgeon is in no way interfered with by the hands of the anesthetist, for a tube alone connects the patient with the apparatus, which may therefore be placed at any distance from the operating table. In those diseases in which respiration fails life can still be maintained. It is possible to give a dog twice the lethal dose of strychnine and yet keep him alive in spite of the spasm of the respiratory muscles. In a case of myasthenia gravis, reported by Elsberg, in which respiration failed on account of paralysis of the respiratory muscles, a patient was kept alive for some twelve hours after all normal respiratory movements had ceased. There is no doubt that in the future, whenever available, this method will replace the present system of artificial respiration by manual means, especially in cases of poisoning and tetanus. Chest surgery now becomes practicable in the absence of either a Sauerbruch or Meyer cabinet. The author has employed this method of anesthesia in twenty-five cases and has found that the patients recover more quickly, the after-effects are lessened, vomiting has only been noticed once, and from the surgeon's point of view the anesthesia is perfect. Further, the anesthetist has a greater sense of security, for if at any time he thinks that artificial respiration may be necessary, he has the apparatus ready at hand, and has merely to turn the pointer from "ether" to "air."

7. **Gastric Adhesions as a Cause of Sudden Death.**—By G. H. Winch. (See page 267.)

Berliner klinische Wochenschrift.

July 15 and 22, 1912.

Method of Testing the Functions of the Pancreas.—Ehrmann states that in testing the activity of the pancreas enzymes by the work they do, as shown chemically and microscopically by a study of the siphonates and feces we always have to discount the effects of gastric digestion. The methods in use for this purpose are slow and uncertain. The author has devised or discovered a color reaction which will enable one at a glance to estimate the work of the pancreas. It is known that neutral fat free from fatty acid is split up solely by the pancreas lipase and that the resulting acids form green salts with copper. Commercial palmin makes a good neutral fat for testing. None of the ordinary dietetic fats is suitable for this purpose. On a fasting stomach the patient takes the following trial meal: About thirty grains of rice flour are dissolved in a quarter liter of water, warmed, and a little salt added to give sapidity. Some seventy-five grams of palmin are liquefied and stirred in. The mixture is then swallowed and allowed to remain for two to two and a half hours, when it is siphoned out. The siphonate is shaken up with petroleum ether containing 10 per cent. benzol and the ethereal extract of fat is then mixed with a solution of 3 per cent. acetate of copper. The activity of the pancreas is indicated by a brilliant emerald green. If the pancreas lipase is absent no color change results. If there is a certain per cent. of HCl in the siphonate, as shown by Congo red, the test may fail. But it may be obtained in a second attempt in which soda is added to the test meal.

Pregnancy After Artificial Impregnation.—Hirsch, apropos of Döderlein's recent success in this field, speaks of the popular sensation caused by its publication, as if it was something novel. The author believes that the small number of published cases gives us no idea of the vogue of the practice. The art itself is so simple as to suggest itself to any practitioner, and of those who practiced it some certainly would not, for one reason or another, be likely to report it. The author knows of successful cases which not only were never published, but were known to very few people. The author himself has had not less than sixteen cases, of which number six were successful. In the first case three attempts were made and the third succeeded. The woman was perfectly normal, and the cause of failure of natural impregnation was not apparent. In the second case the cervix had been dilated and a false position of the uterus corrected before impregnation could be effected. On account of the tendency to retroflexion, the woman aborted. One of the other women had a small uterus, but impregnation resulted. In one of the six cases the fault lay with the husband whose potency was weak. The author's technique varies in no wise from the common practice. Timidity or modesty is the greatest obstacle to success, and the privacy of the home must be secured, although Doderlein's recent case transpired in the hospital. The author would never consent to use semen from another man, a possibility which has sometimes been debated.

Leucemia and Benzol.—Von Korányi refers to the cases reported by Barker of workers in benzol who developed severest anemia and purpura. As a result, Selling made experiments and found that in rabbits benzol first increased and then diminished the number of leucocytes until they disappeared altogether. This fact suggests that benzol might be of value in leucemia and the present author at once exhibited it to a number of patients with that affection. The blood counts show surprising improvement. The action of benzol is slower but more certain than that of the *x*-rays. A good initial result was obtained in a case of polycythemia with enlarged spleen. It is as yet too soon to pronounce on ultimate results. Three or four grams of benzol are the daily dose.

Researches with Tumoraffin Substances.—Neuberg, Caspari and Löhe report progress in researches into tumor therapy in animals. Neuberg sums up his section with the statement that several substances have been discovered which exert a selective action on cancer and sarcoma cells in mice, rats and dogs, destroying them in the living animal. Two classes of substances are concerned, selenium plus coloring matters and the tumoraffin metals. Caspari cited a number of cases of brilliant results. Since various substances were used, no one receives special designation. Simply some tumoraffin substance is injected into the caudal vein of the rat. Löhe, who studied all the tumors in order to determine the rationale of the action of remedies, mentions among the latter tin, lead, arsenic, copper and so on through most of the metals. The result is a softening of the center of the mass as a result of the affinity of the metal for the tumor cell. In the present experimental stage of the research no technique is given The tumoraffin principle has in a measure been foreshadowed in the employment of metallic iodides in gummata; and it is announced that sodium iodide has some inhibiting power over mouse tumors.

Late Eunuchism and Multiple Bloodgland Sclerosis.—Falta of v. Noorden's classic describes a condition which while new in a sense may be recognized from descriptions of historical episodes—for example the state of eunuchism which developed in some of Napoleon's soldiers in the Egyptian campaign. This metamorphosis has always been a mystery, but quite recently the same condition has actually been described by Gandy, whose name it goes by and who accounts for it by dysthryoidism while others accuse all the endocrinic glands. It is less an unsexing than a reversive infantilism, and instead of being a clean cut condition is doubtless a very composite affection. The initial factor in Napoleon's cases was probably gonorrheal and syphilitic orchitis, but other causal factors must have been superadded for it is known that these affections seldom destroy the testicles. Traumatism involving the tes-

ticles has produced the picture. In other cases no cause is apparent. A close study shows that atrophy of the testicles can by no means illuminate the condition. There is a complete involution of these bodies and this in some measures causes disappearance of sexual desire and secondary sexual characters. The symptomatology is therefore closely allied to the results of castration. The article will be continued.

Increase in Dietetic Protein as a Galactagogue.—Liepmann shows that by adding concentrated protein to the ordinary diet of nursing animals the total quantity of breast milk is increased. The discovery is by no means new, having been announced about 1900. The author in order the better to demonstrate its truth or falsity tested it upon goats. The finds were so positive in character that he will transfer his research to women. The substances for reinforcing the diet protein were some of the casein albumoses.

Münchener medizinsche Wochenschrift.

July 9 and 16, 1912.

Ergotin and Caffein in Myocarditis, Arteriosclerosis, and Cardiac Neuroses.—Weile, who has already advocated the combination of the two remedial principles for these affections, adds that he has now treated twenty cases in this manner. He gives a typical example in which the patient had become unable to earn his livelihood. The patient was a young man, and nothing could be found to explain the prostration and constant vertigo of which he complained beyond the fact that the fifteenth heartbeat was regularly skipped. The two remedies were injected in the precordial area, and the missed beat was at first deferred and eventually became wholly normal. The patient's strength was regained and he was able to resume work. The subcutaneous injections were alternated every second or third day with the internal exhibition and treatment was maintained for five or six weeks. After cessation of treatment there has been no relapse, although this case goes back ten years. The author cites a parallel case, untreated, which appears to show that these cases of cardiac neurosis may end in fatal collapse. The case has been regarded as one of hysterical vertigo. In another case treated by the author's method the patient, a man aged 65, had advanced arteriosclerosis. The heart skipped every eighth or tenth beat. The remedies were given internally. The heart action became normal, but the arteriosclerosis had gone beyond the point at which it could be influenced by treatment.

Undesired Collateral Action of Hypophysis Extract.—Bovermann reports a case in which after evacuation of the uterus after abortion hypophysis extract and ergotin were given for hemostasis. As patient came out of the mild ether narcosis she complained of abdominal pain. The pulse was very poor and soon afterwards the woman collapsed. Hemorrhage had wholly ceased. The usual analeptics seemed inert, but intravenous saline infusion produced a reaction. Only after some hours did she revive fully. Ergotin has produced this result in very large doses, but in this case only the usual single dose was given. The condition is best explained by synergism of two drugs which alike cause contraction of the blood vessels. The patient had lost much blood and the condition should be regarded as an extremely protracted syncope.

The Luetin Reaction.—Kämmerer of Munich has just finished testing a series of a hundred and more cases. His conclusions to date are as follows: There is neither danger nor unusual discomfort to the patient. In the material tested, with a solitary exception, the reaction was proved to be specific for syphilis. It is not always possible to distinguish a specific local reaction from a nonspecific, accidental consequence of the injection. Controls sometimes show vesicles and pustules. In over one-half of the known syphilitics the reaction was negative. Late cases seem more disposed than early ones to give positive reaction. The numerous negative results may be explained in part by the state of the allergy and partly by a denaturing of the spirochete albumin. Two weeks' observation are required to control the cases of so-called torpid reaction. The luetin reaction is of use to supplement the Wassermann reaction, and is so much more elementary that any practitioner may use it himself. As to the best methods of preserving the spirochete extract there is considerable uncertainty.

Surgical Prophylaxis of Acute Coryza.—Sick refers chiefly to the disturbing influence of a severe cold in connection with surgical work. Operations cannot be deferred. The surgeon or assistant may wear a veil, but this is unpromising as a resource. Diseases like erysipelas may be conveyed from a cold, for the bearer may have infectious sinus disease. To so slight a cause may be traced the failure of wounds to heal by first intention. An analogous problem is that of the pediatrist with a fresh cold who must come in contact with nurslings. In common or influenzal coryza one pediatrist snuffs up a few drops of lysoform from his palm just before visiting a nursling ward. It causes pain and a free discharge from nose and pharynx but is soon followed by relief. Incidentally it was learned that a cold could be jugulated in this manner, by snuffing the lysoform four or five times at two to four hour intervals. The author made trial of this expedient but in his case at least the result was not so fortunate. Some years ago various drugs, menthol, camphor, eucalyptus, protargol, etc., were tried out for this same purpose. The methods, however, were too little adapted to the task of rapidly sterilizing a surgeon's nose. There is nothing absolutely new in this sort of prophylaxis, for it was used long ago by medical men in influenza years. Experiences under such conditions are largely personal and not necessarily transferable. In 1904 and 1906 the present author suffered much from influenza, catching cold at the least exposure. He made extensive use of aspirin during these periods. On account of the tendency to contract fresh cold at night the author took an evening dose and usually waked up clear. At any time when he felt the preliminary sensations, he took one or two doses of a gram each. Much depends on proper timing. As an operating surgeon the author has solved the problem as far as it relates to himself.

Cause of Scoliosis.—Port opposes the view that scoliosis can be due necessarily to want of muscular equilibrium from faulty posture. He relates the case of a ten year old child, strong and muscular, of sound stock, no rickets, which he had often seen undressed and admired as faultless in development. The boy then began to complain of headache and the nuchal muscles were found to be tender. The pains yielded promptly to aspirin. Examination showed no further anomalies. A few months later lateral curvature was evident. From this and a parallel case the author concludes that scoliosis may develop suddenly in the midst of robust health. There was absolutely no history of a faulty posture. The trouble was attributed to a primary myopathy which affected the muscular equilibrium. The myopathy would be termed an insidious, chronic muscular rheumatism.

Trophoneurotic Separation of Nails, Followed by Alopecia Areata.—F. Parkes Weber reports the case of a woman, aged thirty-seven, in whom these associated conditions were present. In March, 1911, a skin eruption had appeared on her hands and fingers, and deep grooves like exaggerated "Beau's lines" had formed. Somewhat later the toenails were affected similarly, but to a lesser degree. Under mild arsenical treatment the abnormal condition of the nails disappeared; but in March, 1912, alopecia areata of the back of the hairy scalp commenced to be noticed.—*Proceedings of the Royal Society of Medicine.*

Insurance Medicine.

SUGGESTIONS TO MEDICAL EXAMINERS.

BY THE INSURANCE EDITOR.

THE PHYSICAL EXAMINATION.

THE NERVOUS SYSTEM.—It is safe to state that the condition of the nervous system receives too little attention in the great majority of examinations for life insurance. Specialists in nervous diseases have assured life insurance medical officers that they could almost guarantee to furnish applicants who would pass the usual examination for life insurance and yet whose acceptance would prove a loss to the company, some within a very short time. This statement refers especially to cases of general paralysis of the insane and tabes dorsalis in their incipient stages. Examiners should always, then, have in mind the possibility of meeting with one of the dangerous forms of nervous trouble in its early stage when the signs, though most important, are slight and easily overlooked.

Subjects with marked or advanced disease of the nervous system will rarely present themselves for examination. Not infrequently, however, applicants having atrophy of one or more of the extremities with some deformity and a moderate degree of disability, the result of acute poliomyelitis in early life, will be encountered. This condition is of little consequence unless very marked, and the examiner's duty in such cases ends with including a full description in his report and leaving the question of acceptance to the home office.

The following signs and conditions are most important:

The Facies.—The facial aspect and general behavior of the applicant may occasionally afford some information. Bell's paralysis, if present, would only cause postponement of the risk until full recovery; but the examiner should make sure that the condition is a peripheral one, and not due to a central lesion or middle ear disease.

The Eyes.—Report inequalities of the pupils, and state whether they are unduly dilated or contracted. Marked inequality of the pupils may indicate the beginning of some disease of the nervous system. Slight differences in size may be congenital.

Abolition of the pupil reflexes and the presence of the Argyll-Robertson pupil are especially important danger signals, but it must be remembered that the degree of the light has a great deal to do with the activity or sluggishness of these reflexes, and they should therefore be tested in a bright light so that the pupils may be afforded a chance to respond promptly if they have the power to do so.

Feebleness of the reflexes seldom signifies anything of importance, but should, nevertheless, lead the examiner to look carefully for other signs of nervous disease.

Ptosis, associated with external strabismus and some dilation of the pupil, is dependent upon paralysis of the third nerve. Its most frequent cause is syphilis. Moderate bilateral ptosis, without the other manifestations just referred to, occur in hysterical and neurasthenic conditions.

The Tongue.—A fine tremor of the protruding tongue is usually found in the early stages of general paralysis of the insane, and is considered an important sign in this disorder by neurologists. This tremor is also often seen in alcoholism.

The Gait.—Always have the applicant walk across the floor so that the gait may be observed. It may give some indication of slight hemiplegia, locomotor ataxia or paralysis agitans and lead to further investigation.

Tremor.—Ask the applicant to extend and separate the fingers widely. The motions are then apparent. If a tremor is discovered, ascertain if it is due to organic disease, alcoholism, or mere nervousness.

If the handwriting indicates a tremulous hand, find out if it is due to one of the causes already mentioned or simply to illiteracy and lack of familiarity with the pen.

Patellar Reflexes.—When the knee jerk is really absent, rejection of the risk will usually follow. Failure to obtain the patellar reflex, however, is often the fault of the applicant or the examiner. The applicant should sit with the knees loosely flexed at a blunt angle, with the muscles relaxed. When the subject is stout or heavily muscled, a better result may be obtained by having him sit on a table with the legs hanging loosely. If no contraction is obtained on striking the tendon, have the applicant lock the fingers of the hands together and give a quick pull upon them and then let go at a given signal. As the examiner gives the signal he should strike the patellar tendon at the same moment. Through this simple stratagem the applicant's mind is diverted and he relaxes the muscles of the thighs and legs which had previously been held too rigid.

The exaggerated knee-jerk may occur in the early stages of peripheral neuritis and of lesions of the spinal cord. It is also found in more advanced cases of nervous disease which would not be likely to come before an examiner for life insurance. It should be kept in mind that the knee-jerk may be somewhat exaggerated in nervous subjects and signify nothing abnormal.

Babinski's Reflex.—This important sign should be looked for when the examiner suspects some nervous disorder. Bare the applicant's foot and draw the blunt end of a pencil along the inner side of the sole from heel to toe with moderate pressure. If the great toe cocks up toward the shin, Babinski's reflex is present and may mean serious organic disease of the upper motor neurons.

Romberg's Symptom.—Test the power of the applicant to balance, by asking him to bring his feet together toe to toe and heel to heel, and to close his eyes. Inability to preserve his balance is a valuable sign in early tabes.

Occupation Cramps.—The most familiar of these is the troublesome "writer's cramp." They should not be a bar to insurance, although it is advisable to report them to the home office with full particulars after more serious disorders have been excluded by the examination.

DECREASING BIRTHRATE IN FRANCE AND GERMANY.

THE decrease in the birthrate in France has recently attracted much attention, and in Germany also the latest statistics show a marked decline in the birthrate as compared with previous years. The deathrate per 1,000 has always been and always will be a factor of prime importance in insurance work from the medical standpoint, and the birthrate of a country must also be taken into account when we review the expectation of life. This falling off in the birthrate of a country has a more profound influence on the race of people in the country

than on the actual population, and as the deathrate of the various races varies at different ages, we may see how a decreasing birthrate will inevitably affect the deathrate and also the expectancy of life of the inhabitants of the country.

In France during 1911 the deaths exceeded the births by 34,869, the number of liveborn children being 742,114, against 776,983 deaths during the same year. In England the births exceeding deaths per 10,000 during 1911 numbered 115, in Germany 141, and in Italy 112, so that in France the falling off is very marked. Although the births outnumber the deaths in Germany, still the birthrate is steadily decreasing, and this decrease has been more noticeable during the past few years. In 1870 the German birthrate was 42.6 per 1,000, whereas in 1910 it was only 30.7 per 1,000, or a fall of 11.9 per 1,000 in 34 years. The German government will shortly hold an official inquiry into the marked decrease in the birthrate, as the "population problem" will become acute if such decrease steadily advances.

As pointed out above, it has been shown that in spite of the decreasing birthrate in a country the total population goes on increasing though the "race" of the country is decreasing. Immigration explains this fact, and France may be cited as an example. In 1900 the population of France was 38,900,000, with 827,297 births; in 1908 the population had reached 39,267,000, whereas the births only numbered 791,712. Immigrants in France settle chiefly in the large cities, but the decreasing birthrate occurs in the country districts more than in the large towns; thus again we see that real race suicide is actually proved, and the proof also confirmed.

Gastric Adhesions as a Cause of Sudden Death.—G. H. Winch reports the case of a coal miner, aged 34, who, while lifting a large piece of coal into a truck, was knocked backwards against a timber prop, injuring his back and left side. He was unable to resume work. Two hours later the author found him lying on his back on a couch, with his legs drawn up. He complained of pain in the abdomen and across the back below the shoulder blades. He did not look seriously ill. His pulse was 98, his temperature 97° F., and his respirations were 20. There was no vomiting or hiccough. There were no marks of injury on the abdominal wall, which moved well with respiration, and there was no distention. On palpation there was some tenderness in the umbilical region, but no rigidity. Percussion revealed nothing abnormal, and there was no evidence of free fluid in the abdominal cavity. On his back there were some scratches and a bruise 2 inches in diameter immediately below the inferior angle of the left scapula. No ribs were broken, nor was there any injury to the spinal column. Careful examination of the circulatory, respiratory, urinary, and nervous systems revealed nothing abnormal. During the next four weeks there were no untoward symptoms or signs detected, and apparently the case was pursuing a favorable course. At the end of this period the man was very anxious to return to work, and did so against his physician's advice. In the course of his first morning at work he told his companions that he "felt better than ever before." Shortly after mid-day he suddenly fell down dead. This man had received compensation during his period of incapacity, and the question now arose, was his death due directly or indirectly to the accident or to a natural cause? By order of the coroner a post-mortem examination was made. In the abdomen small recent adhesions were found between the stomach and spleen, and between the stomach and the pancreas. The pancreas showed evidence of recent inflammation of its posterior surface opposite the spinal column. Nothing else abnormal was found in the body, though a very full and complete examination was made. The coroner's jury returned a verdict to the effect that this man's death was due to the accident. Its suddenness was probably due to a reflex stoppage of the heart, owing to the stomach dragging on the adhesions. The case brings out two points: (1) Care must be taken in dealing with accidents, even when apparently not serious, in view of the difficulties that may arise in regard to compensation. (2) It is important to keep full notes, not only of the injuries, but also of the general physical condition of the workman. For instance, in this case a thorough clinical examination was made when the patient was first seen, and this enabled one to state definitely that he had no organic disease likely to cause sudden death.—*British Medical Journal*, July 20, 1912.

Dwelling and Tuberculosis.—Beschorner says that tuberculosis is a disease that is but rarely spread by heredity, but mostly by infection from man to man. It is primarily a disease of children, the infection usually occurring in childhood, though evidences of it may not become manifest till adult age. There are two factors in the causation of tuberculosis in any person: first, diminished resistance to infection; second, exposure to infection with tubercle bacilli. The constitutional diminished resistance may be congenital, or it may be due to the action of external factors, such as environment, sickness, puberty, childbirth, bad dwelling, too much work, poor food, etc. The source of infection is found almost exclusively in the sputum of tuberculous patients, and is dangerous because of careless methods of dealing with the sputum by the consumptive. The infection may take place through the droplets coughed out by the consumptive, or indirectly through the dust containing dry sputum particles.

All these premises show the close relation that exists between the dwelling and tuberculosis, for the conditions favorable or inimical to infection depend upon the character of the dwelling and of its inhabitants. Beschorner says that tuberculosis is not a disease of "outdoors," but of closed spaces used for living or working. The morbidity of this disease is parallel to density of population, especially in the poorer classes. Of course, high rent is responsible for overcrowding, which results in nests of tubersulosis, but the intelligence of the people has very much to do with the proper or improper use of the facilities they command, however modest these may be. Tuberculosis is a disease of children, and the most dangerous condition is found where a tuberculous adult lives in an unhygienic dwelling crowded with children. Especially dangerous is the practice of having adults share their beds with several children. The duty of officials and other persons interested in the welfare of the poor is to fight such conditions and to instruct the poor in the proper utilization of their means of existence. Especially should attention be paid to instil a knowledge of hygiene into children, for only the formation of proper habits in childhood insures proper habits later.—*Zeitschrift für Versicherungsmedizin*, Vol. V, No. 4.

Book Reviews.

DISEASES OF THE EYE. A MANUAL FOR STUDENTS AND PRACTITIONERS. By J. HERBERT PARSONS, D. Sc., M.B., B.S., F.R.C.S., Ophthalmic Surgeon, University College Hospital; Surgeon Royal London (Moorfields) Ophthalmic Hospital; Late Ophthalmic Surgeon, Hospital for Sick Children, Great Ormond Street. Second Edition. Price $4.00 net. Philadelphia: P. Blakiston's Son & Co. 1912.

THE second edition of Parsons' work is a very excellent book for the student. It constitutes a volume of 684 pages, is well printed and illustrated. The work is written by one who is abundantly qualified both from the standpoint of the pathologist, the laboratory worker, and of the clinician. It is elementary, but is well calculated to give the student a proper start in the study of ophthalmology. The text is couched in simple language, is direct, and the subject matter is presented in a very pleasing style. The author does not attempt to mention extremely rare conditions and diseases, nor does he describe the more unusual operative procedures. Section I. Anatomy and physiology, well presented. Section II. Examination of the eye. Sec. III. Diseases of the eye in logical order. This is followed by a section on errors of refraction, disorders of motility, and diseases of the adnexa of the eye. Appendices devoted to preliminary investigation of the patient, therapeutic notes, and requirements of candidates for admission into the public service (Great Britain) conclude the text. This is one of the best ophthalmic text books in English for the undergraduate in medicine.

L'OPHTALMOLOGIE DU PRATICIEN. Par le Dr. A. CANTONNET. Ophthalmologiste des Hôpitaux (Hôpital Cochin). Avec 50 figures. Price 2 fr. Paris: Librairie O. Berthier, Emile Bougault, Successeur. 1912.

THIS small volume of 112 pages is intended to inform the general practitioner in regard to conditions of the eyes which he should recognize and to which he might apply emergency treatment. A brief chapter on the anatomy and physiology of the eye is followed by a chapter on examination. Sixty pages are devoted to an extremely brief description of the diseases of all parts of the eye. A chapter on semeiology and a few pages on emergency surgery and bandaging complete the volume.

DIE ENTSTEHUNG DER KURZSICHTIGKEIT. Von Dr. GEORG LEVINSOHN. Privat-fur Augenheilkunde an der Universität, Berlin. Mit 3 Abbildungen im Text. Price 2.50 mark. Berlin: Verlag von S. Karger, 1912.

THIS monograph is devoted to a careful analysis of the various theories regarding the development of myopia and an attempt to point out the cause of the changes that take place in the establishment of this condition. The reasoning, based on original experimentation as well as on a thorough knowledge of the theories and research of others, is logical, and the conclusions are fairly convincing. The article, which forms a pamphlet of 88 pages, is a valuable contribution to our knowledge of the subject.

MANUAL OF SURGERY. By ALEXIS THOMSON, F.R.C.S., Ed., Professor of Surgery, University of Edinburgh, Surgeon Edinburgh Royal Infirmary, and ALEXANDER MILES, F.R.C.S., Ed., Surgeon Edinburgh Infirmary. Volume First. General Surgery. Fourth Edition, Revised and Enlarged. With 297 illustrations. Price $3.50. Edinburgh, Glasgow, and London: Henry Frowde and Hodder & Stoughton, 1912.

THIS is an age of concise textbooks dealing with matters medical and surgical. The book before us is the first volume of the fourth edition of a series of volumes treating of surgery on the above lines, rendering them useful to the practitioner and the student. Than Messrs. Thomson and Miles few are better adapted to attain this object, both from the standpoints of knowledge of surgery, practical and theoretical, and from literary ability. This edition differs little in essential features from the last edition, save that the general arrangement of the work has been somewhat altered. The illustrations are numerous and good, and the volume is excellent from all points of view.

AUGUSTUS CHARLES BERNAYS: A Memoir. By THEKLA BERNAYS. Price $2.00. St. Louis: C. V. Mosby Co., 1912.

THE story of Dr. Bernays' life is here told by his sister in a simple, straightforward manner that makes the book charming reading. She has wished to paint a faithful portrait of her brother, so that the outside world may see him in his true light, *i.e.* as a man of generous impulses, a strong lover of truth, a really great surgeon, and the possessor of many natural qualities which his education at the University of Heidelberg brought into active and successful play throughout his entire career. Thekla Bernays in her portrait brings out all these characteristics of her brother with remarkable fidelity.

LE LABORATOIRE DU PRATICIEN. Analyse Clinique. Méthodes et Procédés. Guide de Diagnostic et d'Hygiene Prophylactique des Maladies Communes, Exotiques, et Tropicales. Par PAUL GASTOU, Chef du Laboratoire Central et de Radiologie de l'Hôpital Saint-Louis. Avec 18 planches contenant 102 figures et photographies en Noir et Couleurs. Par LOUIS NICLET, Dessinateur Photographe du Laboratoire Central de l'Hôpital Saint-Louis. Premier Fascicule. Price 3 francs. Paris: A. Poinat, 1912.

THIS very interesting pamphlet is the first installment of a work which is to be completed by the appearance of two more parts. Gastou's object is to present a purely technical guide for the practitioner who is dependent entirely on his own resources for all his laboratory work, and in this first section he describes the general equipment required and the stains, reagents, optical appliances, etc., needed for examining the hair, skin, and cutaneous excretions in all the disorders of the epidermis and its appendages. The method in which the plan of the work is carried out is decidedly novel, tabulation being largely resorted to in order to convey information conveniently and concisely. A very large number of illustrations, many of them colored, are incorporated, and particular attention is devoted to figuring and describing the use of the dark field microscope. While not sufficiently detailed to replace the larger works on diagnostic methods, the little book is decidedly valuable, and there are probably few workers who could not glean useful hints from its pages. The succeeding sections are to be devoted to the blood, parasitic diseases, the urine, tumor diagnosis, and serological methods.

KURZGEFASSTE ANLEITUNG ZU DEN WICHTIGEREN HYGIENISCHEN UNTERSUCHUNGEN. Von Dr. med. BERNHARD FISCHER, o.o. Professor der Hygiene, Direktor des hygienischen Instituts zu Kiel. Für Studierende und Arzte, besonders an Untersuchungsämtern tätige, auch Kreisarztkandidaten und Kreisärzte. Zweite umgearbeitete und vervollstandigte Auflage. Price 5.60 marks. Berlin: August Hirschwald, 1912.

THIS book presents as a second edition in one volume two separate guides devoted respectively to chemical and to bacteriological methods which Fischer had used in his courses at the Hygienic Institute in Kiel. It is intended to serve as an outline of the laboratory work to be done by students and also as a reference guide for workers engaged in carrying out actual work in biochemical and bacteriological fields. It is excellently adapted for both purposes, and contains an immense amount of material in condensed form. An especially praiseworthy feature is the minuteness with which all the apparatus, reagents, etc., required for each investigation are described, and the systematic use of cross references by means of which much paper and ink are saved. The sections on soil, air, water, light, and foodstuffs are noteworthy for containing many methods and details not ordinarily found in similar books.

OUTLINES OF GENERAL AND SURGICAL NURSING. By WINIFRED FREDERICK LINDSAY, Superintendent of the Training School for Nurses of the Paradise Valley Sanitarium, National City, Cal. Loma Linda, Cal.: The College Press, 1912.

THIS little book contains the essentials of nursing. It could well be used to save nurses the drudgery of taking notes of lectures, and if so used would doubtless result in a better understanding of the subject. The work is divided into three parts, dealing respectively with general nursing, surgical nursing, and solutions. The book is well arranged and well printed, and the information given is judicious and reliable.

PROGRESSIVE MEDICINE. A Quarterly Digest of Advances, Discoveries, and Improvements in the Medical and Surgical Sciences. Edited by HORART AMORY HARE, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College, Philadelphia. Assisted by LEIGHTON F. APPLEMAN, M.D., Instructor in Therapeutics, Jefferson Medical College, Philadelphia, June 1, 1912. Price $6.00 per annum. Philadelphia and New York: Lea & Febiger, 1912.

THE present number contains a section on Hernia by W. B. Coley; one on Surgery of the Abdomen, exclusive of hernia, by J. C. A. Gerster. Then follows J. G. Clark's chapter on Gynecology containing, as usual, a most valuable summary on cancer. The section on Diseases of the Blood, Diathetic and Metabolic Diseases, Diseases of the Thyroid Gland, Nutrition and the Lymphatic System, is by A. Stengel; and that on Ophthalmology, by E. Jackson. This useful publication has been so often noticed here that an extended review is unnecessary.

Society Reports.

BRITISH MEDICAL ASSOCIATION.

Eightieth Annual Meeting Held at Liverpool, July 23-26, 1912.

(Special Report to the MEDICAL RECORD.)

THE PRESIDENT, SIR JAMES BARR OF LIVERPOOL, IN THE CHAIR.

The meeting consisted of two distinct divisions, the political and scientific. The former is a meeting of the Representatives, the latter that of the Sections.

REPRESENTATIVE MEETINGS.

The Insurance Act.—The meeting of Representatives was held in advance and extended from the 19th to the 23rd. It was occupied chiefly with the Insurance Act trouble, and some drastic resolutions were passed after long discussions on Friday and Saturday. These came up for the report stage on Monday and were passed on to the general meeting on Tuesday afternoon, after a confirmation meeting on that morning. The first of these was the definite rupture of negotiations with Mr. Lloyd George, expressed regret that terms of cooperation with the profession had not been acceded to, and Resolved, "That the Government be informed that the association adheres to its minimum demands as formulated in the letter of February 12, and since elaborated in interviews with the Chancellor of the Exchequer."

The next resolution called on all members who had joined advisory committees in connection with the Act to withdraw from those bodies. This resolution did not apply to Ireland. As is well known, certain portions of the Insurance Act do not apply to Ireland..

The question of sanatorium benefit was considered on a different footing and was warmly discussed on Monday. Two points put forward for differentiating were (a) that it affected all the medical officers of health in the United Kingdom, and to call them out was impracticable unless absolutely necessary; (b) to prevent the sanatorium treatment being set up would be undesirable in the interest of humanity.

These questions were vigorously debated, and an additional meeting of the Representatives was held on Wednesday afternoon. Final resolutions were then adopted to submit to the general meeting, including these points and various other items. The resolutions ultimately agreed to were that

"The association calls on all practitioners to refrain from applying for, or accepting any post or office of any kind in connection with the National Health Insurance Act, except in regard to sanatorium benefit, provided it is carried on in accordance with the wishes of the association, until such time as the Government has satisfied the association that its demands will be met."

The following rider to this was approved: "That before any practitioner undertakes any work in connection with the sanatorium benefit, the conditions and duties of such appointment shall be submitted to the council for its aproval."

It was further agreed that the resolution shall not preclude medical officers of health from giving advice to public bodies in their official capacity, and that meanwhile all steps be taken to perfect the organization of the profession in the event of the Government not carrying out what is asked for. The main resolution was carried by 117 to 22 votes.

With regard to the constitution and working of tuberculosis dispensaries, it was resolved that the chief officer should be a whole-time official and confine himself to diagnosis and consultation, and that the rest of the staff should be local practitioners, the patients to be introduced by the medical attendant, the dispensary to be independent of voluntary hospitals, and local practitioners have representation on the committee. It was further considered that cases duly diagnosed and confirmed should only be treated in connection with the sanatorium, that the medical officers appointed should not be dismissed without proper notice, and that resignations of contract practice should be sent in as early as consistent with terms of engagement and the pledge. Reports and suggestions as to fees for various services, as to the organization of a public medical service, and the numerous proposals received from all parts of the Kingdom were referred to the general council for proper consideration and decision.

GENERAL MEETINGS.

Tuesday, July 23—First Day.

The annual general meeting of members took place on Tuesday afternoon, when much formal business was transacted. The outgoing president, Professor Saundby, retired from the chair, and introduced his successor, Sir James Barr, investing him with the chair and insignia of office amid the cheers of the large assembly. Professor Saundby congratulated his successor on his election, and said he was sure he would maintain the dignity of the office.

Sir James Barr, who was enthusiastically received, said he regarded it as the highest distinction to be the titular head of a society of 25,000 members of his own profession; not only so, but a position of responsibility to maintain the high tradition of the office which it would be his earnest endeavor to do. In the past year, he said, the good ship of the association has sailed through troubled waters, and though buffeted by powerful waves is nearing now a harbor of refuge. He had freely expressed his opinion of the Insurance Act and in "fairly forcible language" (laughter and cheers), but not in an official capacity, not wishing to influence those who would have the working of the Act, as he would himself have nothing to do with it. But he was pleased to see the general trend of opinion veering to his own views. He opposed the bill which had become an act on public grounds. He considered it the most gigantic fraud on a confiding public since the South Sea bubble (laughter and cheers). Both frauds were largely engineered by Members of Parliament. The earlier one was soon pricked, but already so many vested interests have been created it will be difficult to get rid of the present fraud. Just think what any intelligent being might do for the health of the nation with £30,000,000 a year! The only people likely to benefit by this fraud are a lot of officials who should be earning an honest livelihood. At present he urged you must look after the immediate requirements of the profession, which has been attacked by the monstrosity. We have long been advocating a new medical act, more needed by the public than the profession, but have been thwarted by vested interest which must be brushed aside. In conclusion he bid all a hearty welcome and wished them a happy return to their homes, adding "If I may offer you any advice, I should like to do so in the words of Norman MacLeod,

> 'Trust no party, sect, or faction,
> Trust no leaders in the fight,
> But in every word and action
> Trust in God and do the right.'"

The President resumed his seat amid deafening cheers.

Dr. McLean moved and Dr. Goff seconded a vote of thanks to the retiring president, Dr. Saundby, who in response expressed confidence that their new president would foster the growth of the association.

The President-elect for 1914, Dr. Hollis of Brighton, was then introduced to the meeting

Dr. Barrett of Melbourne invited the members to attend the Australasian Medical Congress to be held in New Zeland in 1914. This invitation was supported by Dr. F. A. Pockley of New South Wales and Dr. C. E. Todd of Adelaide.

The Chairman of Council took the chair at this point, and on the question of increasing the salary of auditors an amendment was moved by Dr. Brierley and seconded by Dr. Haddon, which led to a hot and somewhat disorderly discussion. It was pointed out that £67,000 had been received in the year and spent, and more too. The freehold building, valued at £86,000, was unencumbered ten years ago, but was now security for £46,000 which had been borrowed. The speakers were interrupted as they declared the financial condition unsatisfactory and the management unbusinesslike. Much impatience was shown at the contrast drawn between the present and former state, and the question put why increase the pay of auditors when they were bankrupt. So much opposition was shown that one speaker sat down remarking that he regretted to have detained them a few minutes from their "miserable trade union work." The amendment was defeated by an overwhelming majority.

In the evening there was a very large audience at the presidential address, as many members donned their academical robes for the occasion, but it was reported that the gathering would have been still more brilliant but for an accidental miscarriage of about 200 doctorial gowns, which had been carried off to another station.

The evening's proceedings opened with the presentation to Sir James Barr of a replica of the President's

badge, but as the new President was already wearing one of these jewels, the badge was handed to Lady Barr, the only woman given a seat on the platform.

A number of Colonial and foreign guests were then presented to the President, among them representatives from San Francisco, Chicago, Paris, Berlin, Hamburg, Manilla, Yucatan, Bombay, South America, Australia, Guiana, China, Canada, Trinidad, Gibraltar.

President's Address.—After formally welcoming members and visitors to Liverpool, Sir James Barr delivered the presidential address, taking as his subject: "What Are We Doing Here? Whence Do We Come? Whither Do We Go?" This subject, he said, had been suggested to him by Henri Bergson's Huxley lecture on "Life and Consciousness." Without following any philosophic disposition as to how life and consciousness permeate matter and as to how they were started on their evolutional career by an original impetus, it occurred to him that these questions might be very appropriately asked of the medical profession: "What are we? Can we show any sufficient *raison d'être* for our existence? Are we of sufficient value to individuals and to the State to justify our continued existence as a profession? Is the world any happier for our presence? Are we really an advantage to the higher evolution of the race?" No doubt all these questions would be readily answered by them in the affirmative and the vast majority of the thinking public would also acknowledge the utility of their existence in society as it was at present constituted, though there might be some difference of opinion as to their value. During the last century or more they had been very busy trying to find out the causes of disease, the best method of their elimination, and the proper treatment of their patients. They had to a large extent succeeded. A selective death rate which was Nature's method of eliminating the unfit had been at least partly suspended by their efforts. Perhaps the majority of the medical profession would readily accept the view of Bergson "That adaptation to environment is a necessary condition of evolution. It is quite evident that a species would disappear should it fail to bend to the conditions of existence which are imposed upon it. But it is one thing to recognize that outer circumstances are forces evolution must reckon with, another to claim that they are the directing causes of evolution. This latter theory excludes absolutely the hypothesis of an original impetus—I mean an internal push that has carried life, by more and more complex form, to higher and higher destinies." How far the human intellect might succeed in unraveling many of the mysteries of life he could not at present say, but he had no doubt that in this process of evolution the human intellect would be carried to a much higher plane than that to which it had at present attained. It was their duty as medical men and as citizens of a great empire to move in the path of progress, and in every possible way to encourage the higher evolution of the race. Huxley said life as we knew it was inseparably connected with protoplasm; it was therefore important that they should see that the highest form of protoplasm, that capable of starting the individual life, the germ plasm, should be of the highest order. Natural evolution, and the evolution of the art and science of medicine, ran on different lines. Nature was lavish in the production of life and prodigal in its destruction. The process of adaptation meant elimination of the unfit. Medicine, on the other hand, had been evolved for the benefit of individuals. They had successfully interfered with the selective death rate, but they had made no serious attempt to establish a selective birth rate so as to prevent the race being carried on by the least worthy citizens. They had often joined forces with self-constituted morals in denouncing the falling birth rate, and had called out for quantity regardless of quality. They readily forgot the futility, as long ago pointed out by John Stewart Mill, lay at the basis of all morality. They were apt to forget that a high birth rate was practically always associated with a high death rate; this is Nature's method, a method which had always produced a fine race. Nature's method was too crude and barbarous, and as man rose superior to Nature and obtained more control over her laws such barbarities were replaced by more human methods. They felt compelled to preserve every human being, no matter how imperfect his intellectual and physical development. The object of their professional existence, therefore, had hitherto been the prevention and cure of disease, the alleviation of human suffering, and the prolongation of life. However, many of the higher and more intellectual minds in the medical profession had ever refused to be bound within such narrow confines. They had studied humanity, and considered how best to raise it to a higher plane and to improve the ancestral patchwork which in many families showed some scars. There was a growing consciousness among the more intellectual members of the community that the present state of matters must not be allowed to continue. They must raise up a vigorous, intelligent, enterprising, self-reliant, and healthy race. If this achievement was to be accomplished they must begin with the unborn. The race must be renewed from the mentally and physically fit; the moral and physical degenerates should not be allowed to take any part in adding to the race. Above all, they must breed for intelligence. The laws of heredity should be widely taught so that those with hereditary blemishes might consider their moral responsibility of bringing children into the world. The speaker said that he knew that in expressing these views he was coming into direct conflict with some of the churches, but they forgot the saying of Jesus of Nazareth that it would have been well for this man if he had never been born. It was the duty of medical men not to pander to the selfish gratification of the individual but to point out to every one his positive and negative duties to the race. The time was now ripe for dealing with mental weaklings, and they would be effectually dealt with in all progressive nations. The advanced thought of the intelligent portion of the community would demand something more than treatment from the medical profession. This would place physiology on a higher plane than pathology. There were as yet none of their medical schools sufficiently equipped for this teaching, which was bound to come; advanced physiology and biology must lead the way. After reviewing the great advances of modern times with regard to the prevention and treatment of infectious diseases and the improvements which had been effected in sanitation and hygiene, the speaker proceeded to sketch some of the lines along which progress must proceed, and in doing this he dealt with some of the functions of the human body, taking first the nervous system. He followed out the evolution of the nervous system and the higher evolution of the intellect, looking at it both from the physical and metaphysical standpoint, and concluded that it was the higher evolution of the intellectual grades of society that were required in the present day. If the moral, intellectual, and physically well-developed members of the community were to have a fair chance of development, their energies must not be entirely dissipated in providing for the progeny of wastrels. Reproduction must proceed from the most worthy, but when the quality was good they could not have too much of a good thing. As Dr. Inge, the Dean of St. Paul, recently said, "The great menace to our civilization was not so much the stationary birth rate as the great increase among the poor and ill-fed population of their great town." Our progress might depend on the forces of civilization being able to overcome those of disintegration. During the last half century there had been not only an absolute but also a relative increase in insanity, and this increase was becoming more and more noticeable among decadent stocks. This class, although their average longevity was not great, were very prolific, and were not guided by any economic considerations. "The right to live" was not a doctrine held by any political economist, but one which had been forced upon them by the evolution of sympathy. However, they should not allow their indulgence to degenerate into license, and by gratifying their sympathies they had no moral right to leave a legacy of mental obliquity and of physical decadence to weight upon the next generation. The idea that insanity and genius were closely allied was in the main an ill-founded belief held by those who did not know what constituted a genius, or who ignorantly mistook eccentricities, or uncontrolled and ill-regulated mental activities for genius. He believed that the higher the intellectual evolution the greater the number of geniuses that were likely to be produced. There must be inherited innate qualities capable of development; a favorable environment would contribute to such development, but it could never create a genius. There was a tendency in the present day to devote more attention to the morbid manifestations of the brain than to the consideration of its evolution and development. The neuroses were studied more for their creation than for their elimination. Weird methods of study were encouraged, sensational and erotic tendencies were looked upon as natural rather than as, what they really were, degradation processes. With the elimination of tuberculosis a larger number of unstable nervous individuals reached the productive age, and hence a number of individuals were produced who early qualified for asylums. It was not any particular form of insanity which was inherited, but a neuropathic tendency which might eventuate in many forms of disease, and was often associated with disorders of the intellect. It was not alone the defects, but also the stability and

higher innate qualities of the brain which were inherited, and these higher qualities were capable of enormous development. Some of our educational authorities seemed to believe the brain to be like a piece of elastic which could be stretched out at the will of the educator, and that all individuals with equal opportunities should develop alike. They were not aware that, although brains are composed of the same ultimate elements, the quality was variable, and some brains were not even educable. Ignorance of this fact had led to the plan of affording equal opportunities to all, opportunities of which the vast majority could not make use, and it cost the country an enormous amount of money which was absolutely wasted. The feeble-minded should be dealt with in the most humane manner, either by sterilization or segregation. It was for the nation to decide which method should be adopted, but the latter would comport best with the general feeling of the community. After discussing the relation of mental activity to bodily help, and showing that mental work was more easily accomplished when there was a basis of sound health, the speaker proceeded to discuss diseases of the heart. He said that those who were fond of posing as authorities in such matters preferred waiting for the development of the disease, and were then quite prepared to give a learned disposition on the various arrythmias. When they had made a graphic illustration of the sequence of events, they vainly imagined that the problem was solved. A clear comprehension of the physiology of the heart was of much more importance for a right understanding of the working of that organ in health and disease than any amount of pathology. When it was more generally recognized that free calcium ions were essential for the continued contraction of the cardiac muscle, and that it was necessary to maintain a difference in electrical potential between the salts in the cell and those in which the muscle cell was bathed, then the methods of maintaining the healthy functions of the heart would be better understood. When it was more generally recognized that chronic degenerative lesions of the heart and arteries usually arose from causes acting on the periphery they would be better prepared to deal with such lesions when they occurred, and what was of much more importance prevent their occurrence. What was the good of measuring arterial blood pressure if one was not alive to its importance and not prepared to analyze its significance and regulate its effects? Pseudo-scientists were prone to think that when research became practical it ceased to be scientific. The speaker then called attention to recent advances in chemical biology, through which they had become acquainted with the marvelous effects which the secretions of the ductless glands had on the mental and physical attributes of the human body. In illustration, he referred to myxedema, exophthalmic goiter, diseases of the pituitary and suprarenal glands, the simple and malignant diseases of the mammary gland and the prostate, and expressed the opinion that the problem of preventing such occurrences would soon be solved. Even the surgeons were beginning to recognize that appendicitis was largely a preventable disease, and that mucous colitis, dysentery, and infantile diarrhea were more easily prevented than cured. The increased prevalence of malignant diseases of the alimentary tract was due, as was pointed out by Metchnikoff, to stagnation—a warning that everyone should take to heart. The speaker then referred to Dr. Albert Abrams as that versatile genius who had come all the way from San Francisco to do honor to this meeting of the British Medical Association,and who had taught them how best to cure intrathoracic aneurysm, and had shed light on the nature of cardiac and respiratory reflexes. Thus we had come from Hippocrates onward with a long tradition of healing, but the question was whither were they going? The path of progress which he had tried to point out would in the future devolve on such great associations as the British medical associations, which had no selfish interests to serve, but which had only the dignity of the medical profession and the welfare of the public at heart. One often heard statements to the effect that the general medical practitioner was doomed, but in the speaker's opinion the future of medicine would rest with enlightened and highly educated general practitioners, men who would look after the health of the community, who would see that mechanism of a high order was produced, and who would see that the machinery of the individual was properly lubricated and not subjected to any unnecessary friction or strain. The enlightened public would look to their medical attendants as guides, philosophers, and friends, both in health and disease. They must recognize that the outlook of the medical profession, though at present somewhat dismal, was merely a transition stage which would soon pass away.

Wednesday, July 24—Second Day.

This day the several Sections began their work, but were more sparsely attended than usual. This might be partly from their number and partly because other matters were still unsettled, and various amusements and other amenities were to the fore. A council meeting began at 9 A.M., at which hour a special service was held in St. St. Luke's Church, and another in the Roman Catholic pro-cathedral.

There was also a meeting of Catholic medical men to consider the eugenic proposals that have been put forward, and the question of the feeble-minded. This meeting adopted a resolution unreservedly condemning the sterilization of the unfit and proposing as a remedy a a partial approval of segregation. It was further recommended that the causes of mental deficiency should be studied in relation to defects of social organization. Numerous light attractions entered into the program for this day. But the chief event was

Address in Medicine.—Dr. G. A. Gibson, physician to the Royal Infirmary of Edinburgh, delivered this address, taking as his subject "The Relations of the Circulation." The orator remarked that modern physiology had its birth in the central facts of the circulation, and the many researches upon it in our epoch, the age of scientific medicine, had given ample proofs of earnestness in the search. In all the higher animals the circulation might be regarded as based upon, or concerned with, four primary groups and principles. It was based upon mechanical arrangement as the foundation for all its operations: it required chemical action, by which it was maintained and for which it provided possibilities by transference of matter; it was modified by glandular secretions, which profoundly affect its mechanism and chemical action; it was affected by nervous agencies which further profoundly influenced the performance of its functions. Many stages of being in the evoluton of the mammal, he went on, were analogous to phases of life in the development of its several representatives. It was not necessary to insist on the divergencies between infantile and adult life as regards size and weight, but it might be well to linger over certain functional deviations. The heart of the baby in relation to the weight of the body was much larger, almost double. More striking was the frequency of the heat, from 130 to 140 per minute. The whole circuit of the blood was, therefore, traversed in much less time, rather more than half. It followed that the blood was renewed in the baby's tissues with increased rapidity. The total quantity of blood, compared with body weight, was considerably larger in the baby than in the adult; and as the respiratory work, although increasing absolutely with the body's growth, was nevertheless relatively greater in early life, the absorption of oxygen was much more active than the production of carbonic acid. As a result, metabolism was extremely active within a few days of birth. As old age advanced there was a gradual weakening of the muscular and nervous apparatus with interesting external and internal changes. The metabolic activity which in youth not only met the waste, but added new material, and in adult life balanced the demand, became so impaired as to be no longer able to entirely sustain the frame. Probably every tissue participated in these retrogressive metatamorphoses, but there was no doubt that the glands, the heart, and vessels played the most important part. Were they yet in a position to decide whether the messengers which carried the impulses to the vessels and tissues were chemical or nervous? Clearly it was not through the direct action of the nervous system. It was recognized that nervous influence affected mammary secretion, but this was probably indirectly rather than directly. Simple arrest of development, antenatal or postnatal, might produce dwarfism; on the other hand, accelerated development might in both phases of existence be the first impetus towards gigantism. Whether such effects were due to an inherent tendency in the tissues, direct or indirect, no man could say. The employment of thyroid extract in myxedenia influenced blood distribution and nutritive possibilities in the most powerful manner. In youth lack of growth was common enough in both sexes. Occasionally they found children, still more frequently youths, stunted in growth, but excellent in form. The son of a medical friend of his was in his eighteenth year 1 inch below 5 feet in height; the had set his mind on entering Woolwich, for which his only chance was six months ahead. The family turned to the speaker in deep distress, feeling that a growth of 4 inches in six months was like adding a cubit to the stature. By employing thyroid extract that youth grew 7 inches in the six months, and as he took one of the highest places in

the examination it was clear his cerebral functions had been in no way disturbed. Similar instances, though not quite so dramatic, had been under his care; but to be quite frank, he must confess that in some of these boys and girls the treatment absolutely failed to produce an effect. As to how these powerful effects were produced, he suggested that they invoked nervous influence, consisting of waves of molecular disturbance, and these brought about changes by liberation or by inhibition. The results of these advances must enhance their hopes of even more valuable additions to their knowledge, both theoretical and practical, at a date not far distant. They opened a vista of infinite possibilities in the explanation of normal functions, the comprehension of morbid processes, the management of diseased conditions. Dr. Gibson said in conclusion: "If we may not witness in our own time the ends for which we have struggled, we have the consoling prospect that our successors will behold what we have longed to see. In the meantime let us in all our doings walk along the path of safety through accurate observation and unprejudiced investigation, wielding fearlessly the spear of Ithurial in defense of external truth."

Thursday, July 25—Third Day.

The proceedings of this day were very diversified. The Sections began their sittings, providing the scientific and practical work, while several events and entertainments afforded lighter enjoyment.

Temperance Breakfast.—The day opened with the breakfast given by the National Temperance League, at which there was a large attendance, and interesting views were expressed by Sir James Barr, Professor Mott, and others. The chair was taken by Mr. Alexander Guthrie, who said these breakfasts afforded an opportunity of bringing before people who more than most had the power of influencing their fellows in regard to alcohol and its dangers. Abstainers or not, they must recognize what a factor alcohol was in the national life and how extremely important it was for right views to be formed about it. He spoke of the state of Liverpool in this respect twenty years ago, and the steady administration of the laws which had led to a diminution in the city of the number of public houses by 800. Still much remained to be done and it behooved them to continue the fight against this great contributory curse of crime, disease, and misery. Sir James Barr said he practically never prescribed alcohol now, for people were too ready to prescribe for themselves too much. He knew of no disease from which patients would get on better with than without it. People were more temperate now than ten years ago, as might be noticed at public dinners. Professor F. J. Mott attributed much intemperance to the conditions of the poor. The problem was to improve their housing and other unhygienic environment. He would segregate the chronic inebriate as a danger to the community. The state should prevent disease and no better way of coping with it existed than to reduce intemperance.

Address in Surgery.—Mr. F. T. PAUL, consulting surgeon to the Royal Infirmary, said that he preferred to record his experience rather than extend his observations in a more general address. Accordingly he took as his subject "Personal Experiences in the Surgery of the Large Bowel," but limiting his remarks to procedures which have been advanced of late years and those in which he has had considerable personal experience, chiefly the following operations: Colotomy, short-circuiting, colectomy and excision of the rectum. These operations were needed to meet very different pathological conditions, though most of them ultimately presented the clinical feature of obstruction. Cancer accounted for more than all the rest put together, and the greater part of his remarks were concerned with cases of malignant disease. It was of paramount importance that surgeons should familiarize themselves with the characters of the different kinds of cancer met with in the various parts of the body, as so much depended upon the behavior to be expected from each kind. This was especially true of intestinal cancer, for in no other part of the body was there a greater variation in the degree of malignancy than in the bowel. The speaker expressed himself as quite convinced that cancer of the bowel might undergo spontaneous cure, and he rested this assertion upon the following grounds: (1) For over thirty years he had been removing these growths and submitting them to personal microscopical investigation. He was, therefore, very familiar with their nature and appearance. (2) Many cases having the minute structure of cancer had not recurred, though known to have been removed with an insufficient margin of safety. (3) Malignant disease of the bowel was rarely removed during the early stage, yet the percentage of cures was remarkably good. (4) The duration of life after colotomy for inoperable cancer of the bowel was often prolonged compared with that in other inoperable cancer cases, while a proportion of the cases seen, handled, and passed as malignant got well and the tumor disappeared. He then proceeded to discuss the three varieties of carcinoma of the bowel, the large soft fungating or encephaloid type, the small hard cirrhous type, and the infiltrating or colloid type. In considering the misconceptions regarding cancer, he said that some seemed to forget that "cirrhous" and "encephaloid" were merely terms of clinical or macroscopical significance, convenient when properly used, but otherwise very misleading. The really important misconception, however, concerned the relative malignancy of the three varieties of cancer. The encephaloid type had been regarded as the most malignant; the colloid as being intermediate and the cirrhous as the most benign. This arrangement was entirely wrong and out of accord with clinical experience. The colloid was the most malignant type, the ring stricture came next, and the fungating type was the least. It was a clinical fact of considerable importance that the up-growing forms of cancer were essentially less malignant than the down-growing, ulcerating, and shrinking type. After describing the histology of bowel cancer with the aid of illustrations he said that the most common sites for the fungating growth were the rectum and cecum, though it often occurred in the sigmoid, and occasionally any other part of the large bowel. Colloid cancer chiefly selected the rectum, and ring stricture the sigmoid, though neither were limited to these regions. If the surgeon when operating took the pathological details into consideration, they would often influence him considerably in his decision as to the nature and extent of the operation. Thus, if the growth was one of the fungating type, recognized by its softness, bulk, situation, character of gland infection, and so forth, he would on the one hand feel justified in removing the tumor without necessarily interfering with any tissue much beyond the visibly affected area; or, on the other hand, if the risk to life seemed too great to allow of this being done, he would be encouraged to hope for a reasonably long period of relief by short-cutting or colotomy. If the tumor proved to be massive and solid, and especially if there was evident glistening gland or peritoneal infection, or if the growth was in the rectum and could be felt as an abrupt hard edged ulcer, then the case was one of colloid cancer, and the outlook would be discouraging. In the case of ring strictures, always easily recognizable, the indication was to excise more widely than one used to think necessary, and to remember that in this type of growth they had the best reason for following up the path of lymphatic infection. These rules for guidance had come as the result of his practical experience, and he wished to say a few words regarding the clinical details which bore upon the same point. The first great line of demarkation in the clinical arrangement of these cases was the presence or absence of complete obstruction at the time they came under a surgeon's observation. In his earlier experiences complete obstruction with fecal vomiting and meteorism were regarded as necessary preliminaries to an application for surgical aid. So constantly fatal were all surgical operations for intestinal obstruction in those days that one thought very little of the objections to an artificial anus. Now, should any such feeling of objection encourage one to risk life for the sake of at once accomplishing a neat and clean surgical procedure? He felt sure that whenever there was complete obstruction in the colon a preliminary colotomy was by far the safest course in all those cases in which any form of internal strangulation could be excluded. The one class of case in which he always wished to make an exception was when the obstruction was actually at the ileo-cecal valve, and it was necessary to open the small bowel, and usually there were favorable prospects for short-circuiting in this situation. If, however, paresis and collapse had already supervened an artificial anus was imperative. Unfortunately, they were still without means for recognizing cancer of the bowel in its really early stages, except when it was located low down in the rectum. An *x*-ray screen view of the behavior of the bismuth meal was useful if its limitations were recognized, but in no circumstances could it indicate either the extent or the malignancy of the growth, nor could the ready passage of the bismuth meal be regarded as a contraindication to operation. If the diseases was within reach of the sigmoidoscope this instrument might be of considerable assistance in the diagnosis of growths situated in the pelvic colon. If the site of the obstruction was not rendered apparent by other means, the behavior of an anema might give useful information. When it was in the sigmoid region the bowel was irritable, and rarely tolerated

more than half a pint, which was rapidly returned. When higher up much more might be injected and retained. In all cases of complete obstruction of the large bowel, whether diagnosed by exploration or otherwise, and in which strangulation was absent, he advised colotomy in the first instance in preference to an internal operation. The only drawback to a colotomy under such circumstances was the increased time occupied before the whole proceeding could be completed; but since the one operation would very often prove fatal, and the two or three very rarely so, their patients would infinitely prefer the latter course if they understood the whole circumstance. In deciding as to where the bowel should be opened he thought that as a temporary proceeding one should always decide on a right lumbar operation. This was safe, satisfactory, and out of the way of the future abdominal section. He had tried this procedure on many occasions, and the more experience he had with it the more favorably it appealed to him. Whenever a colotomy was expected to be permanent, and the seat of the obstruction permitted, the left iliac operation should be selected. The operation was free *per se* from danger, and yielded the best results obtainable. Transverse colotomy was practically unnecessary and very rarely desirable. Right lumbar colotomy, on the other hand, had a wide field for useful application as a means of affording temporary relief in cases of complete obstruction of the colon below the cecum, and was a valuable method of treating certain cases of inflammation and ulceration of the colon. He had done colotomy upon sixty-eight patients in private practice during the past ten years. In forty-four of these there was no obstruction, or it was chronic in type, and all recovered. In twenty-four cases acute obstruction was present, and nine deaths occurred These were mostly in old people with vomitting (often fecal), meteorism, and collapse. It was interesting to note that eighteen of the cases of complete obstruction were met with during the first period of five years, and accounted for seven of the nine deaths, while in the remaining period there were only six cases with two deaths, showing that practitioners were recognizing the importance of earlier surgical treatment. It was also interesting to note that cancer of the rectum was the primary trouble in half the cases, and that his statement as to the long duration of life after colotomy for cancer was borne out. In regard to internal operations, after the obstruction had been relieved for a sufficient length of time to bear this procedure, the malignant growths were excised if possible; otherwise short-circuiting was the only available improvement upon colotomy. Tuberculous disease of the cecum might be excised, but the results were not satisfactory. For tuberculous ulceration lower down in the colon and rectum when severe the best surgical treatment was colotomy. Fibrous stricture varied much in their extent and position, and excision, sort-circuiting, or colotomy might be employed in accordance with the special conditions present in each case. The speaker said that he probably did a smaller proportion of short-circuiting operations than many other surgeons, and that in regard to this operation there were two points upon which it seemed to him that emphasis ought to be laid. One was that in cases of obstruction in which paresis of the bowel was present short-circuiting might fail to relieve, while an external fecal fistula would be successful. He, therefore, did not recommend short-circuiting operations in the presence of any severe form of obstruction such as was likely to be fatal without immediate relief. The other point was that he had had the best success when he had cut out of circuit the smallest possible amount of bowel. He, therefore usually short-circuited just around the growth or other obstruction. During the last ten years he had employed this operation in twelve of his private patients without mortality. In eight of these cases he had joined the ileum to the colon and in four colon to colon. However good the results of short-circuiting or colotomy might be, one must always wish to excise a malignant tumor of the bowel whenever circumstances permitted. The cecum and the sigmoid were the most favorable and fortunately the most frequent situations for tumors of the colon. The cecal operation was certainly the more extensive of the two, but on the whole these cases had done better, chiefly in the way of the cure being more permanent. Increasing experience had encouraged him to undertake the major operation in more cases of cancer of the colon, and in less cases of cancer of the rectum. His table of cases showed that he had undertaken colectomy on eighteen private patients during the last ten years. Only one died: this was a patient in which he had attempted primary suture and which otherwise would have been favorable. The remaining seventeen were done by the glass tube operation, and all recovered, though some of them were advanced in years. Of these seventeen cases three were non-malignant, and fourteen cancer. Of the latter eight are still living and not known to have recurrence; two have died from apoplexy and four have died from recurrent growth at 2½, 3½, 3½ and 7 years, respectively. In considering growths of the rectum he considered only those which called for excision. He had already expressed the view that a well-planned colotomy was not inconsistent with health and reasonable comfort, or with the pursuit of ordinary occupations. If this were more generally admitted some lives that were risked and lost would be saved. All cases of advanced cancer of the rectum, incurable fibrous stricture from syphilis or other cause, some recto-vesical fistulae, and some tuberculous or other ulcerations should be treated by colotomy. In regard to a preliminary colotomy it not only lessened the risk of operation, but it expedited healing, and he considered that for these good reasons it should be used with more frequency. A point in which his experience did not coincide with that of most surgeons was that regarding the value of retaining any portion of healthy bowel that might be situated below the disease. He had long come to the conclusion that an attempt to retain the anus with more or less of the lower end of the rectum was bad practice. However carefully one adapted the parts the resulting anus was rarely better, and often not so good as one placed high up at the top portion of the wound behind the sacrum. To be successful in this operation one must not only operate well and carry out the subsequent treatment with care, but one must also recognize that this was one of those serious undertakings for which a wide discretion must be exercised in the selection of suitable cases. From the age of 55 onward selection should be rigidly practiced. Operations for cancer of the rectum were, on the whole, less favorable than those on the colon. During the past ten years he excised the rectum for cancer in twenty-eight private patients. Two deaths occurred, one the double route operation in a male, the other a high resection in a female. Neither were good subjects. Of the twenty-eight thirteen were still living—1, 1, 2, 2½, 3, 3¼, 3¼, 5, 6, 6, 7½, 9, and 10 years. Twelve died from recurrence. The average duration was 13 months. One died from other cause. The speaker described in detail the various operations which he had used, calling special attention to the differences in technique in operating upon the male and the female in rectal excisions and to the value of retaining the bone, and illustrated his descriptions by means of pictures.

In the afternoon there was a choice occupation. A number of members took a trip up the river and were entertained to tea by the Mayor of Wallasey (Dr. J. A. Aldershaw. Another party visited the garden suburb at Waventree, where they inspected the houses being rapidly erected. Many are already occupied. The visitors were welcomed by two of the directors of the copartnership company which is developing the estate.

Annual Dinner.—In the evening came the annual dinner, held in the Philharmonic Hall, and generally pronounced to be the most brilliant entertainment of the meeting. Besides the profession, the guests included the civic notabilities of Liverpool, its culture and its commerce, the assembly numbering nearly 350. Fall palms adorned the orchestral platform, flanked with beautiful exotic plants.

Dr. Macdonald (Chairman of Council) proposed the toast of the "City and University of Liverpool," very appropriately united, for it happens that Lord Derby is Lord Mayor of the one and Chancellor of the other. His Lordship, in responding, said both corporation and university deserved appreciation at the hands of their profession, for Liverpool was the pioneer which set up a school for tropical medicine at her university and London had followed suit. It was initiated by thatgreat Liverpool citizen, Sir Alfred Jones, who by establishing it had given his name an undying recollection and brought credit to his native city. He wished more people devoted themselves to the welfare of their localities There were diseases in municipal bodies too deeply seated for party politics to cure. He hoped the time would come when all would do all they could to secure the health and thereby the happiness of those who lived about them.

The Bishop of Liverpool (Dr. Chavasse), whose direct ancestors for 200 years have been connected with the medical profession, proposed the toast of "The Association," and said he was sure the public outside desired they should receive a living wage, as did colliers. The idea of this noble and beneficent profession being on half-pay, starved or straitened, was abhorrent to every Britisher.

Dr. E. J. MacLean, Chairman of the Representative Body, responded and referred to the great growth of the

association since the last meeting in Liverpool. He said the dominating body was the meeting of representatives. The public might misunderstand their constitution, as they sometimes did that of the public. "Breaking Off Negotiations," of which so much was said, did not mean boycotting insurance for all time, but that conditions must be in the interests of the whole public as much as in their own. The duties we are asked to perform must be properly defined as to both normal benefit and extras, and the question is not one of the pocket only. The "Guests" and the "President" were proposed and enthusiastically honored.

AMERICAN SOCIETY OF TROPICAL MEDICINE.

Ninth Annual Meeting, held at Atlantic City, N. J., June 3, 1912.

The Eradication of Malaria.—Dr. Joseph H. White of New Orleans, La., said that malaria possessed a wider interest than any other of the tropical diseases in the United States, and particularly in the South. There had been countless deaths charged to malaria that did not belong to it. Many physicians, through ignorance, had signed death certificates giving malaria as the cause, when it was absolutely foreign to the disease, while others had knowingly charged up such things as syphilis to malaria. He thought that the morbidity of malaria, rather than the mortality, was the question of importance, particularly in the South. The morbidity was not over-estimated, but the mortality was largely so. He observed that the filling up of our country with inhabitants had done much toward accomplishing the desired result in many parts of the Northern and Middle States, practically obliterating malaria; but that there were many places where this was not so; therefore, the remedy would have to be applied in a palliative way, by excluding the mosquitoes from the houses, draining small pools of water near, and oiling those that could not be drained, using for that purpose an oil that had been devised by Colonel Gorgas, and which was composed of resin, caustic silver and some other things that were cheaper and more effective than oil. Dr. White felt that the main point was the elimination of the swamps; and that the State and Nation, as well as the citizens, must be appealed to. He asked whether national drainage was not as important as national irrigation; irrigation led only to public wealth, while drainage led to both health and wealth. He observed that if malaria were not removed from the South, the negro race would be the only one that could live there.

Dr. M. P. Ravenal of Madison, Wis., said that as a boy he was given to understand that malaria was invariably fatal, and that for a white man to spend the night across the river from Charleston—his home—in St. Andrew's Parish, was equal to shooting himself. It was the habit all through the South for the people to leave their plantations about the fifteenth day of May, and not return to them until after the first frost had fallen. It was his belief that only the plantation negro was immune from malaria, as he had seen negroes from the foothills brought down to the phosphate fields die like flies of that disease. He felt that the important factor in the obliteration of malaria was the proper draining of the swamps, and that if this were done thoroughly it would be unnecessary to even screen the houses. He observed that the so-called poor whites of the South—who were generally accused of laziness—were as energetic as any people when they were well; but that malaria, together with hookworm, had been a primary factor in taking away their ambition. With the drainage of the malarial districts and the cultivation of areas of land, there had been an enormous material development, so that the public health question was one of great importance to this country from that standpoint, as well as from the racial one.

Dr. B. F. Royer of Harrisburg, Pa., said that malarial fever cut very little figure in Pennsylvania, because it was a reportable disease, and a placard was put on each premise where it existed. It had formerly been common for physicians to speak of indefinite fevers as a touch of malaria, but the reporting of the disease had done away with that loose method of diagnosis. Physicians could no longer call typhoid fever malaria, since they both were reportable, and the State Laboratory was available in which to make the tests. He said the State furnished to the physicians all over the State a little shipping outfit which held three glass slides, on which they could send smears to the laboratory.

Dr. E. H. Hume of Changsha, China, said that in central China, where there was a great deal of rice raised, there were none of the anopheles within hundreds of miles, but in other sections of rice country there were crowds of them. He observed that the present studies seemed to indicate that the presence of anopheles had something to do with the kinds of fish, etc., contained in certain waters, and that they hoped within the next few years to find the solution of that problem. Malaria was so scattered in China that it was being worked out as a problem of great importance, he said.

Dr. Wm. H. Jeffreys of Shanghai, China, said that it was his opinion that the drainage of swamps on a big scale would have to be done by the State or Congress, as individual enterprise had never done a great deal in that direction; this had been shown by the attitude the people of Maryland had taken toward draining their swamps when the State had offered to pay two-thirds of the cost, but had not made the drainage compulsory.

Comparative Observation on the Biological Characteristics of Spirochæta Pallida and Spirachæta Pertenuis.—Dr. Henry J. Nichols of Washington, D. C., said that the differences in morphology were slight, and that the same was true of the cultural characters that had been so far observed. No specific antibodies had been demonstrated, but distinct differences occurred in experimental lesions in the rabbit, and the action of salvarsan was distinctive. He felt that there was great need for investigation along the lines of spirochæta pallida and spirochæta pertenuis.

Dr. Creighton Wellman of New Orleans said that to work out some of the relationships by means of complement deviation, or by other means, was very much worth while. He stated that he had discovered pertenuis and published his paper dealing with that discovery a few weeks after Castiglianti's discovery; and that it, therefore, only served to confirm his, but that he had worked his own out and sent the paper away long before he saw Castiglianti's paper. Dr. Wellman differed with Castiglianti in some points, and did not believe the two diseases should be united, but that they should be considered entirely distinct. He felt that if one once saw a case of yaws and one of syphilis, he would get them so settled in his mind that they could not be mistaken for each other. It was his opinion that more scientific care should be given to solving the question of the tropical diseases.

Dr. Nichols said that one of the drawbacks to that sort of work in tropical diseases was the scarcity of laboratories—properly fitted up—in the tropics. While they might see many cases of yaws in the tropics, yet they might not have the facilities to work with; but in the temperate zone they probably had the laboratories, though not the cases.

Cultural Studies of Malarial Parasites.—Dr. Creighton Wellman of New Orleans presented this report for Dr. C. C. Bass, who had been sent on a scientific expedition to Central America, by the Tulane University of Tropical Medicine, of New Orleans, in order to better study malaria. Dr. Bass had succeeded in cultivating the malarial parasites and following out the entire cycle of schizogeny, not only in culture but in transplants. The work had been begun some months ago, and he had succeeded in keeping the malarial parasites alive for seven weeks. In an announcement in the *Journal of the American Medical Association* a short time ago Dr. Bass had described the method of his work. Dr. Wellman thought that this discovery of Dr. Bass's was worthy to stand beside the former discovery that the mosquito was the host of the malarial parasite.

A Simple Method of Differentiating Disease Bearing Insects.—Dr. C. S. Ludlow of Washington, D. C., discussed the general external resemblances and differences between ticks and bedbugs, lice, and fleas. She thought that wing venation offered a good means of differentiating groups of flies, as the family was always indicated, and sometimes the genus was made evident by that means. She observed that the classification of the mosquito was in almost inextricable confusion.

Dr. Creighton Wellman of New Orleans said that in no other group of arthropods were there so many new species suggested as in the case of the mosquitoes. He did not approve of the attempt to name animals and insects by people who were entomologists, and not specialists. He suggested that when one is going to work with a species of mosquito, he should first find out just what it is by sending specimens of it to someone especially working with mosquitoes; and this, also, should be done with any kind of insect. It was his idea that students in tropical medicine could help greatly in the filling up of the gaps and the gathering of the data referring to the life history of almost all of the insects. He said that the best way of clearing up the habitat of the tsetse fly was based on the fact that a peculiar degree of shade and humidity was necessary for its reproduction. The clearing away of the timber in the fly belt had been efficacious,

because those flies wandered only a few yards from the belts. Dr. Wellman observed that it was his opinion that the collecting of exact data, and the getting of facts, from which to draw a deduction with regard to the extermination of the mosquito, would be of more benefit at the present stage of the problem than the making of ingenious suggestions and hypotheses, many of which were not based on facts.

Dr. JOSEPH GOLDBERGER of Washington, D. C., said that he thought there was too much tendency in all branches of zoology to a very broad, superficial study, and that the number of species and genera was appalling. He felt the time had come when intensive study was needed rather than a layer of poorly recorded facts. More about the life histories of the animal was needed; and instead of rushing madly after new species those that were already known should be carefully studied.

Dr. LUDLOW said that the study of flies was surrounded with more difficulties than was usually recognized; that the anopheles were shy, so that many persons were unable to find them, even where they existed.

Bacteriemic Nature of Leprosy.—Dr. DAMASO RIVAS of Philadelphia, Pa., said that the work was based upon the fact that *Bacillus lepræ* was easily found in the blood of cases of leprosy. The method consisted in collecting 0.1 to 1.0 cc. of the patient's blood, from the tip of the finger or toe (free from lesions) in about 5 to 20 cc. of a 2 per cent. solution of acetic acid, in which the erythrocytes were dissolved. The mixture was centrifuged for about fifteen minutes, and the sediment examined for alcohol acid-fast bacilli. He observed that the method of staining was one usually followed in the examination for tubercle bacilli, the sediment being spread on a slide, dried, fixed, stained with carbol fuchsin, decolorized with 30 per cent. hydrochloric-acid solution in 95 per cent. alcohol, and counterstained with methylene blue. In his original paper, he gave plates illustrating the *Bacillus lepræ* found free in typical aggregation or scattered, as well as in the form of lepra cells (that is, endothelial cells or lymphocytes filled with the bacillus); also a few bacilli phagocytized by the lymphocytes were shown as evidence that the *Bacillus lepræ* was found in the circulating blood. He remarked that that method was advantageous in demonstrating the bacteriemic nature of leprosy, and also as a means of diagnosis of the disease.

Early Diagnosis of Filariasis.—Dr. DAMASO RIVAS of Philadelphia, Pa., said that his method was based upon finding the microfilaria in the blood in the early stage of the disease, and that to do this one should collect from 0.1 to 1.0 cc. of the blood, from the finger, in about 5 to 10 cc. of 2 per cent. acetic-acid solution, in which the erythrocytes are dissolved. After shaking, the mixture should be centrifuged for about 5 minutes, when the sediment might be examined. Either fresh cover-glass, or dried and stained preparations should be made from the sediment. With the acetic-acid method, he considered it immaterial at which hour of the day or night the examination was made, and stated that if the case was positive the microfilaria would be found in the sediment. Four comparative tables were given in the paper, and the advantages of the acetic-acid method over the common, fresh-blood, cover-glass preparation were summarized as follows: (1) Microfilaria of *F. nocturna* or *F. loa* are found in the peripheral blood at all hours of the day or night. In cases of *F. nocturna*, of course, the greater number is found at night; while in *F. loa* the greater number is found in the day. (2) The periodicity of microfilaria in the peripheral blood is related to the relative number of embryos circulating from the blood, and not to an absolute absence of them from the capillaries. (3) The acetic-acid method is of especial advantage in the early diagnosis of filariasis. By it the microfilaria can be demonstrated in the blood as soon as the adult filaria reaches maturity and begins to discharge its embryos, which, in all probability, takes place years before the obstructive symptoms of filariasis are manifested.

Dr. HENRY J. NICHOLS of Washington, D. C., said that there should be more careful investigation of the tropical diseases; that there had been too much tendency in this branch of research to tell some wonderful story about a disease not clearly known, except to a few. He declared that while it was true that the *Filaria diurna* was in the circulating blood in the daytime, it was also there at night. He said that he had observed several cases of patients who were watchmen, and that at the end of a certain period of time their periodicity had not changed; they still had more filaria at night than in the daytime.

Summary of the Literature on the Etiology of Beriberi.—Dr. JOHN M. SWAN of Rochester, N. Y., suggested the following definition: Beriberi is a disease of metabolism, characterized pathologically by a polyneuritis, and clinically by an acute stage resembling an acute infection, by a stage associated with marked edema, and by a stage of polyneuritis and paralysis; and due to a diet of which uncured rice forms the principal element.

Investigation of Louisiana Rice with Reference to the Etiology of Beriberi.—Dr. CREIGHTON WELLMAN and Dr. C. C. BASS of New Orleans, La., presented a paper on this topic, in which they detailed a series of experiments with chickens for the purpose of finding out whether Louisiana rice would have the same effect as the polished rice from the Orient. Two samples of Louisiana rice were obtained—one was secured at the mill after the chaff had been removed, and was designated "unpolished rice;" the other lot was obtained when the rice was ready for the market, except that the final coat of glucose and talcum had not been applied, and was designated "polished rice." Marked nerve symptoms appeared after 17 to 23 days in the fowls fed exclusively upon the polished rice; but the unpolished rice did not produce the disease. It was also stated that the unpolished rice included with a general diet cured the disease; that a diet of pure cane sugar would produce beriberi more rapidly even than the polished rice, and that cornstarch would also produce it.

The Public Health Problems in Connection with Beriberi.—Dr. R. H. CREEL of Ellis Island, N. Y., said that beriberi in the United States had been confined to sporadic outbreaks in various parts, and had not assumed public health proportions. He asserted that the cause of beriberi was not known, but that the great epidemicity of the disease during the last thirty years had been coincident with the increased output of steam-milled, or polished rice. He observed that beriberi in Manila was on the increase, except in Government-controlled institutions, where it had practically been suppressed. It was Dr. Creel's idea that the prevention of beriberi lay in the Government's controlling the milling process of rice, and passing a rice law similar to the corn law that Italy had. He suggested a fine and the confiscation of polished rice, whether imported or for sale locally.

Dr. R. L. WILBUR of San Francisco, Cal., said that he felt that a distinction should be made between polyneuritis due to inanition and that due to infectious microorganisms. He observed that if beriberi was entirely due to food, one would expect to get much more widely scattered cases, rather than epidemics. He told of an instance in which the officers of a ship, as well as the sailors, had all come down within the space of a few days with beriberi, some of them even dying from the disease. All of these cases could not have been attributed to the same food supply.

Dr JOHN M. SWAN of Rochester, N. Y., said that in the City of Canton, which was supposed to be outside the beriberi zone, there had been a very severe outbreak of the disease in 1907, in the military camps. Out of 6,000 troops there were 600 cases of beriberi, with a mortality of 20 per cent. He thought that the use of polished rice was a preeminent factor in the etiology of beriberi, and said that that was the consensus of opinion of the members of the Far Eastern Association of Tropical Medicine at the meeting held in Hong Kong, China, last February. He remarked that while it was formerly thought that beriberi was contagious, yet of later years, owing to careful investigations, the cases had not been isolated, and no indications of contagion had been seen. Dr. Swan favored the adoption of measures by the different Governments that would control the production of polished rice.

Dr. W. H. JEFFREYS of Shanghai, China, thought that the polished rice theory was hard to accept, because of the fact that the disease apparently did appear epidemically. He stated that Shanghai and Hong Kong were the places in China where beriberi was most pronounced. In spite of the fact that they had paid a very high price for rice for St. Luke's Hospital, beriberi had broken out constantly, but when dried beans were added to the diet there was very much less trouble from the disease.

Dr. JUDSON DALAND of Philadelphia, Pa., said that ten years ago beriberi was considered of bacterial origin, but that now the polished rice theory seemed to be conclusive, though care should be used in diagnosing from the standpoint of etiology. He stated that experiments had shown that animals fed on polished rice lost weight, became paralyzed, and eventually died; but if unpolished rice and other articles of diet were added this was prevented. He asserted that beriberi occurred in individuals whose food supply depended entirely on the carbohydrates contained in rice, and from which the phosphorus was subtracted, thus producing certain unknown changes resulting in polyneutritis, or a condition which closely resembled the neuritis, caused by inanition. He declared that rice which contained less than 0.4 per cent. of phosphorus pentoxide should be looked upon as a prejudice to health, and that

those disposing of it should be dealt with accordingly.

Dr. Henry J. Nichols of Washington, D. C., said that he was much interested in the points brought out by Dr. Wellman, especially as to the fact that beriberi could be produced by cornstarch, molasses or cane sugar, but he had no sympathy with Dr. Wilbur's suggestion as to the infectious theory. He asserted that beriberi, as they had it in the East, was as fully established in connection with polished rice as scurvy was with the lack of fresh vegetables.

Dr. Creel stated that while the Java possessions contained a population of 250,000, 90,000 of whom were fed entirely on red rice, yet there were only nine cases of beriberi, one to every 10,000; whereas, in those persons fed on white rice, there were 280 per every 10,000. This seemed to him most conclusive.

Dr. Swan of Rochester, N. Y., said that he had never been convinced as to the infectious nature of beriberi, and that while many persons thought beriberi and pellagra similar he was of the opinion that beriberi was more like scurvy.

Dr. Wellman said that he felt that the whole condition of beriberi was rather more unsettled in his mind than it had been before he began the experiments, and that while most of the evidence gotten together pointed to the rice theory, yet he disagreed with Dr. Nichols in the opinion that no other theory should be considered. There were still many facts to be explained, such as certain cases he had found in the islands of the Gulf of Guam, whose symptoms and clinical diagnosis were undistinguishable from beriberi, and yet no rice had been eaten by the patients; and again, cases in which what appeared to be polished rice had been eaten, and beriberi was in much less evidence than in the other vicinity. He said that the attacking of young, strong adults was not clear to his mind; and so far as the phosphorus content of the rice was concerned, there were also objections to this theory.

Some Investigations in Leprosy.—Dr. Creighton Wellman of New Orleans said he had become interested in the therapy of leprosy some years before, and he had tried salvarsan in a series of experiments in cases of leprosy in California; the clinical findings in these cases he had presented at the last meeting of the American Society of Tropical Medicine. Judging from some cases which he had had some time back, he considered salvarsan of great value in the early treatment of the disease. He stated that Dr. Duval and himself had come to the conclusion, from some experiments they had worked out together, that the chromogenic acid-fast bacillus was the etiological factor in leprosy. He had isolated from a leprous lesion a slowly-growing non-chromogenic bacillus, which he had cultivated in a medium made from human placenta. He had also found this placenta medium very valuable in cultivating the *Bacillus tuberculosis* from lesions and exudates.

Dr. Judson Daland of Philadelphia, Pa., said that if it turned out to be true that Dr. Wellman had found the etiological factor in leprosy, it would be an extraordinary step forward in the study of that disease; and that any statement made by Dr. Wellman's co-worker, Dr. Duval, would be of great interest to those working along the same line.

Dr. Wellman said that he believed the non-chromogenic slow-grower and the Clegg chromogenic rapid-grower to be distinct from each other, and that he hoped to be able to complete his investigations by the next meeting, and have something more definite to detail.

Gangosa.—Dr. G. L. Angeny of Philadelphia, Pa., said that gangosa had been prevalent in Guam for more than a century, was destructive, and showed ulcerations of the oral and nasal mucous membranes. He stated that it began as an ulcer of the nose, mouth or pharyngeal wall, with no pain or other symptoms, the patient often not even being aware of its existence until the ulcer had reached considerable size, when the process would advance until the bone was destroyed. The duration varied from a few months to many years, he said; but the general tendency was to recover, and when death occurred, it was usually due to some intercurrent disease. He observed that the etiology of the disease was obscure, and while there were three theories advanced none of them had been verified.

Dr. Wellman said that in the Naval Hospital, at Mare Island, California, he had studied half a dozen cases of so-called gangosa, but to him all the cases looked very much like lupus. One case puzzled him considerably, because of the involvement of the hard palate. He told of a diphtheroid bacillus which Dr. Garger had isolated, believing it to be closely identified with gangosa. By the use of autogenous vaccines Dr. Garger had effected apparent cures of some of the worst cases. Dr. Wellman said that the fact that these diphtheroids were so easily isolated from any sore throat made it probable that the bacillus of Garger was the etiological factor.

Specimens of Flukes from China.—Dr. W. H. Jeffreys of Shanghai, China, showed two specimens of flukes from China and remarked that one variety was common in China, Formosa, the Philippines, and Malay; it was called the endemicus, and was the less harmful. The patient, from whom the specimen was taken, was a typical case, and had some 545 specimens in the gall-bladder and bile ducts. He stated that the particular characteristics of the endemicus were length and amount of segmentation. The other fluke, he remarked, was common in China, India, and Formosa; and, as it had been thoroughly described by various writers, was well known.

A Malarial Hotbed within Sight of the National Capital.—Dr. Thomas W. Jackson of Ft. Washington, Md., called attention to the continued existence of malaria within fifteen miles of Washington, in spite of the fact of the sanitary conditions had been greatly improved and the mosquitos largely exterminated. He felt that quinine prophylaxis had been disappointing; in fact, a failure, and he considered it a false and dangerous doctrine.

Dr. Damaso Rivas of Philadelphia, Pa., said that he had had great difficulty in getting patients to take the quinine faithfully, and that it was most efficacious to give it one hour after the temperature had begun to fall, because at that time the parasite was very young and was apt to take more quinine then than later. He advised doses of about ½ to 7½ grains, always diluted with hydrochloric acid, and felt that the recurrences of malaria were unquestionably due to taking the quinine at the wrong time.

Dr. William Kraus of Memphis, Tenn., said that about a year ago he had had a patient referred to him for the administration of salvarsan. He found that the patient had malaria, of the pseudo-autumnal form. The result of the administration of the salvarsan was the disappearance of the malarial parasites, and since that time there had been no further recurrence of the disease. He thought this remedy might have a marked effect on malaria.

Dr. Charles Craig of Washington, D. C., said that he did not think quinine prophylaxis could be compared for a moment with mosquito extermination. He told of an experience he had had at Fort Stoltzenburg, which had the worst record of any post of the United States Army. They had tried every means to do away with malaria, when finally he ordered the patients to come to the hospital twice a week, where they were forced to take the quinine in the presence of an officer. When this was done, the numerical ratio went down over fifty per cent.

Dr. John M. Swan of Rochester, N. Y., said that he had formerly taught his students that it was necessary to administer quinine to malarial patients for two years after their clinical recovery. He said his reason for doing this was because he had accepted the theory that recurrences or relapses were due to parthenogenesis. There had always seemed to him to be a parallel between malaria and syphilis, because of the necessity for continuing the treatment for a long time after clinical manifestations were gotten rid of, in order to prevent a relapse or recurrence of the disease. Dr. Swan stated that it was possible for a person with the parasites in the blood to present a perfectly normal blood picture until he had a relapse.

Dr. Joseph H. White of New Orleans, La., said that he thought the destruction of the mosquito and the use of quinine prophylaxis were equally necessary in the eradication of malaria

Dr. Jackson said that he did not condemn quinine prophylaxis generally, but that he thought it should not be substituted for mosquito destruction. He observed that his principal reason for being opposed to the indiscriminate use of quinine was that it vitiated the blood diagnosis. He felt that no definite rule should be laid down as to the length of time over which the medicine should be given, though he felt that the period was often made too short, and that the only sure guide was the repeated examination of the blood.

The Society adopted a resolution endorsing the creation of a United States commission for the study and prevention of malaria, and calling upon Congress to appropriate funds for this purpose

Officers.—The following officers were elected for the ensuing year: *President*, Dr. Edward R. Stitt, Washington, D. C.; *First Vice-President*, Dr. Richard P. Strong, Manila, P. I.; *Second Vice-President*, Dr. Creighton Wellman, New Orleans, La.; *Secretary*, Dr. John M. Swan, Rochester, N. Y.; *Assistant Secretary*, Dr. Allen J. Smith, Philadelphia, Pa.; *Treasurer*, Dr. C. Lincoln Furbush, Philadelphia, Pa.

The next meeting will be held in Washington, D. C., in May, 1913.

Medical Record

A Weekly Journal of Medicine and Surgery

Vol. 82, No. 7.
Whole No. 2180.

NEW YORK, AUGUST 17, 1912.

$5.00 Per Annum.
Single Copies, 15c.

Original Articles.

THE DIAGNOSTIC SIGNIFICANCE OF ABNORMALLY QUICK FATIGUE (APOCAMNOSIS) OF THE ORBICULARIS ORIS MUSCLE.

By J. LEONARD CORNING, M.D., LL.D.,

NEW YORK.

THE symptoms due to irritative or destructive lesions involving the functional efficiency of the facial nerve, directly or indirectly, wholly or in part, have been explicitly dealt with by numerous writers. That the muscles supplied by this nerve may be affected by spasm; that they may be palsied by neural, nuclear, or cerebral involvement; that they may be the seat of atrophy—these are facts so long authenticated that they have become the merest text-book commonplaces. It is not to manifestations so intrusively obvious that the writer would direct the attention of those who care to read. Briefly, his endeavor will be to show that the kinetic competency of the facial muscles, and notably that of the orbicularis oris, stands in a somewhat exceptional relation—if one may so phrase it—to the functional adequacy of the related cortical neurons, so that the presence of conditions tending to lessen the energy of the cerebrum as a whole and of its centrifugal (motor) functions in particular must needs express itself rather more decisively and promptly in the muscles of the face than in other parts of the neuromuscular mechanism.

In arriving at this inference the writer has been influenced by the following considerations:

That the embouchure of those who play upon wind instruments—hautbois, clarionet, bassoon, flute, etc—is injuriously affected by overindulgence in alcoholic beverages of all kinds. A similar, though perhaps less considerable detriment follows prolonged abuse of tobacco. These sequences are more pronounced in or after middle age; they are especially evident when attempts are made to play the high notes softly, and they become distressingly apparent during protracted playing demanding nicety of modulation, as in solo work.

This lack of endurance of the orbicularis is unquestionably due to impairment of innervation, to diminished vigor of the voluntary nervous mechanism, and not to any fault of the muscle itself, which indeed is overdeveloped in players upon wind instruments. A further proof of this is disclosed by the fact that the exhibition of certain chemicals which exert a stimulating action on the central nervous system, diminish or entirely remove, for the time being at least, all subjective or objective evidences of muscular fatigue. Adequately to appreciate why the inertness of the muscle which we are here considering should so injuriously affect the artistic efforts of the player, it must be borne in mind that upon the orbicularis oris devolves a leading rôle in the embouchure of wind instruments, their correct modulation and articulation being indeed, in an immediate and special sense, dependent upon the strength, endurance, and coordinative adjustments of that muscle.

A significant fact bearing on the thesis which it is the writer's purpose to maintain, is that while in players upon wind instruments the orbicularis oris muscle, and in fact, all the expressional muscles of the face, may as the result of abuse of tobacco and alcohol temporarily part with a considerable amount of endurance, the other muscles of the body—save in extreme cases—remain comparatively unaffected.

Nor is this lack of endurance of the orbicularis oris a sequence of toxic influences only. It is disclosed in conditions of debility involving the organism as a whole and the cerebrospinal axis in particular, and it appeares, moreover, fairly early as a rather significant sign in general paralysis of the insane.

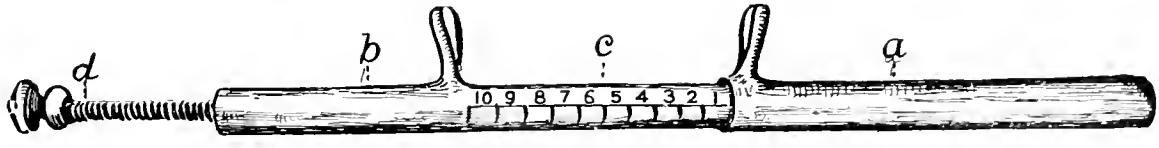


Fig. 1.—Appliance for testing the fatigue phenomenon of the orbicularis oris muscle

The writer has also encountered it in arteriopathic dementia, in which it assumed, as it were, a kind of primacy among the more general symptoms of motor weakness. Neurasthenia of a severe type, accompanied by marked bodily enfeeblement, may likewise disclose this incompetency of the orbicularis.

It is evident, from what has been said, that to bring out the fatigue phenomenon which we are here discussing, some simple apparatus is indispensable. The appliance pictured below (Fig. 1) possesses the merit of being at once simple and practical. Designed by the writer some time ago, it has seemed, after numerous trials, to have thoroughly demonstrated its efficiency. Two tubes, the one four (Fig. 1, a), the other six and a half inches long (b), slide freely, the one within the other. The shorter is the outer, the longer, the inner tube. At the inner end of the outer tube is a short hook-like arm, in length about three-quarters of an inch. Four inches from the inner end

of the inner tube a similar arm is soldered on. Between these arms a scale (c) about three inches long has been engraved on the inner tube. This scale has been divided into degrees of a quarter of an inch, each degree being numbered. The outer end of each of these tubes is closed, and a long

Fig. 2.—Showing the lateral expansion of the orbicularis oris upon the introduction of the instrument.

spiral spring, filling out the lumen formed by the two tubes, extends from end to end of the latter. From this disposition it is evident that the spring, impinging against the outer closed ends of each tube, tends to resist the approximation of the two arms. Again, it is clear that such resistance may be increased or diminished by the rotation of the screw (d) at the outer end of the inner tube, since the inner end of this screw presses against the end of the spiral spring. The practical application of the device is so apparent that but few words will be required to help to its intelligent manipulation. (1) Having, by the aid of finger and thumb, pressed together the two projecting arms, the latter are introduced into the mouth and allowed to expand until impinging against the corners of the mouth, they cause the orbicularis muscle to relax fully in a horizontal direction (Fig. 2). The subject should be cautioned not to oppose this dilatation, and the tension of the spring should be so regulated by means of the screw as to insure complete lateral expansion of the muscle, but without stretching it. (2) He should then be told to contract the muscle as much as possible, as though about to whistle (Fig. 3). The length of this contraction will be shown by the scale and should be carefully noted. This exercise of the muscle should be repeated at regular intervals, the observer making note of the number of contractions executed before a falling off in the amplitude of the latter takes place. Such decrease in the extent of the contractions can promptly be determined by consulting the graduated scale. (3) With the first appearance of this decline in the length and vigor of the contractions, the observer will begin to count anew, making note of the number of contractions, until the subject having reached the limit of his capacity, they (the contractions) cease absolutely. It is evident that without lavish expenditure of ingenuity apparatus may be devised—revolving cylinder, pneumatic attachments, pen, etc.—which will graphically register the decline in amplitude of the contractions of the orbicularis consequent upon fatigue. Unfortunately mechanism of the kind is neither easy to carry about nor easy to manipulate. Those, however, who are hospitable to sophistication of the sort may, perhaps, care to try it.

In pathological cases, the relatively small number of contractions preceding the first evidence of fatigue (diminution of the amplitude of the contraction) and the rapid fall in the extent of the contraction thereafter are the characteristic features.

The following simple formula is submitted in deference to those who may care for such things: Let *a* represent the number of contractions *preceding* the first appearance of diminution in the amplitude of the contractions; *b* the number of voluntary contractions evocable *thereafter*, and *x* the degrees of fatigue which it is sought to determine. We shall then have $\frac{b}{a} = x$.

A comparison with the average results obtainable under normal conditions will serve to disclose the diagnostic significance of the test.

In the ultimate estimate, however, it is not to be forgotten that the endurance of the orbicularis is usually greater in men than in women and children; that it is greater in active, muscular individuals than

Fig. 3.—Showing partial contraction of the orbicularis oris.

in those who lead sedentary lives, and that it is greatest of all in those who play upon wind instruments. Again, it is noteworthy that when the exercise of the muscle is continued much beyond the first evidence of fatigue, a sensation referred to the orbicularis, and variously described as "heaviness"

or "numbness" is apt to cause complaint. Even in persons of robust health this may sometimes happen after fifteen or twenty contractions.

The opinion that the fatigue phenomenon thus disclosed is not merely muscular but corresponds in large measure with exhaustion of the cortical neurons concerned in the innervation of the orbicularis has already been advanced. To the evidence previously adduced in favor of that opinion may be added the fact that even when the ring muscle of the mouth is exercised to the point at which voluntary action is no longer possible, it may still be made to contract by the application of the faradic current.

The foregoing facts, though significant in themselves, become doubly intelligible in view of the special relationship existing between the underlying mechanism of the emotions and the expressional apparatus of the face. How the facial muscles responding automatically to the stir within disclose with unmistakable signals much of the affective life is realized by all. That the character and intensity of the emotions themselves are influenced in an immediate and surprising degree by physiological conditions is, however, not always so promptly thought of, save in the more blatantly obvious relation of cause and effect disclosed by the use of intoxicants, or as one finds it revealed in the course of certain well-known visceral derangements.

A brief glance at the physical basis of emotion, as now understood, will help to a rational explanation of the emotional exaltation following cerebral stimulation or depression, and to the framing of a concept—however faulty in the present state of knowledge—of the genesis of emotion under normal conditions as well.

Originating from the parietal lobe more especially, but likewise, though less abundantly, from all parts of the cortex, certain fibers descend to distribute themselves in the red nucleus. On their way thither these fibers graze the thalamus and assist in the formation of the tegmentum. These fibers (described by M. and Mme. Déjerine) constitute, it seems plausible to assume, the upper portion of the emotional motor system. Thence downwards (from the red nucleus) the route is continued, according to some investigators (Probst, Held, Collier, Buzzard), by way of the rubrospinal bundle of Monakow, which, arising on the ventral side of the red nucleus, decussates in the crossway of Forel with the corresponding fasciculus from the opposite side, to pursue its course down the medulla spinalis (in the vicinity of the lateral tracts) as far as the sacral region. It is this rubrospinal bundle of Monakow which connects the opposite red nucleus with the ventral horn of the spinal cord.

Incidentally it may be remarked that the close proximity of the corticorubral fibers to the thalamus is probably reponsible for the opinion so frequently advanced that the thalamus is to be looked upon as the structural basis of expressional movements. It requires, indeed, but moderate familiarity with the anatomy of the region which we are discussing to realize that a lesion causing a solution of the "emotional motor fibers" at that point may likewise involve the thalamus, so that a just relation of cause and effect may be difficult to determine.

The purpose subserved by this corticorubrospinal system in the genesis of emotion may be conceived to be somewhat as follows: A sensation, visual, auditory, or what not, or a precept or an idea gives rise in the cortex to an impulse which is transmitted downward by way of the corticorubral fibers to the red nucleus. Thence it pursues its course by way of Monakow's rubrospinal tract to the motor cells of the lowest level, and so through the nerves to the muscles. Parenthetically it may be observed that the expressional apparatus of the face alone concerns us for present purposes. It is held that it is the muscle sensations—or largely these—following contraction of the muscles of expression, which, on reaching the cortex by way of the sensory tracts, give rise to the emotion, the tone of the latter being, however, influenced by the combinations of the muscular sensations among themselves and by the addition of vasomotor sensations as well.

In view of what has already been said, it is clear that the whole mechanism of the emotions is essentially involuntary, and that in this respect they (the emotions) resemble the instincts. While this is true, it is not to be forgotten—and this is of importance in connection with the objects of the present writing—that the muscles of the face whose purpose is rather expressional than dynamical are likewise under the dominion of the will through the medium of the Rolandic-motor system, with whose physiology all are no doubt familiar. It is, thanks to the presence of this arrangement, that the counterfeit expression of the actor is made possible, who, were he deprived of this ability, would be entirely beholding to the reflex (psychical) or involuntary play of the muscles of expression under the incitement of genuine emotion, a condition which for obvious reasons is not always to be realized on the stage.

The physical bases of the two modes of expression then are evidently independent of each other.

Certain well-known clinical observations, which, while serving to show the independence of the two systems of expression—the voluntary and the involuntary—also reveal the important part played by the thalamic region in the mechanism of expression may at this portion of the argument be cited with advantage. When, let us say, a patient has a lesion of the right Rolandic area, he smiles *reflexly* in response to a jest on both sides of the face; but a *voluntary* or "assumed" smile occurs on the right side only, volitional action on the left side being paralyzed. When, however, a lesion of one optic thalamus, say the right, is present, a jest evokes a smile on the right side only; and yet, when told to assume a smile, the muscles of both sides of the face are seen to act. Here, then, it would seem, is reasonable proof that the physical bases of the two modes of expression are substantially independent.

Yet, granting this autonomy of each system, the conclusion seems justified, nay, almost inevitable, that any general cause, acting, let us say, through the circulation upon the involuntary mechanism of expression, must exercise a corresponding influence upon the voluntary mechanism as well. The general distribution throughout much of the cortical area of the neurons of the involuntary emotional system, and the consequent intermingling more or less, of the neurons of both systems suggest this. Again, but more directly to the purpose, we have the experimental data afforded by the wind instrument players already alluded to. In these may be found coincident depression of the neuromuscular system of expression, voluntary and involuntary alike, the dual phenomenon being immediately traceable to a single general cause, such as intoxication by alcohol or nicotine.

There would seem, therefore, theoretical as well

as empirical sanction for the view that the degree of endurance of the orbicularis oris muscle, as disclosed by the voluntary exercise already described, may in a very real sense represent the condition not only of voluntary, but of involuntary innervation as well. From these considerations it follows, that in conditions of mental depression there should be diminution more or less of the endurance of the orbicularis when voluntarily exercised. And in fact, practical tests prove this to be the case.

In a number of individuals examined by the writer the endurance of the orbicularis oris was found to be decidedly below normal; at least this was true of those instances of depression (melancholia) in which the somatic symptoms were at all prominent. Again, and of similar drift, is the fact that the same phenomenon was observed to follow the exhibition of large doses of alcohol and the bromides, the amount of the latter being sufficient to cause pronounced mental hebetude. A like effect also occurs some time after the inhalation of ether, and this despite the fact that the subject has sufficiently recovered from the anesthetic to stand and even walk. Incidentally, it may be remarked that the vacuous expression of the face so frequently met with in typhoid fever, due, as it is, to relaxation (hypotonicity) of the facial muscles, coincides with pronounced loss of endurance of the ring muscle of the mouth. Finally, as previously noted, we have the significant fact that in the diffuse meningoencephalitis of paresis, loss of endurance of the ring muscle of the mouth is met with rather early.

From the foregoing data the following conclusions would seem to be justified:

1. General conditions that tend to lessen the energy of the cerebrum as a whole and of its cortical (motor) neurons in particular will express themselves rather more promptly in the muscles of the face than in other parts of the motor system.

2. The kinetic condition of the orbicularis oris muscle may be regarded as indicative of that of the other facial muscles under the circumtances set forth under 1.

3. The voluntary and involuntary mechanisms of expression, while structurally independent, are both amenable to the general influences noted under 1, so that the degree of endurance disclosed by the orbicularis oris, when voluntarily contracted in the manner previously set forth, may serve as an index of the efficiency of innervation of that muscle, and hence of the other muscles of expression, when, under emotional incitement, the latter are involuntarily (reflexly) contracted.

4. In emotional depression, especially when somatic symptoms are a marked feature, loss of endurance of the ring muscle of the mouth is a sign of some importance.

5. From the foregoing it follows that under certain circumstances, and more especially when associated with other signs, the degree of endurance revealed by the orbicularis upon voluntary contraction may afford confirmatory information as to the subject's emotional condition.

6. In diffuse meningoencephalitis occurring in general paralysis of the insane, loss of voluntary endurance of the ring muscle of the mouth occurs fairly early.

7. The endurance of the orbicularis may be enhanced or diminished by the exhibition of certain drugs; enhanced, for example, by small doses of opium and strychnine; diminished by relatively large doses of nicotine, alcohol, ether, and the bromides.

8. The orbicularis phenomenon which forms the burden of the present writing will, the writer believes, prove most informing when associated with other symptoms. Only exceptionally, it would seem, is it likely to prove of assistance when unsupported by further evidence.

Many signs, empirical and rational, have been added to the symptomatology of nervous affections during the last few years. Some of these have held their own in the estimation of the profession; others have failed on more extended trial to maintain themselves. In view of these happenings it is not, perhaps, the part of wisdom to warm too ardently to new proposals; but neither, on the same evidence, is it policy to flout them. This judicial attitude the writer has sought to maintain toward his own work; and it is far indeed from his thought to bespeak either a more sceptical or yet a more rhapsodistic mood on the part of the reader.

53 West Thirty-eighth Street.

A CASE OF DENTAL DEVELOPMENTAL ANOMALIES, WITH CYST FORMATION.

By CECIL KENT AUSTIN, M.D.,

PARIS, FRANCE.

Cases like the following one appear to be extremely rare; such was at least the unanimous opinion of the three confreres to whom I showed it—a surgeon, a radiologist, and a dentist, all of them men of the most extensive and varied experience—no one of whom had ever seen anything similar. It consequently seems to be of sufficient interest to aspire to the honors of the medical press.

The patient, a young Scotch woman of twenty, presented every appearance of a person in the best of health. A peculiarity in her development has been that three teeth in the lower maxilla have always been lacking, at any rate in her second dentition; whether there were any dental anomalies in her childhood she does not of course remember. The teeth missing in this maxilla are: on her right side, the second bicuspid and a molar (uncertain whether first or second); on her left, the first molar. In the upper maxilla all of the teeth came out properly, though she has since lost two from decay. She has only one wisdom tooth, in the upper maxilla on the right side. Otherwise her teeth are sound and in good condition.

Three years ago, consequently when she was seventeen, a swelling began to make its appearance just behind her only lower molar on the right side. This lump increased in size very gradually but caused her no discomfort whatever, except such as was due to its presence and bulk; she was in the habit of pressing on it frequently through her cheek from the outside. It finally became so voluminous as to overcap the molar that lay in front of it. There had never been any signs of the eruption of a wisdom-tooth at this point, nor had she ever had any trouble there of any description.

At the end of a year's time the swelling appears to have passed through an acute phase of inflammation of about a week's duration, after which it opened and allowed a certain amount of "matter" to escape, red, according to the patient's description; but more precise information about this period it was not possible to obtain, as the woman was anything but an accurate observer.

By the time that the acute accidents had subsided the patient found that a cavity had formed just behind the molar, and this cavity proved to be a per-

manent one, and even, according to her affirmation, has been gradually growing larger and larger. She seeks advice solely on account of the fact that food gets into this cavity and renders her breath offensive; there is no pain whatever in the region and no

Fig. 1.—The solitary lower right molar, back of which is seen the large, deep cavity.

other inconvenience arising from the presence of this anomaly.

On local examination of the posterior portion of the right side of the lower maxilla the first abnormal feature that appears is a breach in tooth succession back of the first bicuspid, in which she affirms that no teeth have ever existed; this gap is quite extensive, more so than seems likely to be attributable to the absence of a tooth no larger than a bicupsid. Back of this stands a fine, fully-developed molar in perfect condition. Back of this again, and occupying all the posterior portion of the horizontal branch of the maxilla, is a dark, deep cavity into which a small hickory-nut could be inserted. The interior of this cavity is considerably larger than its opening into the mouth, and at its anterior aspect the posterior roots of the large molar are laid bare. The mucous membrane covering the exterior of this hollow is normal in appearance. On exploring the cavity with a probe no grating is felt, the inside being apparently lined with a granulating membrane, as the patient says that each morning there is a small quantity of red secretion in the hole. This exploration causes no pain whatever.

On the outside of the face the lower edge of the maxilla is normal and similar in all respects to that of the opposite side; its external aspect, however, protrudes somewhat, with a hard and even surface, over which the soft tissues can be freely moved. No discomfort is caused by external exploration. The lymph-nodes are not involved. The patient gained three or four kilos in weight last year, but has lost them again since.

The accompanying illustration (Fig. 1) from a photograph which, although not very remarkable, was the best that could be obtained under such difficult circumstances for the operator, gives a general idea of the appearance presented by the lesion.

Radiographic examination was carried out a few days later and revealed various interesting and important features. Fig. 2 showed that there were no non-erupted teeth included in the substance of the lower maxilla between the right bicuspid and big molar. Fig. 3 brought to light a new and unexpected detail: the presence in the posterior end of the pathological cavity of a large buried tooth lying quite horizontally and fastened in the substance of the ascending portion of the maxilla. Between this tooth and the large molar can be seen the faint shadow due to the loss of tissue, surrounded by a heavier shadow, which was found later on to be caused by extreme bone-condensation around the cavity. Both of these plates are due to the courtesy of Dr. J. Belot, whose competence in matters of this kind is well known.

Once in possession of these data our next step was to try to formulate a diagnosis; but as we were manifestly in presence of a case of anomalous tooth-eruption, it was clear that the best that we should be able to accomplish would be to make more or less likely suppositions. Before the radiographic exploration we thought that we were dealing with a cyst developed at the expense of the germ of a wisdom tooth, though the early age at which the accidents occurred did not seem in entire accordance with this theory. When, however, the existence of a fully developed tooth was demonstrated in the depths of the cavity we had to give this idea up, as it seemed most probable that that was the wisdom tooth hidden away behind there. We then turned to the hypothesis of a cyst caused by degeneration of the germ of the second molar. It is true that the space between bicuspid and molar was pretty large, much larger than could possibly be due to the absence of one normal, second bicuspid; but we thought that possibly the first molar might have gradually sagged backwards, giving way before the masticating-thrust falling on a tooth unsupported either front or back. Again, the idea occurred to us that, as we were dealing with anomalies of all sorts, why should this not be in reality the first molar considerably out of its appointed position?

But the extent of that gap between bicuspid and molar continued to weigh on our minds, and the theory that the molar to be seen must be the second gained steadily in ground. This was also borne out by the fact that the molar lacking on the opposite side was the first one and there seemed a certain possibility that the anomaly might be symmetrical. If this supposition were the correct one the pathological condition could only be explained by an infectious process accompanying the evolution of the hidden wisdom tooth. And this was as far as we could get, no means occurring to us of deciding which of the two hypotheses was the correct one, cyst of the second molar or infectious process due

Fig. 2.—*X*-ray from inside out, of anterior portion of patient's lower maxilla, right side, showing that there are no included teeth in that region.

to the wisdom tooth. It was, however, decided to remove the entire diseased area under chloroform.

This proved to be much more difficult than any one anticipated. The soft tissues were first freed all around the swelling; but although the operator,

Dr. Du Bouchet, surgeon to the American hospital here, has a powerful grip and had provided himself with the strongest cutting forceps available, the bony wall of the cavity was so dense and hard that nothing whatever could be accomplished with that instrument. A start, however, was finally effected with a gouge and mallet and gradually, by using first one instrument and then the other, the entire morbid process was cut away, the wisdom tooth coming out in the meantime—sufficient bony tissue remaining below the gap created by the operation to insure the solidity of the maxilla. The sequelæ to the intervention presented nothing worthy of note and the whole region healed over most satisfactorily.

Fragments of the wall of the cavity were taken

FIG. 3.—1. Solitary lower right molar. 2. Horizontal hidden wisdom tooth. Between these two is the light shadow of the cavity, surrounded by the heavy shadow of the densified maxillary tissue. 3. Molars of the left side showing through. One of these contains a filling.

and placed to decalcify in order to obtain stained sections to settle the point as to whether by any chance there might be any element of malignancy in the process; but the density of the bone was such that although the pieces were treated in a variety of liquids it was found impossible, even in several months, to decalcify the specimens, and the attempt had to be abandoned. Our minds, however, were set quite at rest on the malignancy question by the course of events as time went on, and a year after the operation the patient is entirely well. The tissues over the operated region are now perfectly normal and the young woman is about to have a plate made to supply the missing teeth, as she has nothing to masticate with on that side of the lower maxilla back of the first bicuspid.

How to Avoid a Chauffeur's Fracture.—Eliminating the possibility of abnormal overheating of the engine, such as might follow an accident to the cooling system, the best way to avoid a back-firing while cranking is to make sure personally that the spark lever is properly retarded. However, there is one method whereby, even with the occurrence of a back-fire, little or no injury can be sustained. This is to crank the engine with the *left hand*. Should a back-fire occur, a glancing blow will be received, which, if painful, is unlikely to do serious damage.

SURGERY OF THE HYPOPHYSIS WITH ESPECIAL REFERENCE TO THE ENDO-NASAL METHOD OF HIRSCH.*

By IRVING WILSON VOORHEES, M.S., M.D.

NEW YORK CITY.

THE interest of the profession in the relation of pathological changes in the hypophysis cerebri to general disturbances of body nutrition and growth, has been greatly stimulated since P. Marie in 1886 published a report of two cases of acromegaly which he ascribed to disease of this little understood but seemingly important organ. The term "hypophysis cerebri" had, however, been previously used by Soemmering in 1778.

Physiological and Anatomical Considerations.—Sir Victor Horsley is credited with the first experimental operations on the hypophysis. He removed this organ from two dogs, which lived respectively five and six months without showing any symptoms. Subsequently he stimulated the cerebral cortex and found increased excitability of the motor regions. Faradic currents of moderate strength produced a marked tetanus, followed by severe protracted epilepsy with clonic spasms fully as strong as those in traumatic epilepsy in man.

It seems that the life of an animal deprived of the hypophysis may be prolonged for some time, but that death is the ultimate outcome of the removal of this gland. Cushing removed the hypophysis from many dogs and then either injected or transplanted the gland from other animals. He is convinced that total removal leads to a definite train of symptoms, which can be modified by gland injection and transplantation. He is led to believe that the anterior lobe is the most essential part of the gland and is necessary to life. Adiposity is the most pronounced symptom after partial removal of the anterior lobe. This is accompanied by a secondary hypoplasia of the genital organs in adults or by a persistence of secondary infantilism if removal antedates adolescence.

Gley found that of ten rabbits deprived of the hypophysis only one survived the operation. This animal had previously undergone a complete thyroidectomy. For three weeks following the removal of the hypophysis the rabbit presented at intervals a series of slight complications, but survived the more important trophic disturbances, such as thickening of the skin and marked asthenia, for a period of ten and one-half months.

Vassale and Sacchi removed the hypophysis from forty cats and dogs. These authors are of the opinion that the complete removal of the hypophysis leads to death, prior to which the animal gives evidence of great psychical depression and marked change in disposition.

The majority of frogs from which the hypophysis was removed died in the course of a few

*Read at a meeting of the Section on Rhino-Laryngology of the N. Y. Academy of Medicine, May, 1912.

In the preparation of this essay I have made free use of the admirable monograph of Dr. Frederick Tilney of the College of Physicians and Surgeons (N. Y.) and of Dr. Hirsch's published reports, the first of which appeared in the *Archiv für Laryngologie*, 24 Bd. 1 Heft. The latest contribution from Dr. Hirsch's pen was published in the *Berliner klinische Wochenschrift*, 1911, No. 43. In a private letter in which I was requested by Dr. Hirsch to translate as much of his reports as seemed desirable, he informs me that he has operated upon eighteen cases thus far, with only two fatalities, one of which was due to pneumonia.

weeks with symptoms of progressive paralysis. Autopsy showed a purulent basilar meningitis.

Berkley studied the nerve elements in the hypophysis of dogs. He concluded that the organ has retained its double rôle of secretory and nervous

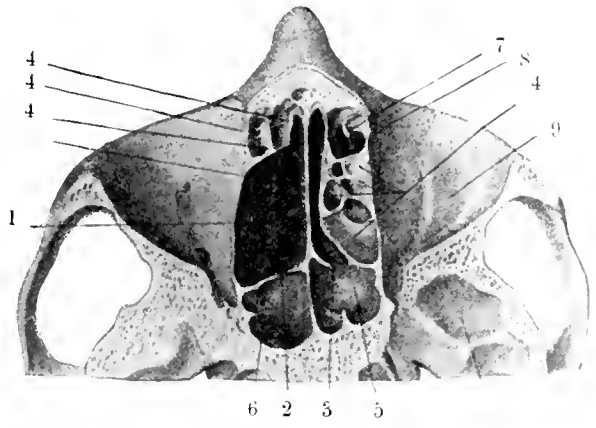


FIG. 1.—Horizontal section through the skull at the level of the ostia sphenoidalia. On the left side the posterior and in part also the anterior ethmoid cells are removed. The anterior wall of the left sphenoidal sinus is exposed. The normal anatomical relations are represented on the right.

1. Cavity after removal of the posterior ethmoid cells. 2 and 3. Ostiam sphenoidalia. 4. Ethmoid cells. 5 and 6. Sphenoid cavities. 7. Uncinate process. 8. Infundibulum. 9. Orbital cavity. (Hirsch's private collection.)

function intact, the former perhaps modified, the latter or original special sense organ probably lying quiescent and only changed in so far as to admit of a slightly different arrangement of its elements.

There can be little question that the infundibular process takes origin from the brain while the glandular portion arises from the epithelium of the mouth cavity. Certain bodies known as basophilic elements are formed in the posterior portion of the gland and probably pass into the cerebrospinal fluid by way of the third ventricle. In the anterior portion of the gland acidophiles are formed which probably pass directly into the blood. Colloid substance has been observed in the gland. A rich vascularization in the granular portion of the hypophysis has been recognized by all observers. No definite lymphatic supply has been proven.

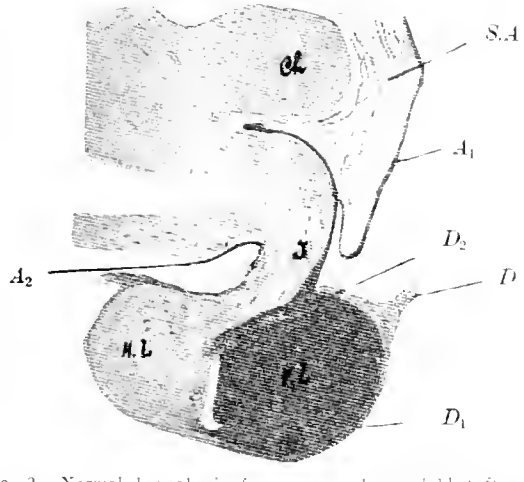


FIG. 2.—Normal hypophysis from a new born child (after Erdheim). V.L. Anterior lobe. H.L. Posterior lobe. J. Infundibulum, r.i. Recessus infundibuli. Ch. Chiasma. A_1. Arachnoid anterior to the infundibulum. A_2. Arachnoid posterior to the infundibulum. D. Dura. D_1. Dura covering of the sella. D_2. Diaphragma sellæ. S.A. Subarachnoid connective tissue.

The relation of the thyroid to the hypophysis is uncertain. It was at one time thought that one was the counterpart of the other, but Rogowitsch made a series of studies upon animals from which the thyroid had been removed. In dogs and rabbits he observed a constant hypertrophy of the hypophysis, and for this reason believes that this organ and the thyroid gland are closely related in function and that, like the liver, it contributes a substance to the

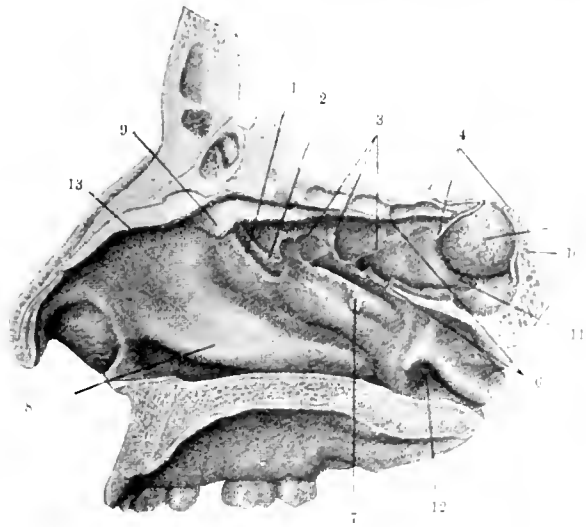


FIG. 3.—Endonasal hypophysis operation dependent upon the wide opening of one sphenoidal cavity only. Right half of the nose with the hypophysis tumor *in situ*. The bony shell of the tumor is removed. The dura split and turned aside. 1. Uncinate process. 2. Bulla ethmoidalis. 3. Remains of the ethmoid cells. 4. Dura. 5. Hypophysis tumor. 6. Margins of the widened sphenoidal cavity. 7. Posterior end of the middle turbinate. 8. Inferior turbinate. 9. Remains of the middle turbinate. 10. The back of the Turk's chair. 11. Sphenoidal sinus. 12. Opening of Eustachian tube. 13. Remains of the nasal septum. (After Hirsch.)

blood which renders certain compounds innocuous.

From a clinical standpoint, there appear to be good reasons for associating hypophysis disease with acromegaly, but the following objections hold: (1) Sixty reported cases of acromegaly showed only 61 per cent. with hypophysis tumors (Arnold).

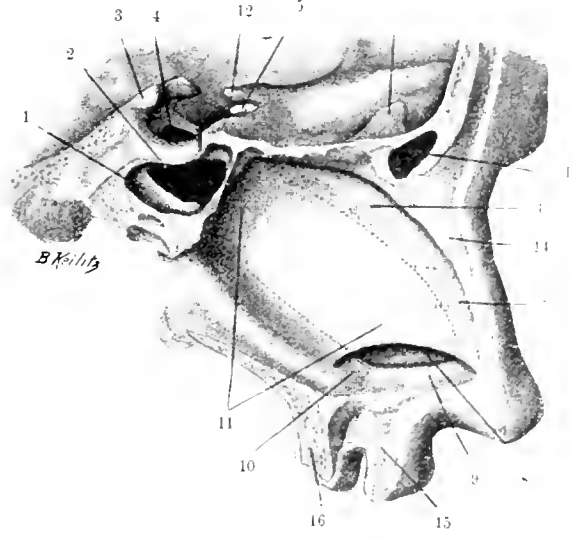


FIG. 4.—Endonasal hypophysis operation dependent upon the submucous resection of the septum. (The skull was sawed through to the right of the middle line so that the entire left sphenoidal cavity is seen and a part of the right.) The septum between the two cavities has been removed in great part. In the floor of the sella (normal) an opening has been made.

1. Remains of the sphenoidal septum. 2. Left sphenoidal cavity. 3. Proc. clinoidei post. 4. Opening in the floor of the sella. 5. Optic nerve. 6. Lamina perpendicularis of the ethmoid. 7. Septal cartilage (upper margin). 8. Septal mucous membrane of the left side. 9. Septal cartilage (anterior margin). 10. Anterior end of vomer. 11. Septal mucous membrane of the right side. 12. Proc. clin. anter. 13. Frontal sinus. 14. Bony bridge. 15. Upper lip. 16. Proc. alveolaris. (After Hirsch.)

(2) Changes in the hypophysis may occur in the course of some acute and chronic diseases (Thom). (3) The pathology of acromegaly includes many other organs and systems besides the hypophysis

and bones (Arnold). (4) Changes in the bones and soft parts have been observed as secondary to certain respiratory and circulatory diseases (Marie). (5) Tumors of the hypophysis frequently exist without any symptoms of acromegaly.

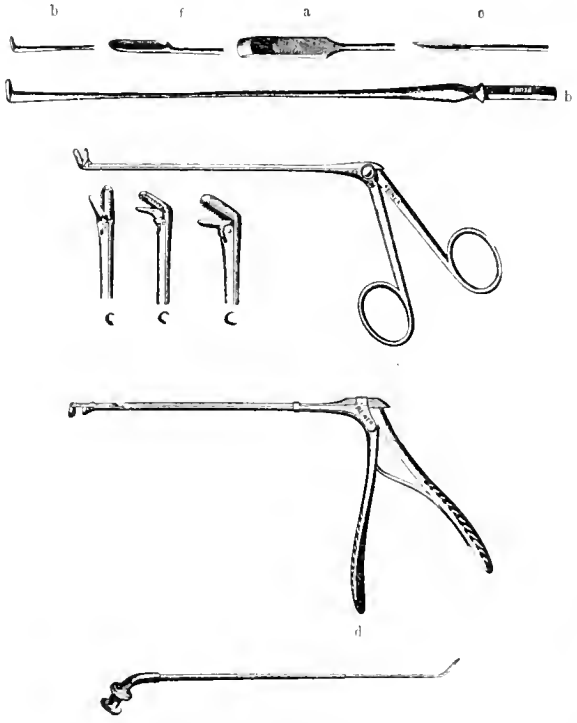


Fig. 5.—Instruments used by Hirsch in the hypophysis operation; *a*, chisel; *b*, large and small right angled elevators; *c*, straight and upward curved bone forceps; *d*, bone rongeur; *e*, knife for incising the dura; *f*, curette; *g*, needle for infiltration of the anterior sphenoidal walls. (Three-fourths natural size.)

Tilney concludes that the hypophysis is probably functionally active, but that the significance of the neural lobe has not yet been determined. There is, perhaps, sufficient evidence to show that the secretory product of the basophiles passes into the cerebrospinal fluid, while that of the acidophiles enters the blood. There are two groups of investigators. One group contends that the hypophysis is indispensable to life and that its removal causes a definite symptom complex which rapidly leads to death. The other group is directly opposed to this and believes that the hypophysis is entirely rudimentary and without function.

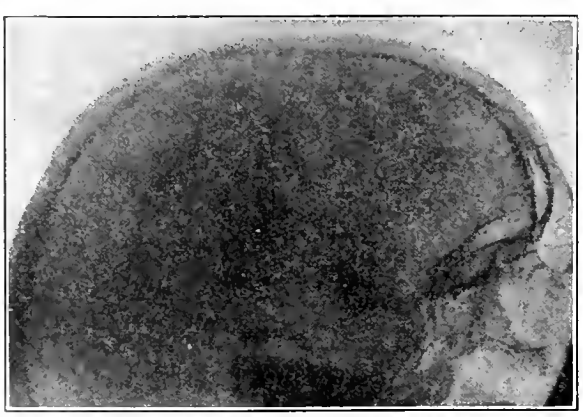


Fig. 6.

The relation of the hypophysis to the brain membranes is important. The hypophysis possesses no pia or arachnoid, but lies in a pocket which is formed of two layers of dura, namely, the diaphragm sellæ and the dural covering of the saddle fossa. The delicate brain membranes cover only the stalk of the hypophysis and reach only as far as the diaphragm sellæ. Therefore, in the hypophysis operation the subarachnoidal space is not opened. The anterior lobe develops from the mouth cavity and ascends from the roof of the pharynx to attain its final position. Thereby it is explained why one finds hypophysis tissue so constantly present in the vault of the pharynx, which Erdheim called "the pharyngeal hypophysis."

There are three forms of disease (tumors) of the hypophysis:

(1) Acromegaly, described first by Pierre Marie in the year 1886, which manifests itself by an increase in size of the hands, feet, nose, and tongue, and in thickening of the lips. It is usually associated with disturbances in the function of the sexual glands and disturbances of vision may also be present.

(2) Degeneratio adiposogenitalis, a disease picture which Fröhlich first described from the Ambulatorium of von Frankl-Hochwart in the year 1902. It exhibits a fatty degeneration of the organism, usually acompanied by disturbances in the function

Fig. 7.

of the sexual glands and trophic disturbances, such as loss of the beard, and of the hair in the axilla and on the pubis. Disturbances of vision may also be present here.

(3) Disturbances of vision without striking general symptoms. The disturbances of vision may advance to total blindness. Usually there is also an alteration in the function of the sexual glands, and frequently slight struma is found. Headache may be present in all three forms of disease in varying intensity, but may also be completely absent. It is interesting and important that acromegaly is associated with tumors of the anterior lobe, and, as Benda showed, chiefly with adenoma or adenocarcinoma. Most probably a hypersecretion is present.

The disease-picture of degeneratio adiposogenitalis may be produced by other tumors. According to Erdheim, the tumor is not in itself the cause of fatty degeneration, but pressure against a center which Erdheim supposes is situated at the base of the brain and Fischer in the posterior lobe of the hypophysis.

The diagnosis of hypophysis tumor is based upon the determination of acromegaly or fatty degenera-

tion occurring with disturbances of sexual function, and with visual and trophic disorders. The disturbances of vision in hypophysis tumors show a diminution of the acuity of vision and contraction of the visual field in the form of bitemporal hemianopsia. The latter when present to a severe degree should arouse a suspicion of hypophysis tumor. An extremely important aid in the diagnosis of hypophysis tumors is the *x*-ray, as Oppenheim first pointed out, since it makes possible the determination of the hollowing out of the saddle by the tumor. However, the *x*-ray determination of the hollowing-out process is not alone sufficient to diagnose hypophysis tumor, since this picture may also be produced by other diseases, for example, diffuse or circumscribed hydrocephalus complicating a chronic circumscribed meningitis, and other tumors in other parts of the brain. Headache, sleeplessness, and low temperature are frequently present, but are not constant in hypophysis disease. The treatment of hypophysis tumors like the treatment of other tumors is only surgical. Thyroid tablets, iodine, and hypophysin tablets have only a transitory influence. The operative methods are either intracranial or extracranial. Horsley was the first to undertake the hypophysis operation. He operated by the intracranial method through the middle fossa of the skull. But this surgical attack signifies nothing, since a short description but no certain statements are given concerning the result obtained. A second intracranial route carried out through the anterior cranial fossa was described by Krause. However, in so far as I know, he did not operate upon the hypophysis but removed in one case a foreign body (projectile) from the sella region, and in another case a fibrosarcoma from this region, the latter operation being followed by a fatal termination.

Surgical Considerations.—Schloffer, in the year 1906, published a paper concerning operations on the hypophysis, in which he discussed thoroughly the physiology and pathological anatomy of the hypophysis and came to the conclusion after study of all the known operative methods for exposure of the hypophysis that the extracranial methods are the easiest and most satisfactory to carry out. As a matter of fact, one year later, 1907, Schloffer operated upon a patient for hypophysis tumor, under general anesthesia, by the nasal route and succeeded in a partial removal of the tumor. He made his incision on the left side of the external nose and turned the entire nose toward the right. He then removed all turbinates on the left and the septum, after which the inner wall of the left antrum of Highmore and a part of the nasal process of the left upper jaw were taken away. After exenterating the ethmoid cells, he opened the sphenoidal sinus and removed the posterior wall of the sinus, gaining direct access to the tumor.

The patient operated upon by Schloffer withstood the operation very well, but died two and one-half months later from symptoms of brain pressure. Hochenegg was the first to operate upon a patient with acromegaly and to show the satisfactory result in that the symptoms caused by the hypophysis enlargement decreased. Since that time the operation has been performed by various general surgeons, among them von Eiselsberg, in this or in a modified form until at the present time (1911) it has been carried out fifty-three times, thirty-seven with a good result and twenty-one with a fatal issue. The mortality amounts to 39.6 per cent.

The operative results demonstrated: (1) that the exposure of a hypophysis tumor according to Schloffer's method was not especially difficult; (2) that meningitis does not necessarily take place, in spite of the fact that the tumor is directly exposed to the air in the depths of the nasal cavity; and (3) that the partial removal of the hypophysis gives no appreciable disturbance, but on the contrary in cases with trophic disturbances and acromegaly favorable results are to be obtained.

In thirty cases operated upon by the Schloffer method, or after the same principle, there were eleven deaths, three of which were due to meningitis, one to aspiration pneumonia, and the other deaths were supposedly caused by prolonged narcosis and great loss of blood.

Hirsch says: "I followed the development and the results of Schloffer's method with very great interest when I saw that the general surgeon was attacking the region which for a long time had belonged to the rhinologist. It was to me, as a rhinologist, perfectly clear that the nucleus of the Schloffer operation lay in working within the sphenoidal sinus, and that the great surgical attack upon the external and internal nose only served to afford a wide exposure of the sphenoidal sinus; and, moreover, that this preliminary manœuver necessitates the lengthy narcosis and the severe bleeding which during the operation may produce asphyxia and after the operation endangers the life of the patient through anemia, heart weakness, and pneumonia. The exposure and wide opening of the sphenoidal sinus is, however, a measure which can be carried out by the rhinologist by the endonasal route under local anesthesia without very much bleeding. It seemed possible, therefore, that after opening the sphenoidal sinus the rhinologist could also easily reach the tumor."

Hirsch saw that it was impossible to remove a hypophysis tumor completely by Schloffer's method, as was proven in Schloffer's first case, which died two and one-half months after operation, and in which the tumor was seen to have been only partly exsected. An especial difficulty which is mentioned by Schloffer and also by von Eiselsberg seems to have been orientation in the depths of the wound owing to the difficulty of establishing satisfactory landmarks and also because of the bleeding into the wound. With these disturbing and unsatisfactory elements in mind, Hirsch says: "I came to the conclusion that removal of hypophysis tumors could be carried out by opening the sphenoidal sinus endonasally, and that this exposure must be carried out in two operative acts: (1) wide opening of the sphenoidal sinus through the nose, and (2) exposure of the hypophysis tumor by chiseling away the bone in the sphenoidal sinus and incising the dura. The method which I used in my first case was based upon the wide opening of the sphenoidal cavity within the nose, as Hajek first performed it. After opening the sphenoidal cavity, which, as is known, must be carried out in several sittings, since the middle turbinate must be first removed, then the ethmoid, and finally the anterior wall of the sphenoid, when the bony wall of the excavated sella turcica, in which the tumor lies, comes into view. This is chiseled away and its floor removed as far as possible. Thereupon the dura becomes visible and may be incised.

"Case I.—After this method, I operated upon a woman thirty-five years old in the clinic of Hofrat von Wagner on account of disturbances of vision.

A cystic hypophysis tumor was found, which I emptied, and from the wall of which I removed a small piece. The patient, who was blind in the left eye, and had in the right eye only 1/30 vision, obtained within seven months normal vision in the right eye. The left eye remained amaurotic. The field of vision also increased very markedly. The patient died sixteen months after the operation in an epileptic attack. The epilepsy, from which she had suffered for several years, had no definite connection with the tumor, according to the opinion of the neurologists. Post-mortem section showed that the cyst had not refilled. The improvement in vision was especially marked in this case and continued to the end of life. This was explained through the fact that the pressure of the tumor affected a great number of optic fibers, some of which were destroyed, and consequently improvement took place only in that part of the retina supplied by the undestroyed fibers. There was, however, no improvement in the patient's left eye because the left optic nerve was completely atrophied. The cyst was carefully examined histologically in a series of sections. It consisted merely of connective tissue ½ mm. in thickness, of a portion of the dura ½ mm. in thickness, and of a glandular portion from the pituitary body 1 mm. in thickness. The fluid which came away after incision of the cyst was of an intense bloody color and contained blood corpuscles and a brownish pigment substance. There was no sign of any malignancy."

From the report of Hirsch's first case, the completion of this work lasted about six weeks, which in the light of the newer technique was quite unnecessary. This delay occurred because it was found that after the sphenoidal sinus was opened it was not possible to reach the hypophysis tumor with the instruments at hand, and hence the work had to be interrupted until the proper instruments could be constructed. Moreover, it seemed unnecessary to expose the dura in one sitting and wait until the next before opening the same. This was done, however, at the request of Hofrat von Wagner, who considered that the danger to the patient would be much increased by splitting the dura.

Comparing the two methods, that is to say the method of Schloffer and the method just briefly sketched, the Schloffer method demanded general narcosis lasting an hour and a quarter; the endonasal method was done under local anesthesia. The Schloffer method required the difficult and disfiguring operation of removing the nose; the endonasal method no such unsightly and tedious operative attack. Moreover, in the Schloffer method there was great loss of blood, making possible only a partial removal of the hypophysis tumor; by the endonasal method there was very little loss of blood, and the exposure was equally good. The danger from meningitis was about the same in the two methods.

Hirsch found that his method was objectionable because it was carried out only on one side; that the opening to the hypophysis tumor should be carried out laterally from the middle line; that the exposure of the tumor was less sufficient than by the method of Schloffer, and finally that the danger of infection was greater. He says: "I sought, therefore, for a new method which could be carried out in a shorter time. . . . This method depends upon Killian's submucous resection of the nasal septum, but the resection is extended to the posterior part of the vomer, to the perpendicular plate of the ethmoid bone, to the rostrum sphenoidalis, to the anterior wall of both sphenoidal cavities, and finally to the sphenoidal septum. Whereupon the hypophysis tumor may be laid free in its entire extent."

The detailed technique of this second method is given under a description of Hirsch's second case, and is essentially is follows:

"*Preparation of the Patient.*—A half hour before beginning the operation the patient receives an injection of .01 morphine hydrochloride. This done, I apply 20 per cent. cocaine solution in the form of a spray to the nasal mucous membrane, and when this has become no longer sensitive I place cotton tampons soaked in the same cocaine solution in each nasal cavity. The face, external nose and chin are then washed with soap, with sterile water, and finally with benzine. The cocaine tampons are now removed and the septum and turbinates are painted with 30 per cent. cocaine solution combined with tonogen. Following this Schleich's solution No. 2 with tonogen is injected, after which the operation can be begun. By means of a syringe and with a long upward curved needle, I infiltrate both sides of the anterior sphenoidal wall and the posterior areas of the septum, and continue the infiltration of the remaining septal mucous membrane with a straight needle as far forward as the membranous septum as is done in Killian's submucous operation. I use on the whole about 2 c. cm. I wait about ten minutes for the solution to act, and meanwhile introduce cotton tampons soaked in 1 per cent. bichloride solution in the nasal vestibule for disinfection. To the left of the patient I place a table with the sterilizing apparatus and the light. On my right hand I place the instrument table and two basins with sterile water, one basin to cool off the instruments, which must be repeatedly boiled during the operation, and the second for sponging off the blood from the used instruments. Sterile gauze in strips 10 cm. long serve to wipe away the blood in the nasal cavity. Large pieces of gauze serve to wipe off the patient's face and to place the head mirror in position from time to time. Finally I have ready the necessary tampons for posterior plugging in case of bleeding."

The technique of the first part of the operation varies in no essential respect from that ordinarily used in the submucous resection of the nasal septum, as already mentioned. Therefore it is not necessary to describe it here since this operation is so well understood. After practically a complete removal of the septum it is necessary, according to Hirsch, "to expose the anterior sphenoidal wall by elevating the mucous membrane on both sides of the posterior edge of the vomer where it articulates with the sphenoid. This is done very easily, and when it is finished one proceeds with the elevation until the elevator passes through the sphenoidal opening into the sphenoidal cavity. The posterior part of the vomer and the rostrum sphenoidalis is now removed from within this mucous membrane sac and the anterior sphenoidal wall is broken through with a chisel. The opening is enlarged with bone forceps, after which the septum between the two sphenoidal cavities is removed and the posterior wall of the sphenoidal cavity is laid free. The sella turcica is then cut through with a chisel, and after splitting the dura with a knife the hypophysis comes into full view. In this way I have chiseled off the Turk's saddle in several cadaveric skulls. In some skulls in which the middle turbinate extended far toward the median line and the two mu-

cous membrane flaps on this account could not be sufficiently separated, I had to remove the free margins of both turbinates."

"Case II.—A woman forty-six years old with disturbances of vision and cessation of the menses. I simply exposed the mass and saw part of the tumor at the cut margin of the dura. I removed no part of the tumor, following the wish of Hofrat von Wagner, in whose clinic the patient was. In spite of that, the vision of the left eye improved from 6/60 to 6/18. The acuity of vision in the right eye was and remained normal, while the width of the visual field remained unintluenced. This improvement in the left eye continued for about seven months, but the patient had to be operated upon a second time (which is recorded as Case VIII in the full report). The improvement to 6/18 vision now retrogressed to the original 6/60, and the patient requested a second operation. I removed a piece of the tumor about the size of a cherry. However, immediately after the operation the patient became unconscious and died a few hours later. Postmortem showed a large hypophysis tumor which had grown toward the third ventricle. Blood vessels were opened at the operation, the tumor tissue was covered with blood, and fluid blood entered the third ventricle. No other wound was found. Histological examination showed that the tumor was a vascular malignant adenoma.

"For the separation of the mucous membrane flaps, the usual short nasal speculum sufficed, but occasionally I used also the long-bladed nasal speculum (as is used in median rhinoscopy) in order to examine the ostia sphenoidalia. In working between the separated mucous membrane flaps there was a difficulty after removal of the anterior part of the septum. I lost my orientation as to which direction I must separate the mucous membrane further in order to come to the anterior walls of the sphenoidal cavity and not enter the lamina cribrosa. I found that by keeping near to the floor of the nose and loosening the mucous membrane from both sides of the vomer as far as the choanæ and also to that part of the vomer which forms the septum between the choanæ, this difficulty was lessened. After removal of this piece of bone I found upon introducing a probe between the flaps that the mucous membrane of the septum which lay in the region of the pharynx was yielding. Above that one felt a resistance which must be the anterior sphenoidal wall. Now I had the direction and the region where the mucous membrane must be pushed aside in order to reach the anterior walls of the sphenoidal cavity without coming into contact with the lamina cribrosa. The determination and opening of the hypophysis tumor offered no difficulty. . . . The chief factor in the endonasal submucous method is the anesthesia. All parts of the nose which may be touched by instruments during the operation must not only be cocainized, but also infiltrated with Schleich's solution; above all, the septum in its entire extent and the anterior walls of the sphenoidal cavity. I recommend also to infiltrate the posterior ends of the middle turbinates, since during the elevation of the mucous membrane from the anterior sphenoidal wall these parts may be pressed upon. If the anesthesia has been carefully done, the patient remains quiet during the operation and the physician can also rest easy in those cases in which the surgical attack lasts an unusually long time through unforeseen hindrances. Before opening the sphenoidal cavity, it is recommended to elevate the mucous membrane so that the ostia sphenoidalia become visible before undertaking the removal of the wall for the following reasons: (1) The bone is usually thinnest around the openings, and (2) through systematic removal of the sphenoidal walls toward the middle line the comparative situation of the two openings may be determined and any asymmetry and deviation of the sphenoidal septum may be seen. The removal of the sphenoidal septum is continued to the hypophysis tumor. If a portion of bone remains behind, it must be removed by a chisel before the operator can attack the real bone shell of the hypophysis tumor. Thereby the chiseling is made more difficult and one gets the impression of thick bone. I follow the example of Cushing, and because of the work of S. J. Crowe, in the use of urotropin after hypophysis operations. Crowe has demonstrated that after administration of urotropin formaldehyde appears in the cerebrospinal fluid and disinfects the same."

The instruments necessary for the hypophysis operation are as follows: (1) All those in common use for the submucous resection of the nasal septum according to the opinion of the operator. (2) The hooks and sphenoidal forceps used by Hajek. (3) A long elevator. (4) A septum forceps with blades 13 cm. long. (5) A chisel. (6) A large and small right-angled elevator. (7) A straight and an upward bent bone forceps. (8) A bone rongeur. (9) A knife for the dura. (10) Various sized curettes, one the size of a pea. (11) A syringe for infiltrating the anterior sphenoidal wall.

"After my experiences," says Hirsch, "it can be asserted that the endonasal submucous hypophysis operation not only compares very favorably with the extranasal surgical methods, but is superior in many respects. I am thinking here not only of Schloffer's method, but also of all other similar methods which have been described."

"Case XII.—In this case the endonasal hypophysis operation produced quite an extraordinary result, since the patient was a man sixty-nine years old, and a significant improvement of the visual power was obtained. The patient within eight months had lost his vision, excepting a small remnant. Before the operation he could count fingers with the right eye at four meters, the left eye perceived merely movements of the hand. After the operation, in which a soft cyst was opened and tumor tissue was removed, the patient obtained in the right eye a seeing power of 0.2. The left eye could now count fingers. The field of vision, which could be determined only in the right eye, is very limited, but in the nasal half is almost normal in extent. (The temporal half is still wanting.) On the left, the field of vision has returned in the upper nasal quadrant. I can assert that this result could have been obtained by no other method, since the patient could not have withstood a narcosis."

Finally, Hirsch reports one case with fatal issue, in which the wrong diagnosis had been made by the physician who submitted the case for operation. He says: "I operated upon another case in which the common signs of disturbances of vision, cessation of menses and *x*-ray picture showing excavation of the sella turcica led to the diagnosis of hypophysis tumor. The patient was advised because of this diagnosis to undergo operation. I made an opening about the size of a cent in the floor of the sella turcica and exposed and incised

the dura. The serous fluid came away. I believed at the time that a cyst was present. The serous fluid continued to come away, and a short time after the operation the patient became somnolent, and I began to suspect that the subarachnoidal space had been opened. The patient died two days later. At post-mortem a flattened but otherwise normal hypophysis was found. The diaphragma sellæ was markedly excavated in its anterior part adjacent to the sella floor. The floor of the third ventricle was adherent to the diaphragma. Under such anatomical conditions, by cutting into the dura the ventricle must necessarily be opened. It was probably a circumscribed hydrocephalus of the third ventricle. Meningitis was not present.

"Among the cases operated upon, the three forms of hypophysis tumor were encountered, causing the symptoms enumerated above: Acromegaly, degeneratio adiposogenitalis, and visual disturbances without striking general symptoms. All cases showed a significant improvement in symptoms (visual disturbances, acromegaly, and headache) after the operation. The fatal results which occurred after the operation would have also occurred after any other of the hitherto described methods and could not be avoided. The endonasal method is applicable to all cases in which the tumor forces the sella turcica forward toward the sphenoidal cavity. Good results are to be expected if the tumor for the most part develops only within the sella turcica or is of a cystic nature. In exceedingly great intracranial development of the tumor this operation, as well as all other methods, can be followed only by insignificant results. After what has been described above it is obvious that rhinology has won for itself in the endonasal hypophysis operation a new, interesting, and important field, and therefore it is now the business of nasal specialists, in selected cases, to take permanent possession of the newly won territory."

On September 15, 1911, Hirsch operated upon a thirteenth case of hypophysis tumor on account of visual disturbances. The visual disturbances have significantly improved.

On October 11 he operated on a fourteenth case in the same way on account of visual disturbances. This patient has also become quite well.

14 Central Park West

ADDITIONAL NOTE UPON A SO-CALLED PARASITE OF YELLOW FEVER (SEIDELIN).

By ARISTIDES AGRAMONTE, A.B., M.D.,

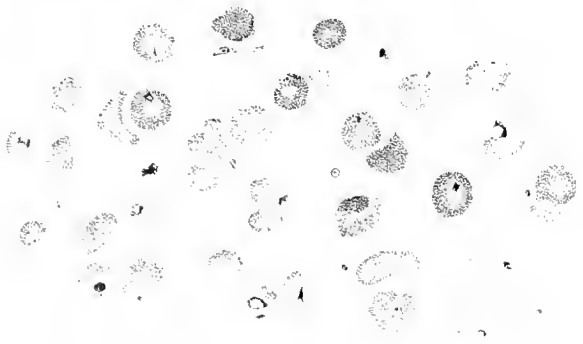
HAVANA, CUBA.

PROFESSOR OF BACTERIOLOGY AND EXPERIMENTAL PATHOLOGY, UNIVERSITY OF HAVANA; PRESIDENT, BOARD OF INFECTIOUS DISEASES; MEMBER OF THE NATIONAL BOARD OF HEALTH, CUBA.

Since writing my "Notes" referring to an article in the Yellow Fever Bureau Bulletin, No. 7 (Liverpool, England), in which a new "parasite" of yellow fever is offered for consideration, I have been engaged upon a study of blood films, secured from the various sources which shall be presently described, in a good proportion of which I have found bodies identical with those which have been accused of being the causative agents of yellow fever.

In my paper, above mentioned, I could do no more than offer a criticism of Dr. Seidelin's claims in a general way: I could not present any objective evidence against the specificity of his "organism," because my experience with the Giemsa stain, in the search for other parasites than malarial, was at that time extremely limited. Notwithstanding, I had had opportunities to appreciate its instability, the lack of uniformity in the results, even when apparently the same details of technique are carried out in the staining process, so that I did not hesitate to express as one of my conclusions, from the examination of the few preparations exhibited, that the bodies shown by Dr. Seidelin were likely to be "nuclear and proptoplasmic fragments."[1]

Subsequent investigation has demonstrated that my surmise was fundamentally correct and the so-called parasite of Seidelin can be reproduced, as far



Composite Drawing of Blood-findings Simulating Protozoon Bodies. Treated by the Giemsa Stain, Rapid and Slow Processes. X1800.

as cell fragments can be reproduced, with regard to size, coloring, and general appearance, in blood films obtained from other pathological conditions, in which the existence of yellow fever infection is absolutely untenable. Nor has the experience been restricted to my own researches for, entirely independent of my work, Dr. Cartaya in Las Animas Hospital Laboratory has found the identical "germs" in a case of human glanders, as well as in certain biliary infective processes; Dr. Guitéras, who has examined Cartaya's films, is also of the opinion that the bodies found there are the same as those shown to us by Seidelin in his preparations last winter.

It may be needless to say, perhaps, that these bodies cannot be demonstrated in a good number of blood specimens examined and only once have I seen a few in what may be called, from a hematological standpoint, a normal individual. My blood smears, with Seidelin's yellow fever parasite, were collected from the following sources:

One case of goitre, after operation attended by severe hemorrhage (collected by Dr. Lebredo at Hospital No. 1).

One case of measles; girl 15 years old; in the eruptive stage of the disease.

One case of mild biliary obstruction (gastroduodenitis?) at Las Animas Hospital.

Three cases of severe icterus, not possibly yellow fever (two at the Covadonga and one at the Benefica Sanatorium).

One case of uncinariasis, with the usual marked anemia.

One case convalescing from typhoid fever, who had suffered several intestinal hemorrhages during the attack (at the Covadonga Sanatorium).

One case of severe icterus (Weil's disease?) at the Benefica Sanatorium.

One case of urticaria; a woman, 32 years old, apparently otherwise normal.

On the other hand, it has been impossible to find these unusual bodies in preparations made from 27

normal individuals (18 men, 7 women, and 2 children) in those from grippe (3 cases), chronic dysentery (1 case), infectious icterus (2 cases), typhoid fever at various stages (3 cases), in any of four blood smears from a case of yellow fever at Bahia (Brazil). These specimens were collected at the fourth day of the disease. I have had no opportunity to examine other blood films from yellow fever, still the experience obtained otherwise inclines me to the opinion that the elements described by Seidelin may, indeed, be frequently seen in that disease; but from this, to associating them in any capacity with the etiological factors concerned in yellow fever, there is such a great distance, that it may not be easily bridged over.

When once we realize that these bodies are nothing but nuclear and protoplasmic fragments, chromatoid and basophilic elements, and thus integral parts of the blood itself, we can well understand the reason for many of the points so faithfully presented in Dr. Seidelin's description of his supposed parasites. One of these, and because of which I was averse to accord to them the rôle of causative agents of the disease, was their dissimilarity of size and form even when found in the same drop of blood; the fact that no two of these bodies were exactly alike, except perhaps in the case of the small chromatic points, the so-called "marginal dots" (Jolly bodies?), which Theiler has turned into his *anaplasma* of cattle and which sometimes appear with the selective stains even in normal blood. But the bodies that apparently contained a certain amount of protoplasm, which Seidelin considers as the most typical *paraplasmata*, failed in that uniformity of contour and proportional contents which we are accustomed to see in protozoan bodies. Among the "parasites" drawn by Seidelin there is one, however, the counterpart of which I have found twice; it consists of a rather square bit of basophilic substance, about two microns in diameter, the third part of which is occupied by a more or less crescentic chromatoid nucleus, simulating the blepharoplast of a protozoon.

Another fact which is also explained is why these elements have been seen by Seidelin in yellow fever blood, obtained rather late in the disease, after the fourth day and not during the first three days; the reason, to my mind, is that the hematopoiëtic activities of the individual are then most pronounced, after actual hemorrhages, hemolytic or other blood-destroying processes have been at work and the blood-forming powers are stimulated to produce, as is well known, new blood with its fair amount of nucleated erythrocytes, normoblasts, and the corresponding proportion of white blood cells; it is then we find an unusual quantity of nuclear elements which on staining give the chromatin reaction in a manner more or less pronounced, according, as I suggest above, to the specific details of technique employed, not only with the Giemsa, which is one of the simplest used and hence the preferred in protozoological investigations, but as well with all the various other modifications of the Romanowsky type of stains.

Yet another of Seidelin's findings which I have been enabled to corroborate is the scarcity of these bodies in whichever blood specimen they may occur. In some slides barely two or three may be seen after hours of painstaking search, and this is particularly so with regard to the larger and more protozoon-like fragments, so that a collection of half a hundred "parasites" represents the work of as many hours. This infrequency in the blood is readily explicable when we think of the eventual origin of their existence and the very fact of their insignificance.

I believe with Shilling (Torgau) that many investigators in the field of Tropical Medicine have mistaken these elements as the causative agents of the particular disease which they may have been studying at the time. He mentions several who may have committed this error, but with regard to Seidelin he specifically says:[2] "It is entirely inadmissible that one may declare a case of yellow fever, for the only fact that it presents those 'parasites,' (Seidelin)."

And in a footnote to this page, he adds: "The histories themselves, presented by Seidelin, make their etiological nature improbable. The diagnosis based only upon the finding of these 'parasites' would be too far fetched."

In this excellent work of Shilling's we find that many of his drawings of these blood elements are as much like Seidelin's "parasites" as any two fragments of anything that cannot be mathematically broken up can be.

A very interesting contribution to the elucidation of this subject may be read with benefit by researchers in the Tropics, where blood conditions, both in the native and the European as well, are usually far from normal as we understand them; it is found in the Fourth Report of the Wellcome Laboratory (Khartoum, Egypt) from the pen of Dr. Andrew Balfour. The interpretation of microscopic findings must be kept well safeguarded from the personal equation: else one is liable to become the victim of some of the many fallacies pointed out by that eminent hematologist.[3]

My work has been necessarily restricted to human blood, the time at my disposal not allowing the extension of research beyond the object in view, which was mainly to corroborate or disprove the exclusive existence of those bodies in the blood of yellow fever cases. Similar findings have been announced in other mammalian, as well as in fowl and reptilian blood, which no doubt are of interest to students of hematology; most of them, if not all, may be found reported in the *Folia hematologica* of Pappenheim.

During the work entailed in the preparation of this "Additional Note" I have demonstrated, in a manner quite satisfactory to my colleagues here and to myself, that the "parasites" of yellow fever said to have been contained in the stained slides shown by Dr. Seidelin cannot be accepted as such, from the fact that evidently blood-platelets, chromatin residues, desintegrating cell remnants, nuclear and protoplasmic fragments often present the same hue and outline when treated by the selective stains and principally by the Giemsa reagent, and unless Dr. Seidelin can bring forth other and more substantial proofs of his contention, we must reverently but decidedly lay his "parasite" in the grave which holds so many disappointments that have attended, heretofore, the researches of discoverers, certainly as earnest and enthusiastic.

A composite drawing of the bodies demonstrated accompanies this writing.

REFERENCES.

1. Agramonte, A.: "Notes Upon a So-called Parasite of Yellow Fever" (Seidelin), MEDICAL RECORD, March 30, 1912.

2 Shilling, Torgau V.: "Über die Bedetung neurer

hamatologischer Befunde fur die Tropenkrankheiten," *Arch. f. Schiffs und Tropenhygiene*, Bd. 16, Jan. 1, 1912.

3. Balfour, Andrew: "Fallacies and Puzzles in Blood Examination," Fourth Report of the Wellcome Research Laboratories, Vol. A, Medical, Khartoum, Egypt, 1911.

CALLE K. VEDADO, .

BULLOUS DERMATITIS FOLLOWING VACCINATION, WITH A REPORT OF A CASE.*

BY J. L. KIRBY-SMITH, M.D.,

JACKSONVILLE, FLA.

IN recent years quite a few cases of bullous dermatitis have been reported in the current medical literature as having followed vaccination. Among the well known dermatologists who have observed this condition, and have brought up the question of vaccina being the causative agent in the eruption, are: Bowen of Boston who reported in the *Journal of Cutaneous Diseases* in 1901: "Six cases of billous eruption resembling herpetiform dermatitis following vaccination, in children between the ages of five and ten, and appearing within from one to four weeks after vaccination, and lasting from months to years; Dyer of New Orleans also makes a report of the same condition at an earlier date (1897) in the *New Orleans Medical and Surgical Journal;* Pusey of Chicago, previous to Dyer, reported a similar condition in the May (1893) number of the *Tri-State Medical Journal;* Stelwagon in the *Journal of American Medical Association*, February 22, 1902, in an article, "Vaccinal Eruptions," reports bullous dermatitis following vaccination; others who have reported cases are Howe of Boston, who reported a series of ten cases, and Sequiera in 1902 showed before the London Derma-

Fig. 1.

tological Society a case of pemphigus following vaccination. Schamberg in his latest treatise on the "Eruptive Fevers" reviews the subject of vaccina-

*Read before the Duval County Medical Society, March 5, 1912.

tion as being the causative factor in certain bullous eruptions; he states that, "In relatively rare instances vesicobullous eruptions, variously designated as acute pemphigus, bullous dermatitis, herpetiform dermatitis (Duhring's disease) have followed

Fig. 2.

vaccination. While we have found no positive proof of a causative relationship between vaccina and these eruptions, they have been reported by careful observers in a sufficient number of instances to warrant the assumption that the antecedent vaccination has been of some etiological moment." To quote from Stelwagon in his treatise on "Diseases of the Skin," under the head of "Etiology of Herpetiform Dermatitis," we find, "That some septic or otherwise toxic agent is sometimes responsible for herpetiform dermatitis (or at least a similar or allied condition showing often a combination of the symptomatology of erythema multiform, herpes, pemphigus, and resembling herpetiform dermatitis), seems shown by the occasional examples following vaccination, as observed by Dyer, Pusey, Bowen, myself, and others." Howe, in his report of bullous eruptions following vaccination, was inclined to attribute the eruption to the infectious material introduced at the time of, or after, vaccination. The cases occurred at a time when smallpox was prevalent in epidemic form, and when thousands of vaccinations were being performed.

Case History.—Roy Crozier, referred by Dr. John E. Boyd of Jacksonville, May, 1910; age as given nine; family history: father and mother both living, four children (boys) who have always been strong and healthy; in fact, the whole family are apparently in good health; there is no history of any skin disease in the past. The patient is the eldest child, has had the best of health; whooping cough when an infant is the only disease of childhood; one year ago was treated for "hook-worm," report from the State Board of Health Laboratory had previously shown the presence of the ova of Uncinaria;

later examination showed the stools free from the parasite.

According to the statements of the mother, the child was vaccinated on the arm one year ago, by the family physician; the vaccination was successful; ten days after the inoculation a number of clear water blisters made their appearance on the arm in the neighborhood of the vaccine pustule; a few days later similar lesions appeared on the body, and then on the face. From this time until seen by me, in May, 1910, the patient has never been entirely free of the eruption. The mother states that "as soon as one crop of blisters would dry up and the crusting separate, the disease appearing to be about over with, other crops would make their appearance over night; during all this time the boy was in good health; he complained of intense itching at times, especially at the time of occurrence of new lesions." Until recently the disease has not prevented him from taking part in the life of chil-

Fig. 3.

dren. When first seen in May, 1910, there were a number of groups of vesicobullous and vesicopustular lesions on the body and extremities (as shown in Fig. 1), especially around the thighs and genital region, and a few scattered lesions on the face and neck; though the predominating lesions were vesicular, some were pustular; these no doubt were secondary, due to infection from scratching; others were ruptured and a crusting resulted. There was some light colored pigmentation present and slight superficial scarring from previous lesions; there was a decided tendency toward grouping; this is shown in Fig. 1. Itching at times was complained of as intense; with these characteristic symptoms present, a diagnosis of herpetiform dermatitis was made. Acute pemphigus and bullous impetigo were both considered in a differential diagnosis, but the latter was excluded after considering the history of the frequent recurrences over such a long period of time, and definitely so by the absence of pyogenic bacteria in the serum from the vesicles and bullæ. Acute pemphigus was excluded by the decided grouping of the lesions and the presence of the intense itching. Later, however, the recurrences of the eruption, as shown in Figs. 2 and 3, made this diagnosis appear to be more correct than that of herpetiform dermatitis. A complete physical examination revealed nothing abnormal; a number of urinalyses were made, the only thing of interest found being the constant presence of indican. Examination of the blood showed 7 per cent. eosinophilia. Mention is here made of the long prepuce of the patient, which was found to be adherent to the glans, and I think that by circumcision the occurrence of the eruption may be controlled, as some cases of herpetiform dermatitis in children have been cured by this procedure (Stelwagon). Treatment as a whole has been very unsatisfactory. The mother has refused to allow circumcision, internal medication has had very little effect, full doses of arsenic in Fowler's solution were tried, also quinine and mercury; the best results obtained have been from injections of 2 grains of sodium cacodylate twice a week over a period of six weeks. Last summer the patient remained free from the disease for two months. This is the longest period he has been free of the lesions since the first occurrence eighteen months ago. The present eruption is the most severe (see Figs. 1 and 2).

Circumcision was performed by Dr. W. P. Dey of Jacksonville, on March 10. The prepuce was found to be firmly adherent to the glans penis; had to be dissected free. At the present time, May 28, the patient has been free from the eruption five weeks.

25 West Church Street.

A MARKED CASE OF FACIAL ASYMMETRY OCCURRING IN A CASE OF SCROFULODERMA.*

By M. ZIGLER, M.D.,

NEW YORK.

INSTRUCTOR IN GENITOURINARY SURGERY IN THE POST-GRADUATE MEDICAL SCHOOL AND HOSPITAL; CHIEF OF THE GENITOURINARY CLINIC OF LEBANON HOSPITAL; ASSISTANT DERMATOLOGIST OF LEBANON HOSPITAL DISPENSARY.

Tillie G., age twelve years, Russian parentage. The father and mother are apparently in good health. Two years ago the patient had an illness which lasted several months and was characterized by fever, chills, and cough. Six months ago she noticed an eruption on her chest and right buttock. These lesions have persisted ever since.

Status Præsens.—Patient came to the skin department of Lebanon Hospital (Dr. William S. Gottheil's service) about April 15, 1911. Physical examination showed the following: Child appears of normal mentality, even bright. On inspection of head and face one is immediately impressed with the marked differences between the right and left sides of her face, the former being very much more prominent and protruding considerably forward, while the latter appears to recede. She turns her head to the right as her natural posture. In addition, her features are all in an oblique plane, slanting at an angle of 15 degrees from the right side, downward to the left, the right eye and ear being on a higher plane than the left. The right ala nasi and the right side of her mouth are also on a higher plane than the left. No facial paralysis present. Spinal column shows a lateral curvature.

*Case reported at a meeting of the Lebanon Alumni Society.

On palpation of the right side of the face considerable thickening of malar and superior maxillary bones is found, especially marked over the zygomatic arch.

Radiograph by Dr. I. J. Landsman shows the right face is higher than the left, an elevation of about 15 degrees. The right nostril is higher than the left, the right eyeball correspondingly higher. The right antrum of Highmore is smaller than the left. The maxillary bone on right side is somewhat more dense. Fundus examination by Dr. C. Barnert gave negative findings.

Physical examination of the chest shows at the upper part of the sternum a heart-shaped lesion covered with crusts, which seven days ago was covered with hypertrophic granulations. On closer examination we find this large lesion is made up of four isolated lesions which have coalesced to form one. Toward the upper and left extremity of the

From a photograph showing the facial asymmetry and the chest lesion.

right buttock near the intergluteal fold, there is situated an irregularly oval shaped ulceration with a somewhat depressed center, covered with grayish yellow crusts, oozing a thin serum on removal of the crusts. This lesion, as well as the one on the chest, is not painful and is non-inflammatory in character. The pathological report was that there was a negative Wassermann reaction, and a positive von Pirquet.

Treatment.—Patient received balsam Peru dressings. Later several applications of solid carbon dioxide, together with pill creosote internally, under which medications the lesions rapidly healed.*

This case is reported because of the rarity of such marked facial asymmetry and also because of its occurrence in a scrofulous patient.

*Since this article has been written the chest lesions have reappeared.

1097 Forest Avenue.

A CASE OF SARCOMA OF THE ORBIT.

By DAVID WEBSTER, M.D.,

NEW YORK.

SURGEON MANHATTAN EYE, EAR AND THROAT HOSPITAL.

Edward B., colored porter, age 34, married, came to me February 11, 1909, to consult me in regard to lumps under the skin of the lids of his right eye. He said that he had caught cold about two months previously and his right eye started to run water which scalded the skin a little. He noticed a kernel under his chin and another in front of his right ear, and he "rubbed it up into the eye instead of rubbing it down," as he should have done. He denied venereal disease.

R. V. $=\frac{20}{20}$ L. V. $=\frac{20}{40}$. Media and fundus normal. The eyeball was pressed forward and toward the temporal side of the orbit. Upon palpation a nodular tumor could be felt above and below the inner canthus. On March 3 I removed the portion of the growth that presented beneath the upper orbital margin, but could not reach the whole mass without too much traumatism. Five days later, at my request, Dr. Edgar S. Thomson performed the Krönlein operation and removed the remainder of the tumor piecemeal. It was found to extend far back into the orbit. The tumor was examined by Dr. Edward L. Oatman, one of the pathologists of the Manhattan Eye, Ear, and Throat Hospital, who said it was a round-celled sarcoma.

There was very little inflammatory reaction, the wound healing by primary union.

May 2. No exophthalmos; the eyeball has resumed its normal position. The eye does not see as well at short range, and there has been diplopia on looking down since the operation. R. V. $=\frac{20}{20}$. L. V. $=\frac{20}{30}$. Eyes move equally in all directions except in looking far down when the right eye lags behind, and there is diplopia. Pupils of equal size and react normally to light and to accommodative effort. The scar of the Krönlein operation is inconspicuous.

May 18. Some edema of the lower lid, and some thickening can be felt at the lower orbital edge. Boric acid wash prescribed.

July 6. There is a stye at the nasal end of the right upper lid, and there is still some diplopia on looking down.

October 18. The lids are normal and nothing abnormal is to be felt in the orbit or on the orbital border. Diplopia still persists on looking down.

March 31, 1910. Comes with an eyelash protruding from his right punctum which causes a good deal of irritation. The eyelash was extracted.

October 30, 1911. Patient comes to the office in a healthy condition. He does not see double on looking down or in any other direction. The scar of the operation is noticeable only on close inspection.

It will be observed that this tumor extending far back toward the apex of the orbit, and with nodular prolongations above and below the eyeball, was removed without injury to the optic nerve,

and without permanent impairment of the functions of any of the ocular muscles. It is also worthy of note that there was no return of the growth more than two and a half years after its removal, though it was of a malignant character.

308 Madison Avenue.

CELLULITIS OF THE ORBIT.*

By F. P. HOOVER, M.D.,

JACKSONVILLE, FLA.

Orbital cellulitis is a disease one does not meet with every day in general practice, and even the specialist rarely has a case of the kind under his care. Some of these cases are very often confused with other affections that are similar in appearance and manifestations, in fact, not infrequently is a diagnosis made of exophthalmos instead of cellulitis, and only recently such a case presented itself to me.

A man, about forty-five years old, saw me two years ago. At that time his left eye was somewhat bulging and prominent, but as he called on me regarding another matter no mention was made of the eye. When last in my office he recapitulated to me his experience and all he had been through, with his "formerly bulging eye," as he expressed it, during the interval since we last met, and it was this experience that suggested this article. He said in one city two specialists had an animated and heated argument as to the diagnosis of his case. One said exophthalmos; the second said the trouble was the result of a tumor. Other ophthalmologists consulted elsewhere in other cities said the swelling and protrusion of the eye were from various causes; only two pronounced the disease cellulitis, and one of them would not do so positively. The one that diagnosed cellulitis had operated upon him. The operation was successfully performed and the result was most satisfactory. To all appearances when I saw the eye it was like its fellow; there was no difference in the movement of the lids or muscles, and the eye, seemingly, was normal.

Just why there should be so much uncertainty pertaining to these conditions can be better understood by considering the differential symptoms of each disease cellulitis simulates. Pulsating tumors of the orbit are hard to diagnose and it is more by exclusion of other forms of disease than by positive indications that we can reach a satisfactory diagnosis. A pulsating tumor may be the consequence of a fracture at the base of the skull involving the internal carotid in the cavernous sinus. Compression of the carotid generally causes a marked diminution of the bruit, and sometimes it is accompanied by fullness and pain in the head. Bulging of the eyeball has occurred from a diffused aneurysm, which has formed in the cellular tissue of the orbit as a result of some injury or from disease or rupture of a vessel. Here there is pulsation of the eyeball, the arterial souffle heard may be stopped if the eyeball is very gently pressed back into the socket, and then pulsation of the globe ceases; but if the pressure is removed the eyeball will return to its former position and pulsation is renewed. With a stethoscope placed above the supraorbital ridge, when there is aneurysm of the ophthalmic artery, the arterial bruit is distinctly audible, accompanying the pulsations of the eyeball, which is protruded. When a tumor forms in the orbital cellular tissue the eyeball will gradually protrude *pari passu* with the growth of the tumor; this is so with erectile tumors which grow slowly. Cancer of the orbit will cause a similar condition, only more rapid in its development; then, too, the bones will likely be involved, but not so necessarily. Cysts of the orbit produce bulging of the eye, and only by use of an exploring needle can one *positively* determine whether there exists a tumor or cyst. Bony growths of the orbit will cause protrusion of the eyeball, also abscess of the antrum, which may force the interior wall of the orbit forward. In Basedow's disease (exophthalmos) both eyes protrude, but *occasionally* only one eye will do so. Pain is an accompanying symptom of cellulitis of the orbit; it is increased on pressure, and it is of an aching or neuralgic character; also there is protrusion of the eyeball with swelling of the lids; there may be also some impairmen of the vision. The condition may be the result of erysipelas, periostitis, traumatism, or septicemia. The patient above referred to had never at any time symptoms indicative of cellulitis of the orbit beyond protrusion of the eyeball and swelling of the lids; he had no pain or discomfort except inability to close the lids of his eye; light of course caused him annoyance. He was well nourished and daily attended to his business, being a traveling man.

Mutual Life Building.

*Read at the annual meeting of the Florida State Medical Society, at Tampa, May 8-10, 1912.

The Wassermann Reaction in the Blood of the Umbilical Cord, the Maternal Blood, and the Blood of the Child After Birth.—A. Serra and A. Gentili have made tests of the Wassermann reaction in pregnant women; they also tested the blood of the fetus, the blood of the umbilical vein, the cerebrospinal fluid of the fetus and the placenta. Tests were made immediately after labor and in the puerperium, and the results were compared in women who were normal, who were suspected of syphilis, and who were evidently syphilitic. Some had been treated and others had not. There were 23 syphilitic women out of 110; in these the Wassermann reaction was positive in 17, either in the blood of the mother or of the umbilical cord. It was positive in all the mothers who were in the florid period of syphilis; according as the interval from the beginning of the secondary stage was longer the positiveness of the reaction diminished. Mercurial treatment had the same effect as in syphilis outside pregnancy. The Wassermann reaction is also positive in eclampsia and in malaria, while it is always absent in normal pregnancy and pregnancy accompanied by complications other than eclampsia and malaria. In the syphilitic fetus it was positive 50 to 120 days before any manifestations of the disease were found. It is at first only partial, gradually increasing in positiveness; it may be absent when there has been energetic mercurial treatment. The placenta of the woman who has given birth to a syphilitic fetus may be entirely normal; in the macerated fetus the villi are flattened and the intervillous spaces are narrowed; there are also vascular lesions, but no formative process in the epithelia covering the villi; the membranes showed no changes; organisms were found in the fetal side of the placenta. In women who are not syphilitic macerated fetuses may be found showing that death and maceration may arise from other causes. The reaction is positive in the cerebrospinal fluid of a fetus that has died of syphilis, and in macerated fetuses when the blood of the mother shows no evidence of syphilis.—*Annali di Obstetrica a Ginecologia*

MEDICAL RECORD.

A Weekly Journal of Medicine and Surgery.

THOMAS L. STEDMAN, A.M., M.D., EDITOR.

PUBLISHERS

WM. WOOD & CO., 51 FIFTH AVENUE.

See fourth page following reading matter for Rates of Subscription and Information for Contributors and Subscribers.

New York, August 17, 1912.

RECENT ADVANCES IN THE STUDY OF SCARLET FEVER.

BECAUSE of its obscure etiology and of the seriousness of its complications and sequelæ, scarlet fever has been the subject of a great number of studies, many, unfortunately, without markedly satisfactory results. here has been a rather persistent belief that to the streptococcus or to one of its strains should be assigned either the cause of the disease or at least the determining factor in the development of its many complications. This organism is known to be present in the throats and in the pus from suppurative complications, also it is known to grow less vigorously in tropical climates, where scarlet fever is said to be less serious and to be attended with complications less frequently. The belief, however, has remained without proof, and Klimenko (*Centralblatt für Bakt.*, Bd. 65, p. 45) has recently conducted an exhaustive bacteriological study of 523 cases of scarlet fever in an endeavor to determine the relationship of the organism to the disease.

Blood taken from the patients was cultured on several kinds of media. At autopsy on 48 of the fatal cases blood was taken both from the heart and from a peripheral vein for this purpose. His results are important. In only 11 cases (2.1 per cent.) was the streptococcus recovered from the blood during life, these cases being all of the severe or complicated variety. The presence of the organism seemed to have no relation to the development of kidney, heart, or joint complications, which were present in 94 cases. He found it in the cultures of blood from either the heart or periphereal vein in 31 of his 48 autopsies, but points out that other investigators have found it in post-mortem blood cultures from patients dead of a large number of diseases, and that in these instances the organism represents probably a post-mortem invasion. He concludes that the streptococcus is never present in the blood in early stages of scarlet fever and that it bears no causal relation to the development of the disease itself or of its complications. When the streptococcus is added, he declares, the picture becomes that of "septicopyemia."

In another direction new observations have been made. Döhle (*Centralblatt für Bakt.*, Bd. 61, p. 63) first described certain bodies found in the polymorphonuclear leucocytes in scarlet fever, to which he gives the name "leucocytic inclusion bodies" (Leukocyteneinschlüsse). These bodies are round or oval or even rod shaped, and vary greatly in size. They stain readily with all the usual blood stains, taking the basic dye. They do not show any chromatin staining. Döhle found them regularly in the blood of thirty patients with scarlet fever, and but rarely in other conditions. He describes them as being very different in appearance from the inclusions found in cells in the lymph nodes and kidneys by Bernhardt and Höfer, and is inclined to think that they should be of a certain diagnostic value. His results were confirmed by several other investigators. In a later communication (*ibid*, Bd. 65, p. 57) he reports the finding of spirochætæ in the leucocytes from two cases of scarlet fever, and expresses the opinion that the "inclusion bodies" may represent portions of these spirochætæ which in turn may very possibly be the cause of scarlet fever. He has been unable to infect white mice, rabbits, or pigs with these bodies by injecting into them blood from scarlet fever patients.

In Philadelphia, Kolmer has investigated 216 cases of scarlet fever and over 150 cases of other diseases with the idea of estimating the diagnostic value of the "inclusion bodies." He reports (*Am. Jour. Dis. of Children*, iv., p. 1.) them present in 94 per cent. of 49 cases of scarlet fever examined during the first three days after the onset, but diminishing rapidly after that time and rarely being present after the ninth day. In 22 cases of diphtheria they were present in 42 per cent. during the first three days, and but seldom after that time. In 11 cases of erysipelas they were present in 62 per cent. examined at various times in the disease. They were absent in 30 cases of serum sickness presenting an urticarial rash and in 13 cases with scarlatiniform rash. Also they were not found in many other diseases in which the blood was examined.

Kolmer concludes: "The diagnostic value of these 'bodies' is necessarily limited. In serum sickness with a scarlatiniform rash their absence excludes scarlet fever with a fair degree of accuracy. Their presence in this condition, however, may not be due to scarlet fever, but to the primary attack of diphtheria. They have, therefore, a negative value. An examination of the blood for these 'bodies,' however, is very simple and possesses value in aiding a differential diagnosis between scarlet fever, rötheln, measles, and gastrointestinal rashes."

CAFFEINE AND EFFICIENCY.

FOR a long time the properties of stimulating mental processes, of delaying the onset of fatigue, and of inducing wakefulness, have been generally recognized in caffeine and in beverages containing it. In addition to this knowledge the concepts of coffee and "nervousness" have been closely associated in the minds of the laity, even though the consumption of coffee has not materially diminished as the result of this knowledge. The good and bad effects of coffee or tea, a cup of which contains from one and a half to two and a half grains of caffeine, are well known, and little in the way of experimental proof has been sought in confirmation of this knowledge.

In a monograph on this subject, H. L. Hollingworth* presents the results of a careful psychological study which he conducted for forty days on a series of sixteen individuals, mostly students, whose ages ranged between nineteen and thirty-nine years. These were given at different intervals measured doses of caffeine mixed with sugar of milk and administered in capsules. In the subjects who were used as controls only sugar of milk was administered in this way. None of the subjects knew at any time whether he was getting caffeine or not. In this manner the effects of expectation, suggestion, or enthusiasm in producing favorable or unfavorable results were eliminated from the experiments. The tests employed were those that are well known to psychologists as means of gauging mental efficiency. One of these was the color-naming test, by means of which the speed of association of ideas with words could be readily measured. The subject was required to name one hundred colored squares arranged in random order in ten lines on a white cardboard. The score was recorded by an assistant who noted in fifths of a second the time taken to name all the colors correctly. Another test was that of "naming opposites" or words with a meaning opposite to that of words typewritten on a cardboard, in which test the time taken in this mental process was also recorded. Other experiments were employed to test discrimination, attention, and judgment. In the "steadiness" test there was measured the ability of an individual to hold with his outstretched arm a metal rod passing through a hole in a brass plate in such manner that there would be as few contacts as possible between the rod and the side of the opening. In this test all movements beyond the slightest tremor were recorded by the apparatus. In the "tapping" test the time taken to execute by means of a metal rod as rapidly as possible four hundred taps on a metal base was recorded. The power of coordination was measured by having the subject insert successively and as rapidly as possible a metal rod into each of three holes arranged in the form of an equilateral triangle on a brass plate. This experiment furnished a combined test of steadiness, speed, and coordination.

In conducting the various tests the factors of fatigue, practice, time of the day, influence of meals, and the health and subjective sensations of the individual experimented upon were all taken into account. The results obtained with the tapping test were as follows: The typical motor caffeine effect was one of stimulation, sometimes preceded by a brief and slight initial retardation. The magnitude of the stimulation which began from forty-five to ninety minutes after the administration, varied directly with the size of the dose, up to six grains, and was relatively slight when the caffeine was taken in the morning. The effect persisted for from one to two hours for doses of one to three grains, and as long as four and a half hours for doses of six grains. There was no secondary or after effect shown within the seventy-two hours over which the intensive doses were traced.

The steadiness test showed a slight nervousness following the administration of one to four grains of caffeine, and a pronounced unsteadiess following the administration of six grains. This unsteadiness was greater if the caffeine was taken in the afternoon, and especially if unaccompanied by food. Small amounts of caffeine stimulated the power of coordination, while larger amounts caused a retardation of the latter. The speed of performance in typewriting was quickened by small doses of caffeine (one to three grains) and retarded by larger doses (four to six grains). The quality of the performance as measured by the number of errors, was superior for the whole range of caffeine doses when compared to the quality yielded on the control days. In the color-naming test there was an indication of stimulation for the whole range of doses employed. Stimulation was also observed in the cases of the "opposites" test; the magnitude of the caffeine influence varying inversely with the body weight, being greater when the caffeine was taken along with the midday meal, but being greatest when taken in the middle of the afternoon without food.

In studying the effect of caffeine on discrimination and choice reaction times it was noted in contrast to the results obtained with the tests above recorded, that small amounts of caffeine tended to produce retardation in discrimination time, and that this retardation was accompanied by a greater number of false reactions. This discrepancy is explained by Hollingworth as being probably due to the greater voluntary caution in the attempt to eliminate the false reactions. In this test it is stated that simulation does not make for efficiency except after long practice.

Of particular interest are the observations recorded with reference to the effect of this drug on sleep. Doses of from one to four grains had no appreciable sleep-disturbing effects except in a few individual cases. Doses of six grains markedly impaired sleep, although a few individuals did not experience this effect, which was greatest when the drug was taken on an empty stomach and on successive days; it did not depend on the age, sex, or previous caffeine habits of the individual, but varied inversely with the increase in body weight. As regards the effect of caffeine on the general health of the subject it was noted that irritability and headache followed the use of the larger doses. The two principal factors which seemed to modify the degree of caffeine influence were body weight and the presence of food in the stomach at the time of the administration.

Hollingworth in the interpretation of the results of his experiments points out that these show the complete absence of any traces of secondary depression. This conclusion is hardly justified. It would be logically more correct to state that the experiments do not reveal any evidence of secondary depression excepting in the tests of steadiness and discrimination. Mental efficiency, at any rate, considered as a whole, cannot be measured by any

*The Influence of Caffeine on Mental and Motor Efficiency", by H. L. Hollingworth, Ph.D., Instructor in Psychology, Barnard College, Columbia University. "Columbia Contributions to Philosophy and Psychology". Vol. XX, No. 4. New York: The Science Press, 1912

one test or by a number of tests considered separately. The author states that no one knows "whether this increased capacity comes from a new supply of energy introduced or rendered available by the drug action, or whether energy already available comes to be employed more effectively, or whether the inhibition of secondary afferent impulses is eliminated, or whether fatigue sensations are weakened and the individual's standard of performance is thereby raised." Certainly no new supply of energy is introduced by caffeine. Nor is it probable that the energy already available is rendered more effective. Moreover, the *sensations* of fatigue can have no effect upon the output of energy. The true interpretation of the stimulating effect of caffeine as of that produced by any other drug would appear to be that under ordinary conditions the cells do not utilize their full store of energy; there is a certain amount held in reserve for unusual occasions and contingencies. The action of the drug tends to bring out this reserve supply; the result is stimulation, which, when frequently repeated, results in exhaustion. Hollingworth states that caffeine may be contrasted with strychnine, which causes a secondary reaction of depression. This contrast is only apparent. Depression is probably present in the case of caffeine, but is latent; and in this respect caffeine differs from none of the other alkaloidal drugs, in which depression always follows stimulation, though to a varying degree and at a varying interval of time.

As another curious example of *non sequitur* may be cited the following statement by Hollingworth: "The widespread consumption of caffeine beverages under circumstances in which and by individuals for whom the use of other drugs is stringently prohibited or decried seems to be justified by the results of experiment." The author admits that the results of his investigations bear only on the immediate effects of caffeine on performance; and that they do not apply to the continuous use of the drug, nor to the physiological or neurological effect of caffeine. But none of these effects can be ignored in making any statement as to the effect of caffeine on efficiency, which presupposes the healthy operation of many mental and physical processes.

Of related interest is the experimental study on the toxicity of caffeine conducted on different species of animals by W. Salant and J. B. Rieger (U. S. Department of Agriculture, Bureau of Chemistry, Bulletin No. 148, April 4, 1912). These observers found that the toxicity of caffeine varies in different animals, and that it is less in the young than in the adult. The presence of pathological conditions increases the toxicity of the drug. It is this last fact that should be taken seriously into account in all investigations that are undertaken with reference to the influence of caffeine on human efficiency.

THE SMOKE PROBLEM.

THE deleterious effects of smoke from the burning of soft coal have not heretofore been very conclusively determined, though thousands have worked upon this important subject. However, "a smoke house"—that is, a laboratory so constructed that it is possible, by varying conditions, to get any kind of coal smoke for physical and chemical study—has been constructed at the Department of Industrial Research of the University of Pittsburgh[1]; and here it is hoped that scientific and fruitful work will be forthcoming.

Investigations are now making as to the amount of annoyance or suffering by reason of excessive smoke that is sustained in dwellings, hotels, hospitals, picture galleries, museums, office buildings, banks, libraries, and shops; as to the detrimental effect of smoke upon civic esthetics, upon the "city beautiful"; as to the meteorological aspects of the smoke problem; as to the effect of smoke upon plants and upon human health. The botanical side of this question well merits a word. While the relation of plants to smelter fumes and so forth has received much attention, little consideration has been given to carbon with the accompanying tar-contaminating phenol and other like compounds. Benner has found 44 per cent. tar in samples of soot examined. He wisely notes that such carbon smoke might have a very injurious effect on vegetation, especially in the spring, when the new leaves and tender shoots are the more readily affected by the toxic action of the soot and accompanying substances.

The relation of smoke to human health has probably thus far not been studied with any great definiteness. Does the inhaled soot predispose to tuberculosis is a question that has been variously answered. Pittsburgh, it is averred, does not have as much consumption as other cities similarly located where there is much less smoke; and there is more consumption in the better residence portions of Pittsburgh, where there is less smoke and dirt, than in the more congested districts, where smoke abounds. On the other hand "catarrh," pneumonia, and other "bad air" diseases are very prevalent, presumably by reason of the irritation of the smoke particles. It is furthermore said that because of swallowed mucus gastric ailments are indirectly attributable to smoke. And the ophthalmologist is busiest in Pittsburgh after a heavy fog accompanied by smoke. It is hoped by Benner that the study of the medical, with other phases of the smoke evil will be scientifically conducted in his laboratory; physicians will certainly be interested in the work and will no doubt find great gratification in its outcome.

BACTERIA CARRIERS.

THERE is a certain tendency, which comes to the fore under special conditions, to refuse to take the germ carrier with sufficient seriousness. In the sanitary administration of towns, institutions, and schools where examinations for the detection of carriers involve much time and expense, to say nothing of other obvious stumbling blocks, it is only human for authorities to fall back on the assertion that certain disease germs are ubiquitous, and that even if they should be found in certain individuals they may be non-virulent. Before the term "carrier" was used it was often stated that

[1] Benner, R. C.: "Research on the Smoke Problems," *Science*, June 28, 1912.

bacteria could be present in the healthy and do no harm either to the bearer or to others; and that the actual culpable disease-factor was something unknown—the *genus epidemicus*, in virtue of which the inoffensive germ took on virulence, to part with it again when the epidemic ceased. With a view of correcting some of these impressions, Sobernheim, at a recent meeting of the Berlin Medical Society (*Deutsche medizinische Wochenschrift*, July 11), made a distinction between the accidental carrier who himself is naturally immune, *pro tempore*, and the host who having recovered from the disease still carries with him germs of the stock which first infected him. Both these individuals are nearly as dangerous as a subject in the midst of a disease. Speaking of the diphtheria bacillus he insists that it is not ubiquitous. It is found only in patients and carriers of the two classes. The accidental carrier contracted his germs from an active focus of disease in man or some animal. The more this possibility is studied the greater the likelihood of tracing these bacteria to a focus.

The other objection, that carriers' germs are very largely nonvirulent, also falls to the ground if the inoculation tests are followed up persistently. There is absolutely no difference in this respect between carriers' germs and patients' germs. Another point of interest attaches to the fact that carriers have no real security. They can be and are infected at times from their own germs. The proportion of carriers to patients, as shown by extensive studies in schools and institutions, varies from 1 to 1 to 3 to 1. A genuine campaign against carriers necessarily involve hardships, for the theoretical requirements are very exacting. It remains to be seen whether it is practicable and whether the results bear out the theories; and this will requrie years.

A New Induced Symptom.

An excellent subject for a dissertation is "induced symptoms," the number of which is constantly increasing with the rapid progress of science. Naturally any powerful drug given solely for therapeutic ends may induce certain symptoms which have a diagnostic significance. The first one that occurs to us in this connection is the severe iodism sometimes unexpectedly developed during an iodine cure, which is, or was, believed to indicate impaired renal activity if not actual organic disease. Our lists of contraindications of remedies refers to the same principle. We are warned not to exhibit certain drugs to certain patients lest they develop certain accidents, and naturally the latter, when produced intentionally, must have diagnostic value for the patient's particular type of disease. Some of these induced symptoms have a special forensic bearing and enable us to detect simulation. A point of great significance is the moral right to make use of some of these tests, which produce more or less stormy reactions in a subject already, perhaps, badly off with his disease. At a recent meeting of a Vienna medical society (*Münchener medizinische Wochenschrift*, July 2) Rusu announced that if forty grams of galactose are given to a subject with cholangitis of any causation, a sharp fever promptly sets in and persists for one or two days. In some cases icterus is associated. In recovered individuals double the dose caused no rise of temperature whatever. The explanation is that galactose acts in these cases as a cholagogue, but as the bile cannot escape, it is again absorbed along with toxins of the disease.

Physiological Suicide.

This term has some vogue to designate cases of suicide, however caused, in which the subject is not the victim of a psychosis and is able to give good reasons for his act. Naturally it antagonizes that view which makes every suicide, if not actually insane, at least momentarily unbalanced sufficiently to paralyze the instinct of self-preservation. At a recent session of the physicians of Charité Hospital, Berlin (*Deutche medizinische Wochenschrift*, July 18) Forster, an alienist in charge of an institution, refused to receive as a patient a man who had just attempted suicide on account of disappointment in love because there was no evidence of a psychosis. He would have admitted him at his own request, but as the individual did not choose this course he was allowed to go his way despite the fact that he threatened to make further attempts on his life. Forster defends this course, and compares this case with that of the men or women who love only once in a lifetime, and who, if disappointed in this quest, never marry. Now, while these individuals are often unbalanced, yet this "single-love" obsession, or whatever else it may be, is never evidence *per se* of an unbalanced mind. The suicidal subject showed a heightened excitability which dated from childhood, and perhaps indicated a psychopathic defect, but presented nothing further.

News of the Week.

Infantile Paralysis.—Since July 1 eighty-six cases of infantile paralysis have been reported in Buffalo, N. Y., the disease being widespread throughout the city, not confined to any one district. An odd point brought out is that there has been no occurrence of two cases in any one family. Many of the cases have been of comparatively mild type, and only six deaths had occurred up to August 7. The State Commissioner of Health has requested the assignment of an expert from the Public Health and Marine-Hospital Service to assist in investigating the situation. In Los Angeles, Cal., also the disease is epidemic, 128 cases having occurred there since July 10, with thirty-three deaths. A number of cases have been reported from Baltimore, Md., also.

Typhoid Fever in New York.—The New York Department of Health is puzzled over an outbreak of typhoid fever in a section of Brooklyn. In four days 82 cases were reported from the one neighborhood, and the city milk and water supplies are being investigated. A mild epidemic has also been reported as occurring among clerks and others who pass their business day in the financial district about Wall street in Manhattan.

A Carrier Epidemic of Typhoid Fever.—Between thirty and forty cases of typhoid fever in a New Jersey town have been traced to the milk from one of the best managed dairies in the State. An examination of all the employees of this dairy revealed the fact that the manager was a carrier of the germs of the disease. He had been in his usual health and had presented no typhoid symptoms.

Plague Danger Lessened.—The reports of the plague situation have had a more cheerful tone of late. In Havana the disease, it is said, is practically wiped out, and in Porto Rico it is well under control, no new cases having occurred there since July 30. Following the discovery of one infected rat in New Orleans, some alarm was felt, but the officials in charge report that no other cases of infection have been found in hundreds of rats collected from various parts of the city and carefully examined. One case of the disease has been reported in Liverpool, England, and it is said that the disease is prevalent among the rats there.

Sanitation in Cuba.—Following a recent suggestion that the United States conduct an investigation into the sanitary condition of Cuba, the Cuban Director of Sanitation declares that the island is much more sanitary than is the United States itself, suggests that we do a little cleaning up ourselves, and implies that those who live in glass houses should not throw stones. The constant presence in this country of such diseases as smallpox, infantile paralysis, and spinal meningitis is, he says, a menace to Cuba where such diseases do not exist, and he contends that Porto Rico, an American possession, was the source of the infection of bubonic plague in Havana. In medical legislation it would certainly appear that Cuba is ahead of the United States, since her chief sanitary officer has a seat in the cabinet and all her health officers are Federal appointees.

Cholera in Russia.—The existence of cholera in St. Petersburg was finally admitted officially on August 9. Though no figures were given out, it is said that there are a number of cases and that the disease has been increasing for some weeks. The health authorities have endeavored to suppress the details because, it is reported in the newspapers, of the trouble which publicity would entail in making it necessary to fight the disease.

Medical Aid for Indians.—In a special message to Congress on August 10, President Taft urged the immediate passage of a bill appropriating $255,350 for the establishment of a special medical service for the treatment of Indians. He declared that 296,000 Indians are without medical attention and are being ravaged by disease. The death rate among them is estimated a 35 per 1,000, as compared to 15 per 1,000, which is the average for the country.

The Public Health.—Whatever other matters of contention there may be, all the political parties are agreed on the necessity of caring for the public health. The following is the plank on the subject inserted in the platform of the National Progressive Party: "We favor the union of all the existing agencies for fundamental government dealing with the public health into a single national health service without discrimination against or for any one set of therapeutic methods, school of medicine or school of healing, with such additional powers as may be necessary to enable it to perform efficiently such duties in the protection of the public from preventable diseases as may be properly undertaken by the fundamental authorities, including the execution of existing laws regarding pure food, quarantine, and cognate subjects, the promotion of appropriate action for the improvement of vital statistics, the extension of the registration area of such statistics and cooperation with the health activities of the various States and cities of the nation." The same platform urged the establishment of a Department of Labor whose head should have a seat in the President's cabinet, but the headship of the health bureau is to be a simple salaried position. The doctors have not so many votes as the laboring men.

Dr. Wiley's Successor.—It is reported that Dr. R. E. Doolittle, the present acting chief of the Bureau of Chemistry, will most probably be appointed to that office permanently, succeeding Dr. Wiley. It is known that the President has Dr. Doolittle's name under consideration as one of the few desirable candidates.

Hospital Fires.—The nurses of the Jewish Maternity Hospital, New York, formed a bucket brigade, and before the arrival of the firemen extinguished a blaze which had started in a reading room off the dormitory on the first floor of the hospital on August 5. The damage was only slight.

In the Post-Graduate Hospital, New York, also, on August 9, a fire, the second in three months of uncertain origin, was extinguished by the hospital staff with but little damage to the building and without causing alarm among the patients.

Gifts to Charities.—By the will of the late William Patterson Young of Newark, N. J., $500 each is left to St. Barnabas' Hospital, the Newark Eye and Ear Infirmary, St. Michael's Hospital, and the Home for Crippled Children, all of Newark.

The New York Polyclinic Medical School and Hospital has recently received an additional donation of $50,000 for the New Building and Equipment Fund, and a legacy of $3,000 under the will of the late David J. Garth, Esq., at one time a trustee of this institution.

The New York Eye and Ear Infirmary receives $25,000, and the Presbyterian Hospital, New York, $50,000, by the will of the late John S. Lyle of this city.

Examination for Dental Interne.—The United States Civil Service Commission announces an examination to be held on September 4, 1912, at various places, for the purpose of filling a vacancy in the position of dental interne (male) in the Government Hospital for the Insane at Washington, D. C. The salary is $600 per annum and maintenance. Application for the examination should be made to the United States Civil Service Commission, Washington, D. C.

New Chemical Laboratory.—The Beth Israel Hospital, New York, has just finished the equipping of a new chemical laboratory, where original work will be pursued. The laboratory is furnished with all the most modern chemical apparatus for biological chemical analyses. Dr. Max Kahn has been appointed director of chemical and physiological investigations in the hospital. Visitors to the laboratory will be very welcome.

Clinic in Vienna.—Announcement has been made of the opening in Vienna, Austria, of a clinic for the study of cerebrospinal meningitis, under the direction of Dr. Berthold Beer. The clinic has been founded and endowed as a memorial to the late Mr. E. H. Harriman of New York, and will be open to American physicians studying abroad.

The Health of School Children.—The United States Bureau of Education has recently published the results of an investigation by Dr. Thomas D Wood, professor of physical education at Columbia University, New York, into the health of the school children of this country. Dr. Wood finds that of the twenty million school children in the United

States not less than 75 per cent. need attention for physical defects which are prejudicial to health and which are partially or completely remediable. He draws the following personal conclusions as a result of his investigations: From 1½ to 2 per cent., or 400,000, have organic heart disease. Probably 5 per cent., 1,000,000 at least, have now or have had tuberculosis of the lungs. About 5 per cent., or 1,000,000, have spinal curvature, flat feet or some other moderate deformity, serious enough to interfere to some degree with health. Over 5 per cent., or a million, have defective hearing. About 25 per cent., or 5,000,000, have defective vision. About 25 per cent., or 5,000,000, are suffering from malnutrition, in many cases due in part at least to one or more of the other defects enumerated. Over 30 per cent., or 6,000,000, have enlarged tonsils, adenoids or enlarged cervical glands which need attention. Over 50 per cent., or 10,000,000 (in some schools as high as 98 per cent.), have defective teeth which are interfering with health. Several millions of the chidren possess, each, two or more of the handicapping defects. A similar series of statistics, including only the school children of Boston, which has been compiled by the Boston Department of Health, for exhibition at the Congress of Hygiene next month, shows that of the 118,781 school children of that city over 65 per cent. have physical defects. Of these children 51,340 were found to have defective teeth, and 25,121 suffered from enlarged tonsils. Only 133 were found to be affected with tuberculosis.

No Action Against "Healers."—As a result of the coroner's investigation of the two deaths from scarlet fever occurring in Yonkers, N. Y., recently, the patients being without medical attendance, it has been decided that as the regulations requiring notification of the health authorities had been complied with there is no basis for a prosecution for criminal neglect of the Christian Science healers who were in charge.

New Tuberculosis Hospital.—The King Edward Hospital for the treatment of advanced cases of pulmonary tuberculosis of Winnipeg, Manitoba, was put into active service on July 27, when thirty-five patients were installed. The hospital was formally opened by the Duke of Connaught on his recent visit to the city.

Nurses to Meet in San Francisco.—The International League of Nurses in session at Cologne, Germany, on August 6 elected Miss Goodrich of New York president of the league, and selected San Francisco as the place for the next convention in 1915.

Sioux Falls Medical Association.—At the annual meeting held in Fort Dodge, Iowa, on July 24, the following officers were elected: *President*, Dr. J. N. Warren, Sioux City; *Vice-presidents*, Dr. R. G. Stevens, Sioux Falls, S. D., and Dr. A. E. Spalding, Luverne, Minn.; *Secretary*, Dr. George S. Browning, Sioux City, Iowa; *Treasurer*, Dr. Walter R. Brock, Sheldon, Iowa.

Obituary Notes.—Dr. Frederick Earl Beal of New York, a graduate of the University of Nebraska College of Medicine, Omaha, in 1894, a member of the American Medical Association and of the New York State and County Medical Societies, and of the New York Academy of Medicine, visiting physician to the Northwestern Dispensary, and professor of clinical medicine in the New York Polyclinic Medical School and Hospital, died on August 8 of pneumonia at the Polyclinic Hospital, aged 44 years.

Dr. Joel Smith Thomas, of Pleasant Hill, Illinois, a graduate of the Medical College of Ohio, Cincinnati, in 1872, and a member of the Illinois State and Pike County Medical Societies, died at his home on July 19, after a short illness, aged 67 years.

Dr. David Smith Humphreys, of Greenwood, Mississippi, a graduate of the Medical Department of the Tulane University of Louisiana, in 1885, and a member of the Louisiana State and Leflore County Medical Societies, died at his home on July 20, aged 51 years.

Dr. Otis C. Hollister, of Portland, Oregon, a graduate of the Northwestern University Medical School, Chicago, in 1885, and a member of the American Medical Association and the Oregon State and Multnomah County Medical Societies, died in St. Vincent's Hospital, Portland, on July 17, aged 49 years.

Dr. George M. Anderson, of Tanglewood, Texas, a graduate of the Atlanta Medical College, Georgia, in 1874, a member of the Texas State and Lee County Medical Societies, and a surgeon in the Confederate Army during the Civil War, died at his home after a long illness on July 18, aged 73 years.

Dr. J. Bozeman Letcher, of Shorter, Alabama, a graduate of the Medical Department of the Tulane University of Louisiana, in 1897, and a member of the American Medical Association and of the Alabama State Medical Society, died at his home on July 18, of tuberculosis, aged 38 years.

Dr. Herbert Norris of Philadelphia, Pa., a graduate of the University of Pennsylvania, department of medicine in 1866, and a member of the College of Physicians of Philadelphia, died in Rochester, Minn., following an operation on August 6.

Dr. Christian P. Seip of Pittsburgh, Pa., while attending the sessions of the Pennsylvania Board of Medical Licensure, died at Atlantic City on August 6 at the age of 63 years. He was graduated from the Homeopathic Medical College of Pennsylvania in the class of 1868. He was appointed a member of the Board of Medical Licensure six months ago.

Dr. William H. Palmer of Providence, R. I., died at his home in North Woodstock, Conn., on August 3, aged 83 years.

Dr. William Seymour Johnson of Chicago, Ill., a graduate of the Hahnemann Medical College and Hospital of Chicago in 1868, and a veteran of the Civil War, died at his home from paralysis on July 27, aged 82 years.

Dr. Dwight Edward Burlingame of Elgin, Ill., a graduate of the Northwestern University Medical School, Chicago, in 1869, and a member of the American Medical Association, the Illinois State and Kane County Medical Societies, and the Fox River Valley Medical Association, died at his home after a brief illness on August 4, aged 69 years.

Dr. James L. Lowrie of Lincoln, Ill., a graduate of the Jefferson Medical College, Philadelphia, in 1878, and a member of the American Medical Association, and the Illinois State and Logan County Medical Societies, died at his home suddenly on July 23, aged 60 years.

Dr. Alvin T. Heavenrich of Seattle, Wash., a graduate of the Miami Medical College, Cincinnati, in 1904, a member of the American Medical Association and the Washington State and King County Medical Societies, died in Cincinnati on July 31, aged 30 years.

Correspondence.

THE ICE-BAG IN APPENDICITIS.

To the Editor of the Medical Record:

Sir:—The modest but significant article of Dr. Fauntleroy on the danger of the ice-bag in appendicitis is timely and will doubtless save many lives if its warning note is heeded. I am specially interested in this subject by reason of my connection with the early history of appendicitis surgery and because I have long pointed out the irrationality of the ice-bag in "inflammations." The former was enlarged upon in your issue of March 30, 1912, and does not require restatement here.

The latter is stated as follows in my book on "Hydrotherapy" (published by William Wood & Company), page 149, third edition: "The application of the ice-bag in pneumonia, pericarditis, peritonitis, appendicitis, etc., is so universal that the author opposes this practice with great hesitance and reluctance. The anesthetic effect of a hot poultice or ice-bag cannot be denied, but that such applications can affect the lungs or appendix to any appreciable extent is doubtful. Dr. Henry C. Coe has informed me that he observed while pathologist to the woman's hospital many years ago, no effect upon peritionitis . . . in operations on the living subject he has never seen the slightest effect of the previously applied cold upon the hypervascular condition of the peritoneum. This is the experience of other laparotomists." If a thermometer be introduced into the colon of a dog, its bulb being pressed forward, pushing the abdominal wall into a prominence and ice then be applied over the the latter, there will be no perceptible fall of the mercury so long as the parts are not destroyed. Just as soon as the part is frozen or if the dog is killed, the mercury will drop. The reason is simple enough, but unfortunately is lost sight of as is the physiological basis of other hydrotherapeutic procedures. The author is firmly convinced that the heat regulating machinery of the body is immediately called into action for the purpose of resisting the invasion of cold into the interior and that thus the object of applying the ice-bag is frustrated.

This rationale of the ice-bag does not agree entirely with Dr. Fauntleroy's explanation of the gangrenous condition of the appendix, which he has so often noted in cases that have been subjected to the ice-bag. There is no doubt that the reparative process of "walling off" is interfered with by the ice-bag, but it appears to me that "it deludes Nature" not alone, but also the surgeon, into a false sense of security which by delay favors rapid destruction of the appendix by gangrene in cases pathologically so favored.

I am particularly gratified by the doctor's statement that "it is the invariable rule in the navy to operate in every case in which a diagnosis is made"—a view I have expressed for twenty years. The article referred to concludes: "I would express the result of my observation to be that the number of cases that have been sacrificed by timid procrastination outweigh far the cases in which a fatal issue resulted from premature or unnecessary operation." "When in doubt operate" is a safe decision in acute appendicitis.

Simon Baruch, M.D.

51 West 70th Street.

A SANITARY NOTE FROM THE PAST.

To the Editor of the Medical Record:

Sir: A very prominent writer of sanitary matters has a great deal to say against the congested cities, where crime and ill health seem to revel. Then he turns to the quiet country side, and speaks of the remarkable approach to health and normal living in the low mortality and freedom from disease. Finally he draws a conclusion that no degree of health can be found in the large cities, and that we must go back to the levels of our forefathers of a century ago and live as they did. All this sounds very pleasant and convincing, but unfortunately it is not confirmed by the records of long ago. Away back in the beginning of the century a minister in East Haven, Conn., who may have been a physician and evidently did something along that line, published a little volume in which he put down the history of the town from its settlement in 1664 up to 1800.

This record has the appearance of considerable accuracy and at times it certainly told the exact truth. Thus in 1736 of the 500 people who lived in the town, 26 died of sickness of the throat. In 1742 and '43, with about the same number of people, 60 died from dysentery. From that time up to 1800, a period of sixty years, he estimates the death rate of 30 per thousand for dysentery and 15 for canker rash and so on through various diseases, the names of which are not very clear at present. Evidently the people in that part of the country were not very close to nature in their recognition of the commonest rules of health. In all probability, these and other diseases from which they suffered showed an absence of all common sense rules—bad air, bad diet, neglect of cleanliness, and general dirt and filth.

This little volume is but a hint of what occurred in all other sections, and the most congested cities and defective homes and firesides could not bring worse results. Consumption was very prominent in those days and the methods of treating it simply intensified it and shortened its duration. The resident of the country who recognizes the common sanitary measures necessary for health and applies them in his own home can secure them with greater certainty than the tenant in the crowded cities. There is a great deal to be done in this direction, and boasting of what has been done is not promising for the future.

T. D. Crothers, M.D.

Hartford, Conn.

A STRANGE FOREIGN BODY IN THE URETHRA.

To the Editor of The Medical Record:

Sir:—In reading Algot Lange's most interesting book "In the Amazon Jungle," I came across the following paragraph regarding an unusual sort of foreign body in the urethra which I have copied from the book as a contribution to that subject.

"Before leaving the subject of fish I will mention another species, smaller than the piranaha, yet although not so ferocious, is the cause of much dread and annoyance to the natives living near the banks of the rivers. In fact, throughout the Amazon this little worm-like creature, called the kandiroo, is so omnipresent that a bath-house of a particular construction is necessary. The kandiroo is usually three or four inches long and one-six-

teenth inch in thickness. It belongs to the lampreys and its particular group is the Myxinos or slime fish. Its body is coated with a peculiar mucus. It is dangerous to human beings because when they are taking a bath in the river it will approach with swift, powerful movement, penetrate one of the natural openings of the body, whence it can be removed only by a difficult and dangerous operation. A small but hard and pointed dorsal fin acts as a barb and prevents the fish from being drawn back. While I was in Remate de Males the local doctor was called upon to remove a kandiroo from the urethra of a man. The man subsequently died from the hemorrhage following the operation."

Most foreign bodies in the urethra are either stones which have become lodged there in passing from the bladder or substances introduced by the individual himself. Occasionally the physician is unfortunate enough to have an instrument break and have part remain lodged in the canal. I do not recall having seen a foreign body similar to the one spoken of in Lange's work recorded and it hardly seems credible that a fish would be able to accomplish so difficult a feat and gain entrance to the male urethra in the way recorded. Its removal would certainly be a difficult procedure armed as it is with the barbed fin.

WALTER S. REYNOLDS, M.D.

NEW YORK.

OUR LONDON LETTER.

(From Our Regular Correspondent.)

BRITISH MEDICAL MEETING AT LIVERPOOL—INSURANCE TROUBLES—TUBERCULIN DISPENSARIES—NATIONAL ASSOCIATION AGAINST CONSUMPTION—LISTER—OUT-PATIENT SYSTEM—SIR J. HUTCHINSON—TROPICAL SCHOOL, DR. SEIDELIN.

LONDON, July 26, 1912.

THIS is the British Medical week. The annual meeting this year, as you have been informed, is at Liverpool, a city so well known to traveled Americans (and to others by repute) that it is needless to tell you that it furnishes everything necessary to secure the success of any public proceedings. It should, however, be said at once that the most hearty welcome awaited us on the part of the local profession and also of every class of citizens. So, what between work, recreations, amusements, and social amenities, Liverpool equaled, if it did not excel itself. This is, I believe, the fourth time that the annual meeting has been held here during the eighty years of the Association's existence. This year the work was divided into twenty sections, a fact which indicates to some extent the great progress made in medical and scientific knowledge, and their applications in our art. Your special reporters will give you an outline of some of the proceedings, but cannot possibly deal with the mass, which would fill more than one number of the RECORD; but of course the most important points will come up from time to time in your columns. As to the Association's medico-political and its official work, only a portion may interest your readers. I will mention some.

The Representative Meeting controls the policy of the Association, and its proceedings are kept entirely separate from those of the sections. This body is elective and met on Friday Saturday, and Monday to consider among other things reports of the Council on the Insurance Act, State sickness and the other leading questions at present agitating the whole profession. These meetings are not public and reporters are excluded, but there is practically full publicity and even decisions will have been discussed in all directions before you hear of them. In fact the ubiquitous press, determined not to be outdone, has contrived to get some statements that bear on the public interests, but unfortunately these are not all quite correct. There was no little hot discussion both on Friday and Saturday as to the effects on the profession of the Insurance Act and how the Chancellor of the Exchequer ought to be met. It was held by many that the government had heaped insult upon insult on the profession, and that there was good reason for all to unite to render the act inoperative. Some, on the other hand, were disposed to keep the door for negotiations open in the hope of compelling the Chancellor to give way. The proceedings on these days may be looked upon as in committee. On Monday they were still further discussed and to a great degree confirmed, or so far as was necessary with some deviations to place them before the Council and general meeting. Besides the reports of committees the meeting had before it the reply of the Insurance Commissioners to letters addressed to them and the observations of the State Sickness Committee thereon. The chairman of this, Mr. T. J. Verrall, said their position was all along unsatisfactory because the profession had not been consulted at an early stage, and he had reluctantly to admit that no material concession had been made by Mr. Lloyd George. The committee continued in session the whole day, the one subject being whether to break off negotiations altogether or appoint a committee to negotiate further with the Government. To break off was voted by 185 to 21, but a further ballot had to be taken to confirm it.

A "Tuberculin Dispensary League" has been at work here for a couple of years and the Countess of Mayo, president, held the annual meeting in her house. The object is, of course, to promote serum treatment by establishing dispensaries. The first was placed under the care of Dr. Camac Wilkinson, who attended and reported that 245 new cases were taken in the year and another dispensary was being organized. But for the help of other doctors who attended the dispensary to study the subject, he could not have dealt with all. They relieved 14 out of 31 cases in the advanced stage, with pulses hanging from 120 to 140. In no instance had large doses had ill effects, showing tuberculin could be used in all stages. In four fatal cases in the two years there had been mixed infection. He contrasted the slight cost of this method with that of one of the consumption hospitals, but the cases are not parallel, and his remarks thereupon have given rise to just criticism. He is an enthusiast, but even so there is no need for any assumption when "urging in all modesty that their system should be studied" before locking up money in hospitals.

A kindred organization, the National Association for Prevention of Consumption, held its meeting on Tuesday, Lord Balfour of Burleigh presiding. He said they were getting people educated to the value of cleanliness and sunshine and that infection was a reality in consumption, which was not hereditary in the general sense, but perhaps as a predisposition. Some people objected to much of the Insurance Act, but this Society would help it heart and soul. He deeply regretted recent resignations and hoped the incident would not harm the cause Some had said they were not active enough. He

pleaded not guilty and thought the annual report an admirable answer to such a charge. None of the dissatisfied had offered a practical suggestion that they had rejected. If he were disposed to carry the war into the other camp he might say there were at least two of those gentlemen who had never attended a meeting of the Council since they were appointed.

The committee for establishing a memorial to Lord Lister met at the Royal Society on Monday. Sir Archibald Geikie, president of the Society, was appointed chairman and the Hon. W. F. D. Smith deputy chairman of the committee. An executive committee was appointed and discussed proposals. Arrangements have been made for a public meeting in October at the Mansion House, when probably a scheme will be announced; perhaps it may include the erection of a monument in Westminster Abbey.

The committee for inquiring into the out-patient system issued a report yesterday. They find the number might advantageously be diminished, and some arrangement might be made for treatment elsewhere.

Sir Jonathan Hutchinson on Tuesday celebrated his eighty-fourth birthday. His colleagues of the Council of the Royal College of Surgeons sent a letter to their ex-president and emeritus professor expressing their appreciation of his devotion to science and surgery and referring to the numerous academical honors conferred upon him. Sir Jonathan sent on the occasion a cheque for 50 guineas to the British Medical Association toward the cost of the fight against the Insurance Act, together with a letter stating his firm belief that an ill-paid profession would be a calamity to the community, and the niggardly proposals of the government a gross injury to medical education and training.

Sir William H. Lever, chairman of the Liverpool School of Tropical Medicine, gave a banquet on Monday in honor of Dr. Harald Seidelin on his return from the Liverpool yellow fever expedition to Yucatan. Sir William declared that Dr. Seidelin had made discoveries which would greatly promote the study of tropical diseases and therefore benefit all who lived there or had to go there for a time. Prof. J. L. Todd believed the day would come when Europeans could live as safely in tropical as in temperate climates.

OUR LETTER FROM THE PHILIPPINES.

(From our Regular Correspondent.)

THE MOSQUITO PROBLEM—MEETING OF THE MANILA MEDICAL SOCIETY—A CASE SIMULATING LEPROSY—DIARRHEA IN CAMP—DISEASES PRESENT IN THE BATANES ISLANDS.

MANILA, June 14, 1912.

THE mosquito campaign which has been conducted in Manila during the past year and a half, and which met with considerable success, has had a sharp set-back during the past few weeks. Heretofore, the mosquitos that have been annoying to man in Manila have been the *Stegomyia perstans*, which flies during the day, and the *Culex fatigans*, which is a night flier and is supposed to be responsible for the transmission of dengue and filariasis. Accordingly, the campaign has been directed entirely against them, with the result that it is possible to sit on verandas and other open places in the evening, in comparative comfort, which was impossible prior to the beginning of the campaign.

During May and June of each year Manila has its extreme high tides. The highest of these sometimes reaches several feet above the ordinary tides, and this results in much additional lowland being overflowed and water being backed into some of the higher pockets which do not drain. In these, a small black mosquito (*Culex ludlowii*) breeds very profusely, and as oil flows off at each high tide, the only hope for permanent relief would be along engineering lines, and this would require an amount of draining and filling which is beyond the resources of the city to supply, so that, for some weeks it is to be expected that Manila must be again inconvenienced by mosquitos.

The mosquito problem has been further complicated by the fact that it has been again asserted that the *Myzomyia rossii* is responsible for the transmission of malaria. In view of the fact that no anophelina, even after most diligent search, have been found anywhere in the Philippine Islands (with the possible exception of one single specimen which is alleged to have come from the Philippines, and which is now in Washington), and on account of the very general prevalence of malaria throughout the Philippine Islands, and that *Myzomyia rossii* is always found in sections in which the disease is present, and that the anopheles in these sections are conspicuous by their absence, lends considerable confirmation to the belief that this mosquito may be concerned in the transmission of malaria. *Myzomyia rossii* has recently been found in fish ponds in Manila, and difficulty is now being encountered with the owners of these ponds because they object to the destruction of the algæ upon which the larvæ feed and which, in turn, serve as food for the fish.

The regular monthly meeting of the Manila Medical Society was held on the roof of the building of the College of Medicine and Surgery, at 8:30 P.M., June 3. Two clinical cases were shown by Dr. Sison, of the Philippine General Hospital; one, a case of pseudomuscular hypertrophy, and the other, a case resembling a mild tetanus, but in which no diagnosis had been made. A third case was shown by Major Ashburn, that of a child, 5 years of age, who had been reported to the Bureau of Health as a suspect leper. Upon examination, the diagnosis could not be confirmed. The child had a solid, roseolar eruption, with marked induration, on the forearms, hands, legs, and feet. The palms of the hands and the soles of the feet showed marked callus. There was, evidently, considerable disturbance with the blood supply. The little finger of the left hand had, near its base, a marked constriction resembling ainhum. The little toe of the right foot had apparently been partially absorbed or worn away. The hands were stiff, and with the exception of slight motion of the fingers they were almost useless. On this account, it was evident that the callus was not due to use of the hand. Previous examinations had been made for leprosy bacilli, but with negative results. The condition was evidently an endarteritis. The Wassermann test was markedly positive, and it is now proposed to treat the child with salvarsan and note the result.

The first paper entitled "Dysentery at Baguio," by Doctors Barber and Gomez, was read by the former. A brief account was given of the acute outbreak of diarrhea which occurred at Baguio, the mountain capital of the Philippines. In all, 23 hospital cases came under observation, and of these, 10 died. The laboratory investigation

showed the presence of either the Flexner or the Shiga type of organism in every case. Dr. Barber stated that the routine technique had been used in isolating the bacilli. Smear preparations made by applying a slide directly to the rectal mucosa showed large numbers of bacillary organisms and very few colon organisms. A series of water examinations made by the authors lead them to conclude that water transmission was not a factor in this outbreak.

The next paper, entitled "Diarrhea at Camp John Hay," by Drs. Ashburn and Vedder, was read by Dr. Ashburn. Camp John Hay is the army post located at Baguio, and the object of Dr. Ashburn's paper was to report upon the diarrhea which had taken place among the troops at the time the civil population was affected. During February, an acute, explosive outbreak of diarrhea occurred among the members of one company. Investigation showed that prior to the outbreak the cook of the company had been suffering from diarrhea. Agglutination tests made of his blood two months later showed the same to agglutinate in dilutions of 1 to 20 with the Shiga bacillus. The blood of all members of the company who had been afflicted with the disease agglutinated in dilutions ranging from 1 to 50. The agglutinations among the controls were negative except in the cases of two Igorrote kitchen boys in whom agglutination tests of 1 to 20 were encountered. The investigation made by the authors did not take place until April and in May, which was two months after the acute outbreak, but they did, however, encounter two cases in which the Flexner type of organism was found. The writers concluded that the outbreak was directly due to contamination of the food supplies by the cook, who probably became infected from the two Igorrote kitchen boys who showed positive agglutination tests, and that the water and fly transmission might be safely excluded, and that the diarrhea which had occurred in the last few years in Baguio had, presumably, been bacillary in its nature.

In the discussion which followed, Dr. Heiser stated that the profession owed a large debt of gratitude to the authors of the two papers which had just been read, because the etiology of the Baguio diarrhea which had been so obscure heretofore had been placed upon a scientific basis. In the past, many practitioners had been inclined to place the diarrheas of Baguio in the category of the so-called "hill" diarrhea or mountain diarrhea, or to acute intestinal disturbances due to sudden changes in climate. Other practitioners were of the opinion that the diarrhea was due to the sudden chilling owing to the low temperature, and the disturbance of blood pressure by the altitude of Baguio, which is 5000 feet, and by the failure to provide proper protection to the abdomen with flannel bands at night. All these reasons were very unsatisfactory, and from an epidemiological standpoint were not susceptible to reason. For instance, he stated that, upon the transfer of some 600 Government employees to Baguio during the latter part of February, ten per cent. of the employees were afflicted with diarrhea soon after arrival, but investigation showed that the disease prevailed among persons who were permanent residents to an even greater extent, so that the sudden change to the lower temperature and higher altitude could scarcely be held to account for the diarrhea among the new arrivals. He also pointed out that, this year, on account of the very general use of distilled water, the water transmission of the disease could be excluded with reasonable certainty. He stated, however, that investigation had shown that a new railroad was being constructed with laborers imported from districts in which bacillary dysentery undoubtedly prevailed, and that the sanitation of the camps in which these laborers lived was defective. The excreta was not protected from flies —of which a veritable pest was present in Baguio at the outbreak of the dysentery. It seemed not improbable that flies may have been concerned in the transmission of the disease. He also stated that subsequent investigation had shown that many of the dishes used by Filipino employees had been washed in the overflow from the septic tanks, and that the discharges from these tanks had been shown not to have undergone proper bacteriolytic action. He stated that the insanitary conditions at Baguio were due largely to the fact that the town had been developed at the expense of sanitation; the advice of the medical man had gone unheeded, and no funds were provided to carry out such necessary sanitary measures as proper disposal of garbage and sewage, and that it was only when the community became alarmed at the large number of deaths from dysentery that funds became available for installing a few temporary or emergency disposal systems. The campaign which had been waged against flies had been reasonably successful, and, at all events, the reduction in the number of flies corresponded with the great reduction in the number of cases of diarrhea.

The next paper was entitled "Diseases Prevalent in the Batanes Islands," and was read by Dr. D. G. Willets. The Batanes Islands are a group north of the Philippine archipelago, and south of Formosa, and, on account of the very infrequent communication with the civilized world, they have not suffered so much, especially from the dangerous communicable diseases, as have other sections of the Philippines. The population of the islands is, roughly, 12,000 persons. There is not a medical man among them. Dr. Willets found the usual diseases. He examined, for instance, the stools of 400 persons, in which he found two cases of amebæ, one balantidia. Sixty-six per cent. had ascaris lumbricoides; 26 per cent. had hookworms, and the entire 400 were afflicted with at least one parasite. A fever, on the island of Isbayat, which is greatly feared by the natives, was investigated by Dr. Willets. The symptoms led him to believe that it was malaria, but the spleen examinations which were made of the several hundred persons in the affected area only showed marked enlargement in one case. Numerous blood examinations failed to reveal any parasites. Later, Dr. Willets contracted a fever himself, and demonstrated the estivoautumnal parasites in his own blood. Since the symptoms corresponded so closely with those which had been described to him, he concluded that the fever was due to malaria. He found a number of cases of hemoptysis, but repeated examinations for tubercle bacilli and *Paragonimus westermanii* were negative, and he concluded that the disease must be chronic bronchitis, because this disease is very prevalent. Dr. Heiser suggested that possibly the hemoptysis might be due to oidium, but as no examination had been made for them it was impossible to state.

The next paper was a preliminary report on some nutritional experiments by Dr. Shacklee.

Progress of Medical Science.

Boston Medical and Surgical Journal.

August 1, 1912.

1. Institutions for the Prevention and Cure of Tuberculosis as Elements in the Social Defense Against the Disease. E. O. Otis.
2. Specific Treatment Against Pulmonary Tuberculosis and Its Complications. One Hundred Tuberculous Patients Treated with Bacterins and Tuberculin. J. A. Lyon.
3. On Some Recurrent Febrile Attacks in Chronic Pulmonary Tuberculosis. C. E. Edson.
4. A Laboratory Course in Physiology Based on Daphnia and Other Animalcules. G. V. N. Dearborn.
5. The Argument for the Large State Insane Hospital. W. Channing.
6. The Prognosis in Dementia Precox. A. W. Stearns.
7. The Gastrointestinal Disturbances Observed in Pernicious Anemia. J. Friedenwald.

1. Elements in the Social Defense Against Tuberculosis.—E. O. Otis states that the institutions or organizations which are more directly and intimately concerned in the prevention and cure of tuberculosis, and which exercise a definite stimulating and educative influence upon society in its defense against the disease, are comprised in the following enumeration: (1) The sanatorium; (2) the tuberculosis dispensary; (3) the "tuberculosis class," first instituted by Pratt of Boston; (4) the open-air school; (5) the day and night camp; (6) the "preventorium," so-called; (7) anti-tuberculosis associations or leagues, national or local, some of which are purely sources of education by means of the tuberculosis exhibition, lectures, literature, the public press, etc., while others undertake creative work, such as the inauguration and maintenance of sanatoria, dispensaries, hospitals for advanced cases, visiting nurses, etc.; (8) compulsory instruction upon tuberculosis in the public school, such as is now required in the public schools of Massachusetts, and doubtless in other progressive communities.

2. Vaccine and Tuberculin Treatment of Tuberculosis.—J. A. Lyon notes that mixed infection is usually present in progressive pulmonary tuberculosis and its complications. Therefore the use of appropriate vaccines is essential, either before the administration of tuberculin or conjointly with the latter. In many catarrhal cases great benefit is derived from polyvalent colon vaccine or, where this fails, an autogenous one made from the colon bacillus found in the feces. In the later stages of tuberculosis or in toxemic cases, the purified tuberculin, if given in appropriate dosage and under due precautions, is a useful adjunct to sanatorium treatment. The improvement in the general condition, due to the checking of the intercurrent infection, enables the tuberculin to act favorably upon processes which, had the concomitant bacteria been disregarded, would certainly be more refractory, if amenable at all.

3. Recurrent Febrile Attacks in Tuberculosis.—C. E. Edson notes that certain individuals with chronic pulmonary tuberculosis give a history of repeated attacks of fever, lasting a week to ten days or more and gradually subsiding. The recognition of these cases rests chiefly upon two factors: First, the repetition of attacks without adequate cause in cases otherwise under conditions favoring improvement, and without any evidence of tissue change corresponding to the constitutional signs; and second, a certain regularity of the periods of recurrence. In seeking an explanation of the attacks, it appeared that they occurred usually in patients with rather extensive involvement of the pulmonary tissue, such as would lead to generally lessened power of oxygenation; in patients who were especially careful in maintaining their nutrition at a maximum, and in avoiding over-exercise; and who were especially conscientious in their obedience to régime. The attacks were apparently of pulmonic origin. That they were due to accumulated unoxidized pyrogenous material, however, seems probable, if not proven by the prompt and often complete relief obtained when such an origin was made the point of therapeutic attack. The chief reliance and the best results have come from recognizing the nature and cause of the attacks, and following the indication for a greater amount of exercise in the intervals; and, when necessary in addition, anticipating each recurrence by a course of salicylates for a few days every four, six or eight weeks, as the case might be. Under such régime it has been possible to abolish some attacks entirely; and so to lessen the severity of others as greatly to improve the physical condition and progress of the patient, and relieve him from the gloom of a supposed intractable tuberculous fever.

6. The Prognosis in Dementia Precox.—A. W. Stearns calls attention to the following facts: (1) The apparent hopelessness of dementia precox so far as mental health is concerned. (2) The high mortality, especially from pulmonary tuberculosis and other pulmonary affections. (3) The probability of subsequent relapse, even though the patient apparently recovers from the first acute attack. (4) The large number of cases requiring permanent hospital care. (5) The danger of mistaking atypical depressions for catatonic dementia precox.

7. Gastrointestinal Disturbances in Pernicious Anemia.—J. Friedenwald has studied a series of fifty-eight cases of pernicious anemia, in all of which gastrointestinal symptoms were noted. Of these cases there were forty-nine males and nine females, the ages ranging between thirty and sixty-two years. In all of these cases complete blood examinations had been made, and only those have been included in the report in which the physical characteristics as well as the examination of the blood left no doubt as to diagnosis. The symptoms manifested were loss of appetite, nausea, vomiting, indigestion (fullness, pressure, distention), diarrhea and constipation. A large proportion of these cases were attended with gastrointestinal disturbances as well as with an absence of gastric secretion; there was present an achylia gastrica in about 70 per cent. of the cases and even in the stage of apparent recovery the gastric secretion did not return. In a smaller proportion of cases, 20 per cent., there was a marked diminution of the secretion, and in a few instances, about 10 per cent., it remained normal. The author concludes that it is quite probable that the poison which produces the hemolysis is also responsible for the alteration in the gastric secretion.

New York Medical Journal.

August 3, 1912.

1. The Advantages of a Cold Dry Climate in the Treatment of Some Forms of Disease. A. D. Blackader.
2. Sexual Crimes. A. Flint.
3. Eclampsia. G. W. Kosmak.
4. Modern Ocular Surgery. T. J. Moran.
5. "Pellagra *Sine* Pellagra." E. J. Wood.
6. Epithelioma. R. H. Boggs.
7. Notes on Tumor Genesis. G. L. Rohdenburg and F. D. Bullock.
8. A Case of Edema of the Orbits, Secondary to Facial Dermatitis. H. F. Hansell.
9. The Tissue Density Factor. H. Wakefield.
10. The Relation of Pelvic Disease in Women to Mental Disturbances. E. A. Schumann.

1. Advantages of a Cold Dry Climate.—A. D. Blackader extols the stimulating and health giving properties of the steadily severe but dry cold of northern Canada, and especially of the Laurentian plateau. The effect of cold air on the body is twofold. First, there is an actual abstraction of heat, which is rarely desirable, and which, so far as possible, should be prevented. Second, cold has a stimulating action on the peripheral nerve endings, strengthening respiration and circulation, and improving oxidation and nutrition. Cold fresh air favors natural sleep, and stimulates the appetite and digestion. In inflammatory conditions of the larynx and trachea cold air may act as an irritant and do definite harm. Individuals suffering from organic diseases of the circulation as a rule stand cold poorly. In a few instances the cold may rouse to in-

creased activity the defective powers of compensation and distinct improvement may set in, but too often an efficient reaction fails to be elicited and the severe cold leads to disastrous results. Anemic patients, as a rule, do well, but require caution in maintaining body heat. In cold weather the eliminating functions of the skin are very slight and toxic materials in the system are thrown off almost entirely by the kidneys and intestinal tract. To benefit from a winter in the north both sets of organs should be in healthy working order. Extreme cold is not desirable for cases of gout, arthritis, or neuritis. For those suffering from advanced degeneration in any organ, for those advanced in years, and for the very young, extreme cold may be distinctly harmful.

7. **Tumor Genesis.**—G. L. Rohdenburg and F. D. Bullock conclude that tumor formation, whether benign or malignant, starts as a localized process at some focus of healing which is usually microscopic, and may either follow a physiological process or be due to extrinsic causes. Either because of the mode of cell death, or for reasons at present not clear, the products of nucleoprotein hydrolysis are not removed by the phagocytic action of the leucocytes. The continued application of certain stimuli causes either benign or malignant new growths, depending probably on the amount and continuation of the stimulus, while the type of tumor depends upon the type of cell involved. Such an hypothesis would explain the many puzzling features of tumor formation, for example, autonomous growth, changes from benign to malignant tumors, changes in tumor types, age, sex, and tissue incidence, and at the same time correlate the at present widely divergent findings in tumor biology.

10. **Female Pelvic Disease and Mental Disturbances.**—E. A. Schumann states that operations of necessity should be performed wherever indicated, whatever the mental state of the patient. Purely elective operations should not be performed upon the insane unless, after careful consideration and study of the indications with the alienist, it is determined that the benefits accruing from the operative procedure will more than counterbalance the shock and strain incident to the anesthesia and the pain involved. Operative procedures designed merely to produce some reflex or other not understood effect upon mental disorders, and practised without definite pathological basis, are absolutely unjustifiable and are to be condemned. To this class belong the extirpation of healthy ovaries, indiscriminate dilatation, curettage, etc. The keynote of gynecological treatment among the insane is conservatism. The insanity already present must be considered as a serious contraindication to any surgical interference, and only when the apparent benefits of an operation of any character whatever are considerably in excess of the risks of an exacerbation of the mental disease, should such interference be suggested.

Journal of the American Medical Association.

August 3, 1912.

1. The Function of the Parathyroid Glands. W. G. MacCallum.
2. The Internal Function of the Pancreas. J. H. Pratt.
3. The Anatomical and Physiological Effects of Iodine on the Thyroid Gland of Exophthalmic Goiter. D. Marine.
4. Newer Methods of Diagnosis of Pathological Conditions of the Liver. I. C. Chase.
5. Report of 150 Cases of Pulmonary Tuberculosis Treated with Tuberculin. H. L. Barnes.
6. Gastrocoloptosis, Its Pathologic Significance and Its Surgical Treatment. T. Rovsing.
7. The Rôle of the Movable Kidney in Intestinal and Vascular Stasis. K. A. J. Mackenzie.
8. Parakeratosis Ostracea (Scutularis). L. Weiss.
9. Further Experimental and Clinical Work Bearing on the Value of Lane Bone-Plates. W. Bartlett.
10. Operative Treatment of Fractures and Dislocations. W. Darrach.
11. Constipation and Headache in Women. A Study in Etiology and Diagnosis. C. A. L. Reed.
12. Iodoglycerole in Mouth Infections. E. S. Talbot.
13. A Study of the Cubic Capacity and Superficial Area of the Maxillary Sinus. V. Loeb.
14. Infected Areas Around the Ends of Roots of Teeth. M. L. Rhein.
15. Five Years' Experience with the High-Calory Diet in Typhoid. W. Coleman.
16. The Action of Subdural Injections of Epinephrin in Experimental Poliomyelitis. P. F. Clark.
17. A Rare Finding in a Suspected Case of Pulmonary Tuberculosis. M. A. Fowler.
18. A New Tonsil Forceps. O. Wilkinson.

1. **The Function of the Parathyroid Glands.**—By W. G. MacCallum. (See MEDICAL RECORD, June 29, 1912, page 1250.)

2. **The Internal Secretion of the Pancreas.**—By J. H. Pratt. (See MEDICAL RECORD, June 29, 1912, page 1250.)

3. **The Effect of Iodine in Exophthalmic Goiter.**—By D. Marine. (See MEDICAL RECORD, June 29, 1912, page 1250.)

4. **Diagnosis of Pathological Conditions of the Liver.**—I. C. Chase concludes that the urobilinogen test is a very delicate test for impaired liver function. Any localized diseased cells will let pathological amounts of urobilinogen pass to the urine. The galactose test, on the contrary, is a general functional test. Galactose is not passed in localized hepatic diseases when the remaining part of the liver has good compensatory function. In the various forms of cirrhosis the galactose test is uniformly positive, being strongest in alcoholic cirrhosis. In septic conditions or advanced stages of infectious diseases a positive galactose test results from liver degeneration. In cases of phosphorus, chloroform, and mineral poisoning, liver degeneration is not shown by the galactose test until some days after the administration of the poison; in phosphorus poisoning, sometimes not until the second or third week. The great value of these tests for differential diagnosis lies in the conclusions which can be drawn from their combined use.

5. **Tuberculin Treatment of Pulmonary Tuberculosis.**—H. L. Barnes reports the results in 150 cases of pulmonary tuberculosis treated with tuberculin at the Rhode Island State Sanatorium during the five years from 1907 to 1912. The tuberculin was administered according to the method of Trudeau, an effort being made to develop tuberculin tolerance by gradually increasing doses. Slight general reaction occurred in 20 per cent. of the cases. Fifty-six of the patients were given watery extract, forty were given old tuberculin, thirty-seven were given bacillus emulsion and the remainder the bouillon filtrate. A portion of the patients did not take the treatment as long as advised, because they could not see any effect from it. In a few cases striking improvement occurred; equally striking results occurred under ordinary treatment, and on the whole the patients did neither better nor worse than patients not so treated. The average duration of sanatorium residence for the tuberculin-treated patients was 11.1 months, against 5.1 months for those not thus treated. The analysis furnished no evidence that these 150 patients taken as a whole were influenced by the tuberculin treatment.

6. **Gastrocoloptosis.**—By T. Rovsing. (See MEDICAL RECORD, June 29, 1912, page 1247.)

7. **Movable Kidney and Intestinal and Vascular Stasis.**—By K. A. J. Mackenzie. (See MEDICAL RECORD, June 29, 1912, page 1249.)

8. **Parakeratosis Ostracea (Scutularis).**—L. Weiss describes a case of this condition of which little has been reported in the literature up to the present time. He agrees with Unna that it is an anomaly of cornification attacking the body in groups and combined with inflammatory phenomena which penetrate deeply and produce peculiarly formed cones. He differs from Unna, however, in not considering the infection microbic. He suggests the specific name "ostracea" as more descriptive of the appearance than "scutularis."

9. **Value of Lane Bone-Plates.**—By W. Bartlett. (See MEDICAL RECORD, June 29, 1912, page 1249.)

10. **Operative Treatment of Fractures and Disloca-**

tions.—By W. Darrach. (See MEDICAL RECORD, June 29, 1912, page 1249.)

11. **Constipation and Headache in Women.**—C. A. L. Reed discredits the common view that the constipation and headaches frequently complained of by women with gynecological derangements are due to the latter, and holds that the chief cause is to be sought in displacement or ptoses of the abdominal and pelvic organs. He has observed so many cases in which these symptoms persisted after all gynecological indications had been met that he feels that the work of Glenard fairly supplies the missing link in the etiologic evidence. The usual displacement is a general descent of the bowels by which the cecum finds its way low into the pelvis, lowering the transverse colon and hepatic flexure with obstructive angulation at the latter and at the splenic flexure. These displacements are not always accompanied by the uncomfortable symptoms; in some cases they may exist with a fair degree of health, but the frequency with which their diagnostic importance has been confirmed by surgical explorations by himself and others, and the uniformity with which they have been relieved by correction of the displacements, have convinced him that such ptoses are frequent causes of pelvic mischief and general disturbance of health in women.

12. **Iodoglycerole in the Treatment of Mouth Infections.**—E. S. Talbot applies this name to a preparation consisting of water, 2 parts; zinc oxide, 3 parts; iodine crystals, 5 parts; and glycerine, 10 parts. He notes that as compared with the ordinary tincture of iodine, its astringent properties are greatly increased; glycerine causes rapid absorption and the irritating effects are reduced to a minimum. The penetrating effect is remarkable. The glycerine thickens the preparation and prevents it from mixing with the saliva and running over the mouth, as the ordinary tincture will do. This preparation may be used on the gums every day, if necessary, without injuring the parts. The teeth as well as the soft parts of the mouth should be treated in like manner. The author has been able to reduce decay of the teeth in his patients by the use of this preparation from 30 to 40 per cent. All patients receive this treatment before or after each sitting. He finds it especially useful in cases with bone disease, such as caries, necrosis, osteomyelitis, and on all pus surfaces.

15. **The High-Calory Diet in Typhoid Fever.**—By W. Coleman. (See MEDICAL RECORD, June 8, 1912, page 1119.)

16. **Subdural Injections of Epinephrin in Experimental Poliomyelitis.**—B. F. Clark has found that a subdural injection of epinephrin was capable of producing a marked change in the character of the paralytic phenomena in experimental poliomyelitis, although the effects were not equally striking in all cases. The general result was an improvement in the tone of the paralyzed muscles and in the respiratory movements. In some animals the effects were striking, and a state of extreme flaccidity and unconsciousness with almost complete disappearance of reflexes was succeeded by one of tonus, of strengthened reflexes and of return of consciousness. Life was apparently prolonged in these cases. In another case there was no definite proof that life was prolonged, and the symptoms were only moderately ameliorated. An examination of the two classes of cases would seem to show that the employment of the epinephrin relatively early in the course of paralysis does not in the monkey inoculated intracerebrally with a highly active virus bring about an arrest of the progress of the disease. The life-saving action of the epinephrin is shown in the case of the moribund animals, in which life was prolonged either for several hours or for several days by the restoration of the failing respiratory function. Finally, the effects of epinephrin in experimental poliomyelitis support the view that a state of hyperemia of the blood vessels attended by an exudation of plasma and probably of cells also precedes the severer state of destruction of nerve-cells and interstitial tissue of the spinal cord. They indicate further that subdural injections of epinephrin in proper doses may be found capable of averting in human beings, the subjects of ascending forms of poliomyelitis, a fatal issue through the involvement, in the extending hyperemia and inflammatory edema, of the nerve-cells from which the phrenic nerves take their origin. Should this temporary interruption of the active pathological process coincide with the natural limitation of the disease, even life may be spared. The experiments do not indicate that epinephrin itself contributes in any way to the promotion of the limitation of the lesions. Epinephrin is not a curative drug in the sense that it acts on and neutralizes the poliomyelitic virus. Any favorable effect that it may produce results from its action on the blood vessels and the consequent control of exudations.

The Lancet.

July 27, 1912.

1. Relations of the Circulation. G. A. Gibson.
2. Personal Experiences in the Surgery of the Large Bowel. F. T. Paul.
3. Syphilitic Lung Affections and Immunity in Native Races. H. C. French.
4. The Causes Leading to Educational Deafness in Children, with Special Reference to Prevention. M. Yearsley.
5. The Distribution of Chloroform in the Blood. G. H. Clark and D. Lindsay.
6. Two Unusual Forms of Meningitis Occurring in Infancy. E. B. Smith and A. W. G. Woodforce.
7. Two Cases of Pulsating Exophthalmos, in Which the Carotid Artery Was Ligatured. R. R. James and W. F. Fedden.
8. The Claim of Sir Charles Bell to the Discovery of Motor and Sensory Nerve Channels. F. W. Edridge-Green.

1. **The Relations of the Circulation.**—By G. A. Gibson. (See MEDICAL RECORD, August 10, 1912, page 271.)

2. **Surgery of the Large Bowel.**—By F. T. Paul. (See MEDICAL RECORD, August 10, 1912, page 272.)

3. **Syphilitic Lung Affections.**—H. C. French states that in early secondary syphilis bronchitis is not infrequent, but is usually attributable to the use of mercury or potassium iodide, or supervenes as an accidental factor. Syphilis may be responsible for pneumonia in the early secondary stage. The pneumonia may be of septic origin, possibly due to ulcerative conditions in the mouth, or to carious teeth giving rise to septic intoxication.

5. **Distribution of Chloroform in the Blood.**—G. H. Clark and D. Lindsay present evidence that in rabbits the blood contains a larger proportion of chloroform in the plasma when the anesthetic is given subcutaneously than when it is given by inhalation. This is considered to be the reason for the delay in elimination and the consequent greater injury to the tissues which is associated with the former mode of administration.

6. **Unusual Forms of Meningitis in Infancy.**—E. B. Smith and A. W. G. Woodforce report the histories of two rare cases of meningitis. The interesting features of the first of these were as follows: (1) The long duration of the case—fourteen weeks; (2) the appearance in the first instance of a suppurative meningitis due apparently to a leptothrix alone; (3) the slight initial symptoms associated with this form of suppurative meningitis; and (4) the apparent tendency to recovery from this infection which was prevented by the very unusual sequence of a secondary infection of the meninges by the tubercle bacillus. It may be said that this was really all the time a double synchronous infection and not a successive condition; in opposition to this view the authors state that the sudden onset, the preliminary stages, the appearance and contents of the cerebrospinal fluid, and especially the long duration of the illness, were all against an original tuberculous infection. The second case reported was one of colon bacillus meningitis. From a review of the re-

corded cases it would appear that primary *B. coli* meningitis is a disease of infancy and manifests itself in two forms—as a serous meningitis and as a suppurative meningitis. Further consideration shows that as regards symptoms the disease is indeterminable from other types of acute meningitis, while as regards prognosis it is by no means invariably fatal. Only 50 per cent. proved immediately fatal. Recovery may be presumably complete or be attended by sequelæ such as may follow any acute meningitis—namely, mental deficiency, hydrocephalus, loss of special senses, etc. A differential diagnosis from other types of meningitis can only be made by a careful examination of the cerebrospinal fluid.

7. **Pulsating Exophthalmos.**—R. R. James and W. F. Fedden note that cases of pulsating exophthalmos are not very common, only about twenty having been published in England. Ligature of the carotid appears to have been practised in about half of these cases. Two cases of this condition are reported by the authors. Both cases are regarded as examples of arteriovenous communication, presumably in the cavernous sinus, secondary to a fracture of the base of the skull.

British Medical Journal.

July 27, 1912.

1. "What Are We? What Are We Doing Here? Whence Do We Come and Whither Do We Go?" Sir James Barr.
2. The Relations of the Circulation. G. A. Gibson.
3. Personal Experiences in the Surgery of the Large Bowel. F. T. Paul.

Münchener medizinische Wochenschrift.

July 23, 1912.

Palliative Treatment of Prostatic Hypertrophy.—Joseph refers to cases ineligible to operation and self-catheterization—old, decrepit, poor subjects with defective mental powers. Something must be done to remedy these cases, and one of the more recent customs is the establishment of a suprapubic fistula, into which a urinal may be fitted. While the idea is sound, the technique thus far evidently leaves much to be desired. The author, who is assistant to Professor Tietze of the Mikulicz clinic, Breslau, has devised a procedure which has given good results in urinary retention of all kinds. With bladder filled to the limit patient is placed in the Trendelenburg position and an incision 1 cm. long is made in the median line a finger's breadth above the symphysis. Through this opening a trocar is passed into the bladder, and the cannula left in situ, and through the latter a catheter is introduced until the bladder contents begin to escape. The catheter may be worn in the fistula without any retention apparatus. It is provided with a stopcock and whenever the patient feels the desire to urinate he turns it. There is no escape of urine around the catheter. If leakage develops later the catheter may be removed for twenty-four hours, whereupon retraction occurs of itself. Every four or five weeks catheters should be changed.

Pituitrin as a General Postoperative Tonic.—Jaschke refers especially to the good effects of pituitrin on the bladder. It was discovered by accident that a favorable action occurred in this respect after confinement, and it was then ascertained that after operations in which pituitrin was used there was less demand for the catheter. At the same time a favorable action has been noted on the intestinal peristalsis. When we bear in mind the known effect of the drug on the vascular tonus the conclusion lies near that pituitrin may be regarded as a general tonic to all smooth muscle. The author has used the remedy in a series of 44 operations in the field of abdominal surgery. In nearly half of this number the patients did not require a catheter at any time. The others were not blameless in this respect, but in the majority of these the return of spontaneous micturition was not delayed beyond the second or third day. In delayed cases it was customary to repeat the doses. The author seems inclined to use pituitrin after any operation in which the cardiovascular apparatus may benefit by artificial support, while its additional power over the bladder is also welcome.

Acetonemia in Children from Fat Ingestion.—Silberstein states that acetonemia in childhood is associated with markedly coated tongue, vomiting, pallor, and fever. This syndrome sometimes follows the ingestion of cod liver oil. Repeated attacks in the same child have been traced to the ingestion of whipped cream, milk, cheese, etc. A fruity odor of the breath and acetone in the urine usually accompany these attacks. Naturally a marked individual disposition in this affection must be present, as a result of which acetone bodies are split off from the diet fat. In other words, an intolerance is present, and doubtless the kind of fat cuts no figure, while direct ingestion of fatty acids might of itself cause the picture. The treatment consists of alkalies (soda) at the outset, followed by pepsin—HCl.

Deutsche medizinische Wochenschrift.

July 18, 1912.

Is Sympathetic Ophthalmia Due to Anaphylaxis?—Peters emphasizes the shortcoming of all of the old theories respecting the nature of this affection. Hence it is inevitable that a theory of anaphylaxis must be tested and this has been done of late by Elschnig. The latter has shown that eye pigment has a pronounced antigen action of an organ-specific character. The arguments in favor of an anaphylactic causation are at present inferior in force to any of the older views, and the only reason to advance the theory is simply because no further ones are available. From the anaphylactic viewpoint it would have to be assumed that pigment absorbed from the disintegrating eye is able to sensitize the other eye. This of course could cooperate with some other causal element.

Treatment of Scars.—Kirchberg, an authority on massage, contributes a study of scar treatment on a basis of manipulation, the latter being peculiarly adapted to meet the different indications. The intense itching, the pressure pains due to retraction, the disfigurement, disability, the likelihood of scar keloid and scar cancer developing, the susceptibility to injury, all furnish indications for treatment. The author divides scars into (1) flat, level with skin, mostly white; (2) deep, atrophic and (3) hypertrophic. The first variety is chiefly a blemish of cosmetic significance only, and may be tattooed in such way as to conceal them. In the deep, atrophic form, the subjacent adhesions must be detached. While treatment of pittings from small-pox and acne is on the whole unsatisfactory, some excellent results have been secured by massage, but this must often be kept up month in and out. The movements consist of surface frictions with finger tips, the skin also being pushed or pulled back and forth over the subjacent bones. The manual massage must be supplemented by vibrations. Even after many years this treatment may be begun with good prospects for success. Hypertrophic scars require special measures—compression with plaster, fibrolysin, etc.

Utility of Oppenheim's Nutrition Quotients.—Von Sohlern refers to Oppenheim's attempts to secure certain coefficients for expressing the state of nutrition of an individual—such for example as the chest girth divided by the measurement of the biceps. He finds this idea of small merit for adults. The two quotients by themselves give but little idea of the nutrition. Oppenheim had advanced the idea that the quotient given above plus another in which the dividend was the chest girth multiplied by the arm girth and the divisor the height of the subject would be fairly indicative. It is possible that a trustworthy method might be developed along these lines but it would be too cumbersome for practice.

Insurance Medicine.

The Treatment of Substandard Risks.—John C. Cameron says that there are four recognized methods of treating substandard lives, taking the term for the present to embrace borderline cases: (1) To limit the plan of policy. (2) To grant the policy applied for at the ordinary rates but subject to a fixed or decreasing reduction during a given period—this being known as the lien plan. (3) To rate up the life by a certain number of years. (4) To charge a constant extra premium for the term of policy or a shorter period.

Considering now the first method of limitation of plan, it can be understood that if there were reason to believe that applicants of say 35 would not in all probability experience heavier mortality than good average select lives of this age during the early years of the policy, but that heredity or some personal tendency would cause considerable extra mortality commencing about age 55, there would be justification for offering a 20-year endowment, thereby cutting out all risk to the company after the twenty years.

The second method, the lien plan, is probably in many respects the best method of handling definite substandard risks, either by itself or in combination with a limitation of plan. To show the working of this method imagine an extreme case in which the mortality has been ascertained or anticipated to be double the standard throughout. The risk would be asked to pay the regular premium rate applicable to his age, and in the event of death during the existence of the lien, there would be deducted from the face amount of the policy half of the net sum at risk. To make the case perfectly clear the fact must be borne in mind that the net level premium is built up of two things, (1) the reserve or investment element which year by year accumulates to the reserve, and (2) a mortality element which pays for the year's risk. At the end of a certain period the investment element in a $1,000 policy has accumulated to say $200, and the amount is obviously untouched by the mortality and therefore must be credited in full to the insured's estate, whether he is alive or dead. On the other hand, the mortality element on account of the double mortality will only purchase half the amount it would for a normal life. If an endowment policy were selected or offered together with the lien plan it is evident that on the maturity of the policy the insured would obtain the whole face amount, being thus in no worse case than if he had been the best of risks. He is then in the position of a man who has backed his own vitality and won.

The third method, "rating up" or charging the premium for an advanced age in order to meet the extra risk, has been very popular in Great Britain and Europe. The underlying assumption is that the insured, so long as the rating endures, will be subject to the mortality of a life of the rated-up age. It seems likely that in many cases the extra mortality will not fall according to the manner assumed, so that the method is to that extent illogical.

The fourth method of simply charging an extra premium in cash corresponding to extra mortality for so long as is thought advisable, though it may be made quite a scientific one, has never found great favor with the public.—*Proceedings of the Second Mid-Year Meeting of the Medical Section of the American Life Convention*, February and March, 1912.

The Lien Contract in Substandard Insurance Business.—Henry Wireman Cook, Medical Director, Northwestern National Life Insurance Company, says that he is distinctly in favor of the lien form of substandard business, particularly for the small company. We know that the man who thinks he is going to die soon is most anxious to take a substandard policy of the better class, and if he thinks he is going to live will either not take the policy or will drop it. This is not true of the lien form as it is of the rating-up form, for this reason: A man who does not believe he is going to live will scarcely look with favor on a lien contract, because the limitations of his contract occur during the first few years. If he thinks he is going to die he wants the most insurance he can get for his money, and he will be more in favor of a rated-up contract. The author believes that the enthusiasm about the substandard business is due to the fact that one must recognize the injustice of the average selection of standard and rejected risks. This selection is improper and unscientific. To say that ten men are not insurable and that ninety men are all insurable in some form is absurd. Take one hundred applicants for insurance, properly graded so that they will rate in order from the best risk to the worst risk and no two of these men are equally good risks. Of course it will never become possible to rate them so carefully that each man will have his own separate rating, but as we improve our medical diagnoses we will be able to make more definite decisions regarding risks and rate them according to their probable expectancy. The absurdities of existing methods are obvious. For instance, we call ten per cent. rejected, ninety per cent. standard. In every company from five to fifteen per cent. are borderline cases. One medical director may accept a risk and another may decline it. The personal equation enters in, and this is unfair to the applicant. Every company is taking Bright's disease right along on standard risks.

There is a danger of depending on actuarial experience too closely, without regard to the clinical side of the case. An instance is cited in which ten or twenty per cent. is deducted from a man's rating because he lives in a favorable locality or otherwise. Let it be supposed that a man who lives in Minnesota develops Bright's disease. Minnesota is considered one of the healthiest States in the country. But he goes to Louisiana for his health. In that case we know that he will live longer in Louisiana with Bright's disease than in Minnesota. If you acted in this case from a strictly actuarial point of view, instead of giving the man the benefit of sound medical advice, one would charge him an additional premium. But if he lived in Minnesota, where the cold winters would aggravate the disease, he would get a better rating. Again it has been brought out by Hunter that a man after three attacks of rheumatism should be given a certain definite added percentage, that is, without regard to the clinical side of the case. Let it be supposed that the man's rheumatism is due to diseased tonsils, and that these are removed. Is that man not a better risk after the tonsils have been removed? Most physicians would agree that he should be given a new rating. An injustice can be done the applicant by adhering too strictly to the actuarial point of view, and disregarding the clinical standpoint.—*Second Mid-Year Meeting of the Medical Section of the American Life Convention*, Feb. 28, 1912.

Book Reviews.

DIAGNOSTIC METHODS: Chemical, Bacteriological, and Microscopical. A Textbook for Students and Practitioners. By RALPH W. WEBSTER, M.D., Ph.D., Assistant Professor of Pharmacological Therapeutics and Instructor in Medicine in Rush Medical College, University of Chicago; Director of Chicago Clinical Laboratory. Second Edition, Revised and Enlarged. With 37 colored plates and 164 other illustrations. Price $4.50. Philadelphia: P. Blakiston's Son & Co., 1912.

THE second edition of this unusually valuable book has been enlarged by about forty pages, but by the adoption of thinner paper the actual thickness and weight of the volume have been very advantageously lessened. A careful survey of its pages shows that the revision has been most painstaking, and the reviewer has been unable to detect any omissions worth mentioning. Such recent matters as the methods for the cultivation of *Treponema pallidum*, for performing the luetin reaction, and applying the phenolsulphonephthalein test for renal efficiency are included, as well as whatever else of real importance has been contributed to the field of laboratory diagnosis during the last three years. The discussion of the technique of the Wassermann reaction is especially commendable for its thoroughness and attention to detail. Professor Webster is evidently a very careful student of the literature, and presents excellent summaries of the views of other authors, but at the same time he adds greatly to the interest and value of his text by giving his own opinions freely and stating the conclusions to which his own observations have led him. This suggests mention of what seems to be the one defect of the book—namely, the illustrations. It is really a great pity that a volume of which the text is characterized by so much originality and strong individuality should have so great a proportion of its illustrations taken from other books, and largely from a single one. It is very much to be hoped that these will in the future be replaced by original figures which will put this feature of the book on a parity with the exceptionally excellent letterpress.

A MANUAL OF SURGICAL TREATMENT by Sir W. WATSON CHEYNE, Bart., C.B., D.Sc., LL.D., F.R.C.S., F.R.S., Hon. Surgeon in Ordinary to H. M. the King; Senior Surgeon to King's College Hospital, and F. F. BURGHARD, M.S. (Lond.), F.R.C.S., Surgeon to King's College Hospital and Senior Surgeon to the Children's Hospital, Paddington Green. New Edition, entirely revised and largely rewritten with the assistance of T. P. LEGG, M.S. (Lond.), F.R.C.S. Surgeon to the Royal Free Hospital; Assistant Surgeon to King's College Hospital, and ARTHUR EDMONDS, M.S. (Lond.), F.R.C.S. Surgeon to the Great Northern Central Hospital; Surgeon to Out-Patients, The Children's Hospital, Paddington Green. In Five Volumes, Vol. II. Price $6.00. Philadelphia and New York: Lea & Febiger, 1912.

THE successive volumes of this important work are being published with but little delay. This is as it should be, and is a guarantee that the book will be up to date throughout. The present volume contains chapters on: Affections of the skin and subcutaneous tissues, of the nails, of the lymphatics, of fasciæ, of bursæ, of muscles, of tendon sheaths, of tendons, of nerves, of veins and arteries; on the treatment of special aneurysms; fractures; inflammation of bones; necrosis; tuberculous, syphilitic and rheumatic diseases of bones; actinomycosis, rickets, and various disorders of ossification; tumors of bone; and amputations. The two volumes that have now appeared seem to be well up to the high standard of the former edition; and for the practitioner who often wishes for full and detailed information as to the best methods of treatment this work is admirably adapted.

THE CLASSICAL PSYCHOLOGISTS. Selections Illustrating Psychology from Anaxagoras to Wundt. Compiled by BENJAMIN RAND, Ph.D., Harvard University. Boston, New York, Chicago; Houghton, Mifflin Company. 1912.

THIS is a book of chief interest to the psychologist and student of psychology; but the general reader will find in it a great deal of material taken from the writings of world renowned psychologists from earliest times. For it is a history of psychology based upon original and translated extracts rather than an ordinary description of systems. It claims to contain the first extant history of the earlier psychological theories. Beginning with Anoxagoras and Democritus, and an introduction from Aristotle's "De Anima," the writer gives selections from the classical psychologists of ancient, mediæval, and modern times, for the most part in chronological order, but with slight variations to permit of grouping according to schools. These selections are sufficiently full and complete to afford an intelligible idea both of author and subject. We may read of the ancient contending sophistic and socratic views in a charming dialogue from that "oldest work in psychology," Plato's Theætetus. Aristotle, the greatest of the ancient psychologists, tells us of the "faculties of the soul"; Zeno, of the Stoics; Epicurus, of those "criteria of truth—the senses, the preconceptions, and the passions"; Lucretius, of "the nature of things," etc. Tertullian, Augustine, Thomas Aquinas, belong to the medieval period. The modern period is introduced with chapters from Thomas Hobbes' "Human Nature," and further comprises selections from the works of Déscartes, Spinoza, Leibnitz, John Locke, Berkeley, Hume, Condillac, Thomas Reid, Herbart, Beneke, Mill, Bain, Herbert Spencer, Johannes Mueller, Fechner, Lange, Wundt, William James and others. Of 726 pages the ancient period takes up 115, the medieval only 31, and the modern period covers 580 pages. Incidentally, it is of interest to find a partial translation of an abstract of the "Analytical Essay upon the Faculties of the Soul," by Charles Bonnet, the Swiss who was an early founder of physiological psychology. While selections from Condillac, Reid, Thomas, Brown, Herbart, Beneke, Mueller and Wundt and some others will also be read with special interest by physicians. The helpful working knowledge of psychology as employed by the psychiater may have to be sought elsewhere. We know of no single volume where so much pertaining to general psychology may be found. It is a fitting companion volume to the writer's "Classical Moralists" and "Modern Classical Philosophers."

A SURGICAL TREATMENT OF LOCOMOTOR ATAXIA. By L. N. DENSLOW, M.D., Fellow New York Academy of Medicine; Late Physician, Diseases of the Skin (Out-Patients). Bellevue Hospital, New York; Late Professor Genitourinary Surgery and Venereal Diseases, St. Paul Medical College, Minnesota. Price 3s. 6d. London: Baillière, Tindall & Cox, 1912.

THE so-called Denslow theory that the cord changes in tabes are due primarily to irritation of peripheral nerves, from abnormal conditions in the urethra, was extensively discredited in this country by both neurologists and genitourinary specialists some years ago, when the author practised on this side of the water. Later, a small book was issued in France describing the theory and Denslow treatment; and now the present book appears, in London, claiming the "cure or alleviation" of such symptoms as the pains, ataxia, crises, incontinence, anesthesias, etc., by urethral treatment; and the author states that the disease may at least be held in check by the relief of strictures of the urethra, which he says are always found in every male case of tabes. Tabetics, like epileptics, are notoriously fond of trying any treatment for their condition which they find, in some way, duly advertised. The improvement which they confidently expect is usually not forthcoming, however, and is never commensurate with the alteration of the pocketbook which is a *sine qua non* of most of the sure cures.

RECENT ADVANCES IN HEMATOLOGY. Being the Dr. James Watson Lectures for 1910. By WALTER K. HUNTER, M.D., D.Sc., Fellow of the Royal Faculty of Physicians and Surgeons, Glasgow; Physician to the Glasgow Royal Infirmary; Extra Physician to the Royal Hospital for Sick Children; Lecturer and Examiner in Practice of Medicine, Glasgow University. With a colored plate. Price $2.25. New York: William Wood & Company, 1912.

DESPITE the energy which has been applied to the study of hematology in the last fifteen or twenty years, there are still many disputed points and the classification of many of the diseases of the blood is as yet on no very firm foundation. It is difficult, therefore, for a beginner to wade through the enormous literature on the subject which has accumulated, and to obtain any clear impression of our present views on the blood. Especially is this true with regard to the German school which is now apparently engaged in an endless polemic on minor details of morphology, a procedure which is not likely to add much to our knowledge. A short and clear statement of facts and current theories has long been needed, and this little volume of Hunter's supplies the want most perfectly. It is quite full on what we know and fortunately leaves the discussion of what we do not know to other more voluminous texts. As a review of present opinions on the blood it is perhaps the most useful book of its size and scope which has come under the reviewer's notice.

Society Reports.

BRITISH MEDICAL ASSOCIATION.

Annual Meeting, Held in Liverpool, July 23-26, 1912.

(*Continued from page 274.*)

SECTION ON OBSTETRICS AND GYNECOLOGY.

First Day—Wednesday, July 24.

PROFESSOR BRIGGS OF LIVERPOOL, IN THE CHAIR.

The Results of Treatment of the Inflammatory Diseases of the Uterine Appendages.—Dr. W. S. A. GRIFFITH of London opened a discussion on this subject, taking the medical aspect. He said that the treatment of these diseases had passed from simple methods to operative surgery with in many cases great benefit. In recent years, by means of bacteriology, the causes were being discovered and in consequence medical treatment was coming back with results more promising than in the past. It began with prevention and he thought that more should be done in the instruction of men with gleet. The best step was the arrest of the infective process in the vulva and vagina whenever possible, and the third was the use of sera and vaccines. The older writers, as Matthews Duncan, never operated, and even in cases of pelvic abscess were reluctant to interfere; the advance of surgical treatment had led to more exact pathological knowledge. The old treatment included rest in bed, aperients and depletion by leeches to the cervix, compresses, opiates and, later, mercurial ointments and blisters. Many of these means were still useful. Thermal treatment now consisted in poultice and hot douches; he had had good results from the continuous hot douche. Radium had been tried in France and good results had been reported. Serums and vaccines had been much used and much improvement in their use had followed more careful bacteriological investigations, but there were many difficulties. Acute vaginitis was not always of gonorrhea origin. Gonorrheal vaginitis could usually be cured in two to three weeks by local treatment, and he laid stress on the importance of vaginal disinfection in cases of abortion. The uterus could be disinfected by the flushing curette with subsequent swobbing with antiseptics, and he had had good results from this, even when the tubes were involved. Nearly all the infections of the tube were ascending, except that of tubercle. Serums must be used early to do any good and he had found vaccines most useful in preventing extension of an infection and that they acted like disinfection of the vulva and vagina. The value of the latter could not be over-estimated; he used iodine. Vaccines had given good results in the valvovaginitis of children.

Mr. CHRISTOPHER MARTIN of Birmingham spoke from the surgical aspect. He said that he did not resort to operation until he had made a good trial of medical means. In the past many mutilating operations had been needlessly performed. Dealing firstly with ovarian inflammation: Acute ovaritis rarely called for surgical treatment and it would be as reasonable to remove a testicle for orchitis. If an ovary can be felt as a bag of matter an incision in the posterior fornis was called for and removal could be done more safely later. The more severe the local lesion the better were the results from operation. No good resulted from oophorectomy in the chronic neurotic. The remote results of the removal of both ovaries were indefinite. Menstruation ceased. The whole genital canal underwent atrophy. There was a tendency to the formation of caruncle and patches of vascular degeneration. Severe vaso-motor changes. None of the above changes occurred if even a small piece of ovary was left behind. When they did occur they could be removed to some extent by administering ovarian substance of the sheep.

Tubal inflammations were due to gonorrhea, tubercle, sepsis, and the infection spread directly from the uterus. In most cases adhesions formed. Many cases of a chronic character could be treated by conservative measures, opening up ostium and performing, curetting, and ventral fixation. Many cases of salpyngitis were due to previous appendicitis, and in operating the appendix should always be examined. In unilateral salpyngitis he would not remove both tubes, but would curette the uterus when the diseased tube was removed. In bilateral disease he would remove both tubes and the uterus, saving part of an ovary if possible. In acute pyosalpyns he advocated vaginal incision, doing an abdominal section later if necessary; in these cases primary abdominal section was full of danger. The sequelæ of these operations were: hernia; this was less common, since abdominal drainage had been done less frequently.

Sinuses may be due to foci of infection which had been left behind, or to silk ligatures; he now used catgut only.

Fecal fistula. This was most common in tuberculous cases; menorrhagia, occasionally, when uterus was not removed.

Dr. HAULTAIN of Edinburgh had seen good results in some cases after removing the ovaries for epilepsy when the latter appeared to be distinctly menstrual in origin.

Dr. SCHARLIEB of London said that results were much better since the introduction of vaginal drainage. She agreed with removal of the uterus in many cases, but she always tried to keep a portion of an ovary; she considered that some of these operations were the most difficult in gynecology.

Dr. ARMAND ROUTH of London advocatd antiseptic treatment of the uterus and vagina; he applied iodine (1 in 4) to the endometrium. He had found electric light and heat both very useful. He insisted on the importance of physiological rest for the organs for many months after treatment had ceased, and the husband should be examined to prevent re-infection. He had found vaccine treatment, using doses of 10,000,000 gonococci, do much good. In acute cases he advised waiting for the condition to quiet down and the pus to become sterile before operating. Spontaneous rupture of pus tubes was very rare. He also approved of vaginal incision in acute cases, doing an abdominal section later if necessary.

Sir JOHN BYERS of Belfast had had good results from vaccines, but had not found serum beneficial. He also urged preventive measures, antiseptics in labor, and instruction in regard to gonorrhea. He did not believe that gonorrhea ever caused acute puerperal sepsis.

Professor HELLIER of Leeds said that some patients cannot afford time for medical treatment; he had found yeast suppositories very useful in acute gonorrhea.

Dr. BECKWITH WHITEHOUSE of Birmingham had made bacteriological investigations which showed that in many cases of salpyngitis the uterus was sterile.

Dr. PURSLOW of Birmingham said that in his experience the gonorrheal cases showed much greater tendency to spontaneous recovery than those due to other injections.

Dr. FRED EDGE of Birmingham said that pus tubes were sometimes due to gonorrhea at the uterine end of the tube. He said that there was much liability to recurrence in the tube which was apparently healthy at the operation. The danger of vaginal opening was the risk of mixed infection.

Dr. BELL of Bradford had tried vaccines in gonorrhea in both males and females and had found little benefit. He placed great faith in nature's power of cure

Dr. FRANCES IVENS of Liverpool combined vaccine treatment with surgical measures; treated cases by abdominal section without drainage when due to gonorrhea.

Dr. GEMMELL of Liverpool had found that gonorrheal cases recovered spontaneously better than septic cases. He had experienced no success in the treatment of sterility by opening up occluded tubes.

Professor BRIGGS of Liverpool said that the drainage was more free by the vaginal than the abdominal route and he advocated the former. He had seen benefit from vaccines in cases associated with gonorrheal rheumatism.

Dr. GRIFFITH, in reply, said that if one drug was useful in chronic inflammatory affections that drug was mercury. He considered it unjustifiable and harmful to remove ovaries for epilepsy. Conservative treatment was not advisable in tuberculous cases.

Dr. CHRISTOPHER MARTIN, in reply, also disapproved of operating in epileptic cases; said that the late Professor Taylor had pointed out that chronic cases could be cured by prolonged course of mercury and iodide, and he agreed with this.

SECTION OF SURGERY.

First Day—Wednesday, July 24.

The Treatment of Carcinoma of the Rectum.—Dr. HARRISON CRIPPS of London opened the discussion. He first glanced briefly at the modern history of the subject in connection with the names of Lisfranc, Dieffenbach, Marchant, Kraske, Kelsey, Paget, Jersof, Allingham, Edwards, Mummery, and Handley. The bearing of pathology on surgical treatment was then noticed. The growth is almost invariably in the form of adenoid cancer growing from the base of Lieberkuhn's follicles into the submucous and other coats of the rectum, thence to lymphatic glands and the liver and other organs. In structure rectal cancer is very like an innocent papilloma; but the latter grows into the lumen by branches, whereas the former grows

downward by roots. He saw no evidence that mechanical irritation will produce a cancer of the rectum, and thought a specific organism bringing infection from without the body would in time be discovered. He likened the process to gall-tumor promotion in the oak due to the irritation of the egg of *sineps quercus folii*. Rectal cancer is always local in origin, and at first tends to spread horizontally rather than deeply. Ulceration ensues with a hard edge, ending abruptly in sound mucous membrane. Lymphatic infection was a late stage, and thus rendered operation more hopeful. He objected to Mr. Handley's view that rectal cancer cells permeate the lymphatics some inches beyond the original site without producing hardness of the tissue, with the inference that long lengths of bowel should be excised to prevent recurrence. Clinical experience is opposed to this deduction, for resection at a line an inch or less from the apparent limit of disease is seldom followed by recurrence except at the extreme edge of the cut margin; and even this is exceptional, because as a rule cancer reappears in structures external to the bowel. He regarded one inch as a fair margin, and could cite dozens of successful cases where no more had been allowed. A valuable procedure would fall into discredit if wholesale removal was practised in deference to an unproved pathological theory.

Turning to diagnosis he held that certainty was only possible by digital examination. A hard surface must be actually touched by the finger. If within six inches of the anus this is easy. The utmost gentleness must be used or the gut might tear like wet paper. The sigmoidoscope is worse than useless for diagnosing rectal cancer.

In selecting cases for operation regard must be had to the prospect of removing the whole disease. He has not been able to recommend excision in more than one-third of his cases. Contraindications are: (1) Obvious dissemination in internal organs; (2) inability to define the upper edge if the sacral route is contemplated, or to push the growth upward for an abdominal operation; (3) fixity to neighboring parts. Age, of itself, is not of much importance, as old people will stand well a moderate operation on the rectum. If excision is impossible, colotomy in suitable cases robs the disease of its worst symptoms, and often prolongs life in a tolerable form. Excision may be done from below or from above, and there is no sort of rivalry between the two methods, the choice being settled on the merits of each case. He described the sacro-perineal operation in detail, including the after treatment. Finally he submitted an analysis of 445 consecutive cases of rectal cancer occurring in his private practice. Colotomy was performed in 151 cases and excision in 108; of the latter 100 recovered. Five of the operations were by the abdominal route, two of them fatal. Of the 100 successful cases of excision 42 remained well for three years and upward. Where colotomy was done the average duration of life was 22 months. He summed up the deductions to be drawn from his experience as follows: (1) That cancer of the rectum may occur at any age, but chiefly after middle life. (2) The disease is twice as frequent in men as it is in women. (3) The importance of early diagnosis, for two-thirds of the cases were too late to admit of excision. (4) That when removal was practicable nearly 40 per cent of the cases were curable. (5) That if recurrence takes place it almost invariably shows itself within twelve months. (6) That colotomy prolongs life.

Dr. G. Heaton of Birmingham found not less than 25 per cent of hospital patients with rectal cancer came for treatment soon enough to make a radical operation possible. The chief contraindications to a complete operation were (1) implication of urethra, prostate or bladder, (2) metastasis in iliac gland, viscera, or peritoneum. Inguinal colotomy was a great boon in inoperable cases; it not only lessened pain and prevented obstruction, but also checked the rate of growth of the cancer. In regard to excision every other consideration must give way to thorough removal of the growth and its lyphatic area. A preliminary colotomy 8 or 10 days before the major operation is advisable; through the abdominal wound the extent of the disease can be determined and information gleaned as to metastases; diversion of feces from the rectum left the field of operation cleaner and healthier; the diseased gut can be removed without opening it; the miseries arising from the incontinence of a sacral anus, or from a strictured rectum, are avoided.

Dr. Sinclair White of Sheffield said his hospital cases of excision of cancerous rectum showed a mortality of about 30 per cent in a series of 78 operations, mostly of the transsacral type. His private cases were more successful, the mortality being 18.7 per cent in 32 operations, of which 20 were by Kraske's method and 3 abdomino-perineal. No case was rejected unless the growth was fixed to the bladder or prostate, or there were metastases elsewhere. In the Kraske group his rule was to perform an iliac colostomy 10 to 14 days previous to excision, and when feasible he preserved the lower end of the rectum with its sphincter. In 6 of the 29 cases a sacral anus resulted. The endeavor to restore the rectal tube with its sphincter accounted for a large percentage of local recurrence of cancer. This method should be restricted to cases where the growth is small, movable, and not lower than three inches from the anus. For less favorable cases free excision must suffice, and this is best done by Hochenegg's method. The abdomino-perineal operation is ideal in conception, but the mortality is very high, especially in males, owing to the depth and narrowness of the pelvis. In his three cases two were females who both did well; the third, who was a male, died of peritonitis. Viewing rectal cancer as a highly malignant disease, more so than cancer of the colon or stomach, free removal was necessary in order to avoid recurrence, incomplete removal being worse than useless. The primary aim should not be an ideal plastic result, but radical extirpation of the growth. An iliac artificial anus with a proper appliance did not bar a patient from useful work, as was instanced by the case cited of a tramcar conductor employed in a large city.

Dr. Sampson Handley of London claimed that clinical evidence supported his view of the permeation of cancer cells. He had found cells extending more than four inches from the growing edge in rectal cancer, and he quoted Swinford Edwards' observation that in 50 per cent. of the cases of perineal excision recurrence appeared in the cut edge of bowel. He advocated the combined radical operation, though he admitted that the present mortality rate of 20 per cent. was too high to give the procedure a permanent position in surgery; but the mortality would diminish as the technique improved. He agreed that it was an objection to the combined method that end-to-end anastonosis was unattainable; but the advocates of the perineal operation were bound to admit that this ideal result could only be achieved in an extremely low proportion of their cases.

Dr. C. P. Childe of Portsmouth urged the advantage of the sacral route for excision. He preferred to operate in two stages, first making an inguinal anus and excising the disease fourteen days later.

Dr. Leedham-Green of Birmingham thought the mortality of the combined operation would compare favorably with that of the sacroperineal. He operated in two stages, first opening the abdomen, sewing the omentum to the posterior surface of the abdominal cavity low down so as to make a partition below the small intestines, and then dividing the rectum above the disease and forming an inguinal anus. In the second stage a fortnight later he again opened the abdomen and completed the excision.

Dr. H. Paterson of London supported the views of Dr. Cripps; and agreed that when the disease was too extensive for removal from below, with very rare exceptions, it should be left alone. Explanation of the liver through a small incision would fail to discover metastases in 50 per cent. of the cases, and was therefore of very little value. If Dr. Handley's view of widespread fermentation is correct then it must be assumed on clinical facts that nature is able to dispose of the outlying cancer cells.

Dr. A. Don of Dundee advocated the combined operation, and thought the sacral route would in time be abandoned. He advised a free abdominal incision for preliminary exploration, and ligature of the internal iliac arteries before cleaning out the pelvic colon.

Dr. Jordan Lloyd of Birmingham was opposed to the extensive procedures recently introduced. In his experience the majority of cases met with were best left alone, palliative measures being adopted. He drew attenion to two main types of rectal cancer—one, in which the growth formed a local lump, being ill-suited for operation; the other, in which the growth took a tubular form, being much more favorable.

Dr. Armstrong of Montreal was in favor of the combined operation in two stages with an interval of fourteen days. His practice was to make an inguinal anus, and not to attempt end-to-end junction of the divided bowel.

Dr. Hey Groves of Bristol insisted on the value of exploration to search for secondary growths in the abdomen, and he agreed that end-to-end junction was too risky a procedure in general. He practised the two-stage operation, not opening the abdomen in the second stage but removing the diseased bowel from below.

Prof. Cameron of Toronto associated himself with those speakers who protested against very extensive resections on the ground that the mortality was prohibitive.

D. A. Fullerton of Belfast did not agree with Dr. Cripps that the sigmoidoscope was useless in the diagnosis of rectal cancer. He cited two cases of excision by the posterior route followed by good functional control. In each case the coccyx was removed. An attempt to join the cut ends of the rectum in one case failed, but a channel was maintained by a Paul's tube, and after a few weeks the posterior wound healed. In the second case he divided the superior hemorrhoidal artery well away from the bowel and brought the pevic colon down to the anal canal, which had been bared of mucous membrane.

Dr. G. P. Newbolt of Liverpool much preferred the posterior operation, and found that excision of the coccyx alone gave adequate access in the majority of cases that could be deemed operable. He cited two cases in which end-to-end junction became feasible after a few months owing to prolapse of the bowel through the sacral anus.

Second Day—Thursday, July 25.

The Diagnosis and Treatment of Tuberculous Disease of the Urinary Tract.—Mr. Harry Fenwick of London opened the discussion on this subject. He said the bedrock fact of renal tuberculosis was that the kidney excreted bacteria and toxins, and these passing down the ureter gave rise to symptoms which simulated cystitis, so that the disease when first noticed by the patient was referred to the bladder. He suggested that discussion should be directed to the questions: Is the kidney the starting point of urinary tuberculosis? and is surgery the only means of cure? In his experience the disease was never primary in the female bladder, but in males infection was frequently traceable to a genital origin. Another difference between the sexes was brought out in the statistics of 1,000 cases submitted to the congresses which had been held in Vienna and Rome, namely, that the results of operative interference were far less satisfactory in males, and there was a much greater tendency in males to chronic lung trouble and generalized tuberculosis. The aid of the bacteriologist is invaluable in diagnosis. If tubercle bacilli are found in the urine of women suffering from symptoms suggestive of cystitis, renal tuberculosis is to be presumed. A thickened ureter resembling a slate pencil crossing the base of the bladder may be palpated in some cases on examination per vaginam or per rectum, and this indicated advanced disease in the corresponding kidney. Such a ureter presents a funnel-shaped meatus on cystiscopy. The orifice of the ureter in vente descending ureteritis is surrounded by a group of small globular swellings which appear like bubbles; and as this condition is not favorable for nephrectomy, operation must be postponed. In about 8 per cent. of the cases of tuberculous kidney the ureteral orifice appears normal on cystoscopy. Drawings were exhibited showing the appearances of kidney and meatus of ureter at different stages of disease. With regard to treatment, tuberculin is a powerful tonic, but not curative; it should only be given when the ureter is an unblocked channel through which the renal excretion can escape; exceptionally it is justifiable to give it in a large dose as a diagnostic by reason of the painful reaction it set up in a tuberculous kidney. Given a sound organ on the other side, a radical cure is effected by nephrectomy. To avoid contamination of the wound the kidney should not be opened on exposure, the diagnosis having been established before operating. A thickened ureter need not be traced low down; it should be curetted for 2 inches and it required no ligature. In order to secure primary healing of the wound drainage should not be employed as a rule. With regard to the tuberculous bladder, the less it was touched the better; as a secondary disease its tendency was to heal on removal of the kidney. When seen in a late stage with its capacity reduced to a dram or two, the state of a patient is one of misery which can only be relieved by short-circuiting the ureters through the loin. The speaker cited the following cure: A girl at 18, with symptoms of cystitis for 2 years and whose urine contained tubercle bacilli, appeared to recover after treatment with tuberculin; 18 years later she again came under observation, her bladder then holding 2 drams; a radiograph showed a large obsolete right kidney, and on cystoscopy the site of the right ureteral orifice was found occupied by scar tissue, while the left one appeared normal. The right kidney was removed and the left ureter short-circuited through the loin, recovery followed and the patient survived a year.

Mr. Fullerton of Belfast referred to tubercle of the bladder. This disease is frequent in Ireland, a series of 700 cystoscopies showing 56 cases of tubercle of the bladder, the sexes being equally divided. The most frequent age incidence was between 20 and 30. Tubercle bacilli were found in 37 of the 56 cases. The symptoms were mainly those of cystitis, renal pain being of late occurrence as a rule. Too much reliance must not be placed on enlargement of the kidney or thickening of the ureter, for these signs may belong to the only functional kidney present. He thought tubercle of the bladder might sometimes be primary. In 50 of the 56 cases it was secondary to renal tuberculosis and in 4 the primary disease was in the epididymis and prostate. In most cases the disease appears to be unilateral. Cystoscopy is of very great value in ascertaining which kidney is at fault, supplemented by the ureteral catheter. The slight risk of such instrumentation is justifiable in view of the indispensable knowledge thereby gained. In his 17 nephrectomies for tuberculous kidney there were 2 deaths.

Mr. E. Deanesly of Wolverhampton agreed that urinary tuberculosis was more amenable to surgical treatment in women than in men; the mortality after nephrectomy was lower and there was a less tendency to infection of other organs. He advocated cystoscopy in every case where the disease was suspected and said that the ureter and trigone showed only insignificant changes in the early stage. Ulceration of the ureteral meatus is not peculiar to tubercle, as he had seen it in a case of renal calculus. He thought the ureteral catheter gave valuable help in diagnosis, but its use was not free from risk. With regard to treatment, in his opinion nephrectomy was the best means available if the other kidney was healthy. His practice is to expose both kidneys through the loin, the patient being in the prone position; by this procedure the condition of the other kidney can be ascertained before the nephrectomy is completed without moving the patient. Tuberculin is of service in the after treatment as a remedy for curing ulceration of the bladder.

Dr. White of Sheffield instanced 6 cases of ureteral calculus preceding tuberculosis. As tubercle was often present in other viscera he deprecated too zealous operative interference, and held that expectant treatment on judicious lines gave encouraging results, nephrectomy being reserved for selected cases. In long-standing disease the kidney may become blended with the duodenum or veva cova.

Mr. Temple Mursell of Johannesberg said the open-air treatment on expectant lines in South Africa failed to cure renal tuberculosis. The effectual remedy for the disease was nephrectomy.

Dr. Darling of Lurgan mentioned a case in which the prostate right ureter and kidney were tuberculous 11 years ago and tuberculin was then given in conjunction with open-air treatment. Marked improvement followed, but a year ago the patient's health broke down under recurrent pyrexial attacks. Six months ago coliform bacilli were detected in the urine; treatment with a suitable anti-vaccine was then undertaken and the patient is now practically well.

Mr. Childe of Portsmouth said that drawings of the nephrectomy wound should be omitted if possible, because there was a danger of the track becoming infected with tubercle.

Mr. Fenwick in his reply objected to the simultaneous exposure of both kidneys; inspection of the surface was often fallacious, and the functional activity of both organs should be determined before operating.

Transarticular Operation for Fractures Near the Knee and Elbow.—Mr. Sampson Handley of London read a paper on this subject. The operation he proposed was to be reserved for special cases of fracture near or extending into the joint, due precautions being taken against sepsis. He narrated two cases. (1) A boy at 9, with separation of the lower epiphysis of the left femur flexion and a figure-of-eight bandage was tried, but a radiograph showed persisting deformity. Another surgeon advised excision of the joint. The author operated as follows: The fragments were exposed through an anterior U-shaped flap turned upward with the potella and fixed accurately by two screws, one passing through each canople; all the ligamentus structures divided were reunited by sutures; the lateral ligaments were preserved intact. The patient was discharged in 7 weeks and at the end of 3 months the bone and joint were perfect. (2) A boy at 12 with backward displacement of the lower epiphysis of humerus which could not be reduced under anesthesia. A transarticular U-shaped flap, clear of the ulvar nerve, was turned up over the back of the elbow joint, and the olecranon divided at its base; the fragments were easily placed in correct position and no screw was needed to keep them adjusted; the olecranon was sutured with silk, and the soft parts were also sutured. The result was very satisfactory, and it was claimed that the operation averted the alternative of excision.

Mr. H. A. Ballance of Norwich held that separation

of the lower humeral epiphysis is very rare, and that fractures into the elbow joint are less frequent than supracanoplar fracture. In children all fractures of the lower end of humerus require operation, other forms of treatment resulting in an alternation of the "carrying angle." In his opinion the best incision is a vertical one over the back of the joint, and division of the olecranon is quite unnecessary. If the case is dealt with within 48 hours the fragments can be replaced without mechanical supports; beyond that interval one or possibly two screws may be required. He has entirely given up the non-operative treatment of the fractures under consideration.

PROF. RUSHTON PARKER, president of the Section, advocated the treatment of lower humeral fractures by acute flexion of the elbow. The limit should be maintained in that position under the clothes for several weeks, and active movements then persevered with. The result of this treatment is an efficient joint with a good range of mobility, even though the bones are not in a perfectly correct position.

Complete Excision of the Hemorrhoidal Area.—MR. A. DORR of Dundee described the operation he practised and gave the results in 50 cases. The procedure is a bloodless modification of Whitehead's operation, claimed by the author to be less liable to leave insensitive and contracting scar tissue. The sphincter is dilated but not torn, and a cork on a corkscrew inserted just beyond the bluish pile area; below the cork a ring of pink mucous membrane is grasped by six pairs of Kocher's forceps and the cork is then drawn down to the tips of the forceps; the handles are gathered round the corkscrew and several harelip pins inserted; each pin is put in between two of the forceps, entering at the junction of skin and mucous membrane, and passes in front of the sphincter until it pierces the cork behind the ring of pink mucous membrane; a piece of elastic is wound twice round the pins, and the ends held below with forceps; the Kocher's forceps and corkscrew are now removed, the surface of the pile area cleaned and all the mucous membrane dissected off the sphincter between the white border line below the pink margin above, no hemmorrhage taking place at this stage; a continuous button-hole suture of chromic catgut is next inserted all round, thus bringing skin and mucous membrane into exact opposition; the elastic band is now removed and if one or two bleeding points appear they are controlled by mattress sutures put in through the skin till the needle reaches the cork and out again at a point ½ inch away, and ¼ inch behind the primary suture; finally the pins and cork are removed, a gauze roll introduced as a plug for a few hours and morphine given *sub cute*. The author summarized the end-results and said they were superior to those gained by other operations for the cure of hemorrhoid.

Obstruction of the Ureter Due to (1) Kinking Over a Branch of the Renal Artery; (2) Renal Calculus.—MR. R. A. BICKERSTETH of Liverpool read this paper and exhibited specimens and drawings which illustrated the different effects produced in the kidney and its pelvis by the above-stated causes of obstruction.

SECTION ON MEDICINE.

First Day—Wednesday, July 24.

Early Cardiac Complications of Acute Rheumatism.—Dr. DAVID LEES said he had long held rather decided views on the subject, some of which are not generally accepted though they seem to attract attention by those who have good opportunities of submitting them to clinical observation. He began by saying that rheumatism, both acute and subacute, is to be regarded as a microbic infection. It is most frequent and most violent in childhood, diminishing in both respects as growth proceeds, but still remains a grave disease in adult life. He holds that dilatation of the left ventrical is always present, and is doubtless caused by myocarditis and toxemia. One of these may suffice, but both are mostly combined. Perhaps one may depend on the other. The dilatation is a very early symptom, invariably present, and can practically be easily detected on careful percussion properly carried out. It is easy to determine quite accurately the sloping line of dullness at the edge of the left ventricle in the fourth and fifth left interspaces and that of the right auricle in the right fourth interspace. Apart from the ventricular dilatation Dr. Lees seemed to attach little importance to other symptoms. Joint trouble, nodules, endo- and pericarditis, and pleuritis were not constant symptoms, as each or even all might be absent in some cases, but the dilatation was always found. As to treatment, prolonged rest under careful nursing takes the first place. An ice-bag over the precardia (with precautions against chill) was also spoken well of and a few leeches were mentioned as sometimes beneficial. But Dr Lees also believed in active medication, salicylates and alkalies in full doses keeping the bowels regularly open and the urine alkaline. His favorite combination was sodium salicylate 1 part to sodium bicarbonate 2 parts, the dose of this to be regularly increased as long as it is tolerated. If it produces vomiting or other toxic symptoms due to the salicylate it must, of course, be suspended to permit recovery from these effects. After this it should again be given in half the dose at which it had to be stopped and this should be increased as far as possible.

DR. ABRAMS of San Francisco accepted the treatment by salicylates as essential and was of the opinion that ventricular dilatation was as frequent a complication of rheumatism as had been stated. But essential as it is to get the full influence of the salicylate he had come to regard it as possible that the drug itself might be capable of setting up ventricular dilatation. He referred to the importance of the vagus in reference to the cardiac symptoms, for which he held the salicylates were useless. Pilocarpine was valuable in heart failure.

DR. POYNTON could not accept the constancy of ventricular dilatation nor yet the utility of the salicylates. Perhaps the drug might be effectual in some cases, but not in others. Bacterial poisons were soluble and varied with the tissues concerned. Mitral stenosis in recurrent chorea was common and other cases indicated that the cardiac complications of acute rheumatism began with tachycardia.

DR. CAREY COOMBS, from recent experiments on rabbits made in conjunction with Dr. R. Miller and Dr. Kettle, concluded that streptococcal infection was the cause and histological examination showed similar lesions whatever were the organs attacked. They had seen no differences from five different strains of streptococci. The type of reaction was like that of human rheumatism.

DR. FREDERICK LANGMEAD said that out of 2,556 London school children he found rheumatism in 5 to 6 per cent.; it was commonly undetected in a first attack, therefore not treated, and resulted in a crippled heart developing insidiously. Large tonsils required operation four times as often in rheumatic as in normal children, suggesting that those observers were correct who considered them a probable source of infection. He thought a crusade was required against rheumatism.

DR. F. W. PRICE spoke of early diagnosis and preventive measures as the most hopeful fields of study.

DR. WM. HUNTER urged that treatment should be influenced less by the symptoms or clinical course of the disease than by its cause and the source of infection in each case.

(To be continued.)

MEDICAL ASSOCIATION OF THE GREATER CITY OF NEW YORK.

Stated Meeting, Held May 20, 1912.

THE PRESIDENT, DR. REYNOLD WEBB WILCOX, IN THE CHAIR.

X-Ray Measurement of the Permanent Teeth Before Eruption, to Provide for Early Regulation of the Dental Arch.—Dr. SINCLAIR TOUSEY, in this paper, said that in 1906, when his first work in this connection was undertaken, he had shown, at a meeting of the New York Institute of Stomatology, a series of radiographs of the unerupted permanent central incisors, with a promise to complete his report after these teeth had erupted. A certain number of the children had now been traced, and the actual measurements compared with those predicted by the *x*-ray. The practicability of radiographing the teeth of children five or six years of age was shown by his series of cases, now amounting to over thirty, while its desirability was shown by the number of children whose permanent teeth came in crowded and out of alignment or, through malposition, were delayed in eruption. In some instances some of them were altogether missing. Actual measurement of the temporary teeth would give no information as to absence or malposition of the unerupted permanent teeth, and his cases showed that actual measurements of the temporary teeth do not correspond with the actual measurements of the permanent teeth made after their eruption. The most important measurement was the greatest width, in hundredths of an inch, of the unerupted central incisors; the upper ones being of chief consequence. Mathematically exact measurements would require a geometrical calculation, since the unerupted tooth was at a certain distance from the film, and consequently its shadow was slightly enlarged. This calculation showed

that about 1/30 of the width of the shadow of the unerupted tooth should be deducted to obtain the actual width of the tooth in a radiograph made upon a horizontal film according to his present technique. Another detail requiring close attention was in the measurement of the width of the shadow, so as not to include the penumbra. The direction of the tooth casting the shadow was a matter of vital importance, a correct radiographic measurement being possible only when the tooth directly faced the *x*-ray tube. The tooth whose occlusal edge was squarely at a right angle with its long axis in the radiograph was the one to be depended upon for a correct measurement. This was one of the special advantages of his method of casting the shadow of the teeth upon a film placed horizontally in the mouth. The curve of the dental arch was shown, and it was easy to see whether a tooth directly faced the *x*-ray tube and at what angles the others were placed. In some instances the radiograph showed that both unerupted centrals were turned so far to the sides that an exact measurement required another radiograph with the tube sufficiently to one side. This revelation of the sharp angle between the centrals was important, as indicating narrowness of the dental arch. It was his practice to make accurate measurements of the width of each temporary upper and lower central when making the radiographs of the unerupted permanent centrals. Knowing the actual measurement of the temporary teeth, and applying the caliper square to the *x*-ray image of the same teeth, one soon became able to measure the latter accurately. Dr. Tousey had made many hundred radiographs in older children and adults to determine the presence or absence and the position of unerupted teeth which had caused years of uncertainty. This would all be obviated, he said, by an *x*-ray examination at about the age of six years. As to how nearly accurate these measurements were likely to be, in none of his cases did the difference between the radiograph of the unerupted tooth and the actual width of the same tooth measured after eruption, some years later, exceed 1/100 inch, a variation which was well within the accuracy required for practical work in orthodontia. In the majority of instances the radiographic measurement of the unerupted teeth was just the same as the actual measurement of the erupted ones. His series of cases had shown that there is no fixed relation between the width of the temporary teeth and that of the permanent teeth. In speaking of the practical application of the method he said that the upper arch was the one which it seemed most important to determine, and it was practicable to measure the widths of not only the central incisors, but also of laterals and canines. The cases so far examined showed that an arch calculated from the width of the upper central permanent incisor was the correct one for the purpose desired. The curve of the temporary arch, whether right or wrong, was reproduced in the permanent arch. Imperfect development of the teeth was not only a disfigurement, but rendered proper mastication impossible and the proper action of the saliva unlikely. The effects were starchy indigestion and irritation from unmasticated meat, with autointoxication from both. In the young child the nasal passages were lined below, in front, and on both sides by the germs of the teeth, and imperfect development of the teeth and maxillary bones supporting them occasioned mal-development in the bony walls of the nasal passages and the accessory pneumatic sinuses of the face; while the effect of the under-development might even extend to the cranial cavity and the brain. Deviation of the septum and mouth-breathing unrelieved by the removal of adenoids and tonsils were among the results of mal-development of the teeth. The object of his most recent work had been to determine beforehand the presence and position, and especially the size of the permanent teeth before the loss of the temporary teeth. The latter might be quickly and easily trained to a curve of the proper radius, and would then guide the permanent teeth into proper position. This work showed the size which the permanent teeth would have and the radius of the curve required to accommodate them.

The paper was illustrated with lantern slides showing radiographs and tables of cases.

Wheat Bran in Constipation.—Dr. A. Ernest Gallant, after describing the structure of the wheat grain, said that in the process of converting wheat into flour it was ground on five or six different rolls and passed through sieves until the bran was eliminated. The purposes which bread or any other food served when taken into the body had sometimes been compared to the use of fuel in a steam engine, but while food was the fuel which furnished the energy for all the body activities, as coal supplied the heat to make the steam to drive the engine, it did much more than this: also building the body engine and keeping it in repair. The comparatively small amount of digestible protein and available energy in the feces from bread made with patent flour (that commonly in use), as compared with the entire wheat and graham flour, was no doubt due to the fact that the patent flour was much more finely ground. Experiments on animals had shown that fineness of division of the particles had a material influence upon the digestibility of a food. While it was sometimes claimed that raw foods possessed special virtues because some vital principle or life force in them had not been destroyed by cooking, this was not supported by experimental evidence; nor did physiological chemistry offer any data warranting such a view. On the other hand, there was no reason to suppose that uncooked cereal foods were unwholesome if clean and free from bacteria, while they were commonly said to be especially useful in counteracting constipation, on account of the large amount of indigestible crude fiber which they supplied. When compared with patent flour, bran showed .56 per cent. less water, 0.82 per cent. less carbohydrate, 2.03 per cent. more protein, 2.78 per cent. more fat, and over sixteen times as much ash, composed chiefly of potassium phosphate, calcium and magnesium chlorides, and phytinic acid compounds. The digestibility and nutritive value of the iron compounds met with in the outer layers of the grains probably depended largely upon the fineness of the grinding employed. Experiments made by Bunge upon rats indicated that the iron of bran was assimilated by the body and promoted the formation of hemoglobin. The laxative properties of bran had long been recognized in the very general use of bran mash to correct a tendency to constipation in farm animals, and some recent experiments at the New York Experiment Station indicated that this laxative action was due to a soluble phosphorus compound known as phytin, which occurred in considerable amounts in bran. Such action was the more readily understood when it was remembered that the channel of secretion of phosphorus, calcium and magnesium especially, and a part of the potassium supplied in bran, was by way of the intestine. While no one who had fed animals their weekly or semi-weekly bran mash would question the laxative properties of this, Dr. Gallant said he was thoroughly convinced that for the relief of habitual constipation it must be taken daily in relatively small doses, and that when so used one must depend upon the coarse, unground bran, the bulk of which added very materially to the amount of feces. Thus it excited more vigorous and efficient peristalsis and promoted a regular daily evacuation of the bowel. This would take place only by close, habitual and prompt response to the earliest inclination, for if such were neglected the contents of the rectum would rapidly become firm and compact, and more or less difficulty would be experienced before it could be emptied. Therefore, to secure the good effects of habitual daily use of bran it was necessary to give close attention to the habitual daily stool. Coarse raw bran, being composed chiefly of indigestible, non-absorbable cellulose, took up a large amount of water, swelled, and added very materially to the débris and bulk in the intestine, and the active peristalsis excited by this means rapidly moved the fecal column downward and outward; thereby overcoming fecal stasis and preventing putrefaction and resorption with its deadly toxemia. When bran was ingested as a part of the daily regimen of a constipated individual the daily stool was made up of a soft, well-formed, bulky column of feces with a notable absence of the former foul-smelling effluvia. As time went on the "liver-spotted" skin cleared up, dandruff of indigestion disappeared, the anemia present rapidly improved, the cutaneous surface lost its dryness and became soft and of a healthier hue, and in some instances acne vulgaris passed away. In the experience of the speaker, the best results had been obtained by the use of coarse, unground raw bran, either stirred in a glassful of cold water and quickly gulped down, or mixed with cooked cereal and eaten with milk and cream. Many, however, preferred to take it stirred in soup, broth or gruel, while children liked it mixed with jelly, jam, marmalade, honey, or syrup and spread on bread or toast. Bran in the form of graham bread, biscuits, pudding, soup, etc., if taken daily and in large amount, was without doubt beneficial, especially from a nutritional standpoint; but, owing to its fineness in the grinding, it did not produce such bulky stools, and so lost much of its value in habitual constipation. The dose of raw bran for the average patient was one or two heaping tablespoonfuls daily, but more than this quantity was required in some instances. Sometimes it might be necessary to continue the usual cascara or other medicinal laxative for a few days, but as soon as the habitual stool was established it should be

stopped. Bran taken at bed-time would induce an inclination to defecate shortly after rising in the morning. Among the several hundred patients to whom he had taught the bran habit there had been many who suffered from such conditions as chronic diarrhea, diarrhea alternating with constipation, mucous colitis, enema constipation, and constipation due to castor oil, saline waters, and other agents whose secondary effect was astringent.

Dr. ANTHONY BASSLER said he was in entire accord with Dr. Gallant as to the practical utility of bran. There could be no doubt of its great value in habitual constipation, both on account of its mechanical and its pharmacological action. There were, however, a certain proportion of cases in which, although there was no anatomical condition causing obstruction, bran failed altogether. In instances of this kind we might give the patient large amounts of bran and agar daily, besides prescribing prunes, water, exercise, etc., and while the bowels might perhaps act well for a few days, they would then shut down, and it would be found necessary to supplement this hygienic treatment with cascara or other similar agent. Still, in the great majority of cases bran acted in an entirely satisfactory manner, and it was much to be regretted that it was prescribed to so small an extent by the medical profession. The principal reason for this, it seemed to him, was because bran was so cheap. It was particularly useful for children, in whom its good effect was even more noticeable than in adults.

The president, Dr. WILCOX, referred to a case bearing on the alleged special value of uncooked food. Some time since, he said, he was called as an expert on behalf of the Government in the trial of a suit involving the merits of a certain advertised food which was claimed to be curative of all sorts of diseases. The claim for the wonderful activity of this preparation was based on the asserted fact that the grain composing it was still alive: so that a person using it received all the benefit to be derived from living matter. The jury, however, decided that its alleged virtues were a pure fabrication, and the proprietor was fined by the court. The paper, he said, was one of great practical value, and he agreed with Dr. Bassler that bran was not much used from the very fact that it was so accessible and cheap.

Dr. GALLANT said it was mainly the bulk of the stools resulting from bran which did the work in chronic constipation. Patients often got used to laxative drugs, so that these lost their effect, and he had found bran successful in cases where every other means had failed. He was convinced that the autointoxication which was so common was due to the accumulation of feces in the bowel, as this permitted the constant resorption of toxic matters. What was needed to prevent this was something to excite active peristalis and keep the fecal column moving, and bran was a most serviceable agent for the purpose.

The Tissue Density Factor in Physiology and Pathology.—Dr. HOMER WAKEFIELD, in this paper, said that his researches on this subject had been begun in 1893, when he published an article on the pathology of catabolism in relation to the etiology of cancer and allied states. In the past eleven years he had published a total of twenty-three monographs, most of which had presented some aspect of the subject, and he now had three volumes well advanced which would eventually elaborate it in detail. Since the appearance of his first article on cancer he had made repeated and strenuous efforts, though with only partial success, to obtain from histologists a recognition of the low organization and density tissue cell as a product of restricted metabolic factors, and not necessarily as a rudimentary form of life, a young cell, or a component of embryonic tissue, as Cohnheim had taught. Although Cohnheim had observed more facts bearing upon the question at issue than anyone else up to his time, he could see only this explanation, and it appeared paradoxical that he did not arrive at a different conclusion after experimentally producing at will in rabbits's ears, by ligating the supplying arteries, a complete loss of tissue organization, attended with confluence, hemorrhagic extravasation, increased fluidity in stagnant blood, and profound alteration in the blood where the stasis occurred. The logical deduction, from which there was no escape, that metabolic equilibrium is a balanced action between an incessant oxidative synthesis on the one hand and a destructive action of functional exercise on the other, implied a possible disequilibrium of metabolism when the opposing processes were not equal. Furthermore, certain factors, necessary to both, might retard or inhibit both, without destroying the metabolic equilibrium in that regard, yet upset it secondarily. Oxidation was such a factor, one which was both anabolic and catabolic. In ultra-degenerative processes we had the increased cell division balanced by a decreased one, with protoplasmic synthesis almost nil on the anabolic side and oxidative combustion and autolytic catalysis as nearly so on the other side. Therefore in cancerous stages of degeneration we found that any existing hyperplasia was accounted for quite exclusively by cataloblic stasis; which also accounted for the fact that the growing edge, so-called, of malignant growths consisted of an admixture of normal with degenerate cells which were above the meridian, but became progressively decadent as they approached nearer to the central zone of putrefaction. As to the biological status of tissues of low density and organization, further observation seemed to substantiate his old postulate that protoplasmic and cellular integration, organization and integrity, including density and the degree of cell complexity and differentiation, are at all times in exact ratio to the status of supply of the factors of anabolism, plus or minus the existing status of catabolism. The low density and organization status was typical, not only of the most rudimentary forms of animal life, but also of the early life-span of each individual in the higher animal life forms. Thus, cells and tissues exhibiting such a status, wherever found, had been denominated embryonic or young cells and embryonic tissues, or those reverted to embryonic or rudimentary type. The jelly of Wharton of the umbilical cord was recognized by common consent as the most characteristic of the embryonic tissues. It had long been known that, within normal limits, the more rudimentary animals were in the zoological scale, the younger the organism, and the less dense the living substance, the more rapid the growth; assimilation, synthesis, and mitosis being in equilibrium. All young animal flesh was noted for its high proportion of nucleonic elements and derivatives, and all soft, rapid-growing tumors were characterized by loss of cytoplasm, leaving a disproportionately large content of nucleonic elements. The former was the consequence of progressive, the latter of retrogressive, processes. It had also been pointed out that cell growth occurs in inverse ratio to the differentiation and complexity of the cell, or, conversely, that it grows and multiplies freely when young, while growth is retarded correspondingly to the progress of age. Next to age the relation of use and disuse of the animal tissues was one of the most important factors of tissue density and differentiation. Physiological exercise developed density and integration, while disuse brought softening and disintegration (atrophy). Any comprehensive concept of living substance must be from the viewpoint of a constantly dependent product of an incessant process of integration and disintegration, of organization and disorganization, and of differentiation and confluence; the tissue integrity at any unit of time being dependent upon the existing ratio of the two opposing forces. From this vantage ground we could view its status as an expression of the mean of the balanced action of the composing and decomposing factors. All biologists concurred in the opinion that the living organism is dependent upon the favorable or unfavorable status of environment and its successful or unsuccessful adaptation thereto. The speaker held that, in large measure, the material expression of adaptation to environment, of acquirement of immunity and the attainment and hereditary transmission of acquired characters, was one of the variations of integration and disintegration. The fall in general body oxidation, as evidenced by the temperature depression directly following birth, incident to the adaptation of the body to the new environmental temperature, was attended with metabolic retardation and decrease of assimilation and synthesis in proportion as the superficial capillary blood was determined to the great venous trunks. Thus we had the familiar cyanosis, relative polycythemia, icterus, edemas, hemorrhagicas, tetanus infections, sclerema and fatty degeneration of the newly born as a hyperesthetic reaction. The observed exaggerated reaction to cold of the peripheral tissues of infants of premature birth simply illustrated the relationship of tissue density to reaction phenomena. He dwelt for some time on the importance of the density factor of tissue structure throughout the body, and went on to say that the problem of susceptibility to infection was closely related to the density of tissue in all respects, as to invasion, favorable soil, vital resistance, reaction weakness, impaired oxidation, autolytic powers, and all the other factors going to make up the prophylactic capacity of high tissue integrity. The vulnerability of rarefied tissue to inflammatory phenomena had been shown, and especially in the higher and more violent forms of inflammation, such as diphtheria and erysipelas, were the affected and vulnerable tissues observed to be rarefied. Our attention was now directed to the interesting researches of Wassermann, who was apparently putting to practical application two previous postulates of his (Dr. Wakefield's), namely, the predisposition of rarefied tissues to

deposits of solid particles and the relation of catalytic properties to oxidation. All the fluorescent dyes undoubtedly acted as activators or accelerators of oxidation, and should be expected to be specific in those cases only where catalysis was the remiss factor. The selective determination to and action upon the diseased tissues by these dyes must depend upon the difference of surface tension and osmotic pressure. Another example of the exhibition of tissue impregnation by virtue of its loss of surface tension and osmotic pressure, incident to rarefaction, was fatty infiltration. The so-called coarseness of the integument of ultra fat individuals was due to cutaneous expansion. Having stated that contraction and expansion (extension) were expressions of the most fundamental property of irritability of living substance, he spoke of the basis of vasomotor compression by condensation, the density factor of tissue reaction, and the biological series; the latter being the name he had given to the reaction curve common to all forms of animal life and to sensitive plants. He had, he said, made a double application of the scale of reaction phenomena: first, as representative of the series of reactions incident to the tissue status of the several stage-phases exhibited, and, second, of the contraction curve of any contractile tissue which progressed to a point of maximum contraction and thence declined to a state of exhaustion-relaxation, when continued to that degree. As to the physical basis of pain, rarity of tissue and its corresponding hyperesthesia predisposed it to painful phenomena, and this fact called for the removal of pain from the domain of metaphysics and psychology to that of living substance reactions. Pain, it was observed, was caused by that which produced contraction, and its acuity depended upon the intensity of contraction and amount of tissue involved in a single contraction. To any unit of stimulation the pain involved, as the reaction expression, was inversely as the dimensions of the muscle, and thus the small muscles of the face gave rise to the most acute pain. In general, as a therapeutic measure, hyperesthetic rarities of tissues should be recondensed, and not merely relaxed. Even during painful contraction, a condensing agent, such as ergot, would produce relaxation by condensation. Pain was at its height when the phase of contraction was also at its height. The phase could be changed in either direction, either by restoring normal conditions of rest or by continuing on to exhaustion-relaxation. The latter method was the one now in vogue; we poisoned the patient so that the painful contraction might be relaxed. Painful states which were palliated by narcotics not infrequently recurred, as the recession of excursion in the biological series took place. Often the pain was manifest only on the recession, as shown in thawing after freezing of parts of the body. In speaking of the physical basis of hyperesthesia he said that in the orderly consecutive series of reaction events which he had termed the biological series, beginning at the normal point, which he called zero, the living tissues being at rest, we found: If a part be mildly stimulated by any one of the five forms of physical energy—chemical, thermal, photic, electrical, or mechanical—and after a short interval again stimulated, the second stimulation (of no greater degree than the first, which excited no reaction whatever) will excite a response that is both precocious and exaggerated-violent. In the course of a stimulation beginning at zero and gradually rising in intensity it was observed that not until a certain degree was attained was a contraction reaction elicited, and this point was termed by biologists the threshold of stimulation. When the single stimulation antecedent to that of the exaggerated response was intervaled to the succeeding one, we found that the threshold of stimulation had been attained, *i.e.* the succeeding one was promptly responded to. If a small animal were injected with a foreign serum, so small in quantity and so little toxic as to elicit no reaction, and, after a period of absorption and insensible reaction, were reinjected with the same amount of the same serum, the second reaction might be so violent as to prove fatal. In the terms of this type of research, the initial injection sensitized the animal, and the second produced anaphylaxis. If, instead of allowing an interval, consecutive injections were substituted, the violent reaction would be absent, and an ultimate state of lost reactibility arrived at. This was termed immunity or prophylaxis. In general physiology the status attained by the antecedent stimulus was termed hyperesthesia, while in serology the production of complete adaptation to a heterologous agent would be regarded as an immunity from later reaction. Hyperesthesia, however, was a relative condition, and was governed in its intensity by the reaction vitality and reaction velocity of the reacting tissues: which, in turn, were exhibited in inverse ratio to the density of the tissue. As to the time equation of tissue reaction in relation to density, the reaction time of the mental phenomena of physiological psychology and that of tissue reaction, as related to mental function, should be sharply distinguished. Paradoxically, it was an observed fact that the speed of conception commonthly decreased in inverse ratio to the increase in velocity of tissue reaction to sensorial impressions; which thus further widened the gap between precocious reaction and delayed deliberation upon it. In other words, with exaltation of the sensibilities, the individual became more obtuse in the higher faculties of discernment, discrimination, and discretion. A fundamental law, which had stood every test for many years, might be expressed thus: The acuity, velocity, and energy expenditure of vital reaction of living tissues are in inverse ratio to the density of the same. By the aid of this law the kaleidoscope of normal and morbid mental and nervous phenomena was brought within the grasp of comprehension, without the aid of supernatural agencies. The reaction times of greatest scientific importance were those of the general or somatic organism. Tissue density varied not only with age, but also with sex; woman representing a typical mental character commensurate with her lower tissue density. The hyperesthetic individual exhibited hypersensitiveness, hyperexcitability and hyperirritability primarily, and hyperimpressionability and hypersuggestionability secondarily—all due to precocious, over-swift, and exaggerated tissue reaction. The precocity of reaction to sensorial impressions was such as to disturb the time relation of the balanced action of intellection, involving a predominance of reflex, recoil, or impulsive, as contrasted with deliberative, reaction expression. The more an individual acted on impulse, the less were his acts balanced by his previous experience and knowledge. Persons acting on impulse, when uninfluenced by others, were whimsical, capricious, fanciful, and erratic. They were the constant prey of human vultures and parasites, and were prone to fanaticism and absorbing infatuations, especially the mysterious and religious. All hyperesthetics were relatively weak, though they differed in nutrition in exhibited strength. All striped muscles were extended in equilibrium length, and smooth muscles and supporting ligaments sagged according to their loss of density, which implied expansion and extension. That the mental function had long been regarded as a balanced action was attested by the common reference to well-balanced and unbalanced minds, but Dr. Wakefield said he did not know of any definite efforts to study the nature of the unbalancing. His own insight into this subject had been born of observation of the inequalities exhibited by hyperesthetic individuals. The correlation existing between the direct reaction to sensorial impressions and the deliberative-conscious reaction to the same, as regards cooperation, relative velocity, reactions, etc., were found to be of great importance. Hyperesthesia was expressed by exaggerations of the most commonplace acts of every-day life, and physiological activities were exaggerated into pathological ones. Thus, for instance, the sexual instinct might be exaggerated into erethisms, satyriases and nymphomanias. So long as the tissues continued in a rarefied, relaxed state, mentality was distorted, and the hyperesthetic was unethical for the reason that he did not deliberate upon the rights, feelings, and needs of others, as well as on account of his instinct of self-protection. In concluding, he said that when the pathogenesis and pathology of any derangement was thoroughly understood, the therapeutics was much simplified and the prophylaxis clearly indicated. Knowing that the greatest tissue density comes from the highest degree of the process of integration, that the latter in turn depends upon oxidation synthesis, and this upon oxygenation, normal alkalinity, and catalytic activation of the chemical processes, and all their subdivisions, the physician would find his hands very full in spanning the ever-widening field of prevention and treatment. For example, oxygenation would include nasal, laryngeal, and pulmonary respiration, and cardiac, vascular, and hemic factors of circulation and oxygen-carrying capacity of the blood and hyperesthetic reaction-exsanguination of the capillaries would present both local and general significance as vascular factors. The many sources of acid factors and subalkalescence would have to be taken into consideration. The part played by the catalytic elements of the thyroid and thymus glands, as well as general glandular catalytic activities, required attention, and where the secretions of the glands were deficient, these should be artificially supplied as a correction. The direct action of the secretion of the suprarenal glands in the attainment and regulation of tissue density also demanded a hearing. Not only did the factors of the body requiring possible attention

confront the physician, but, in addition, habits of life not infrequently had to be materially changed. Ill-ventilated super-heated indoor atmospheres had to be replaced by fresh, cold outside air, hot baths by cold ones, rest cures by work cures, and coddling by discipline; while sedentary habits had to be exchanged for physical training, muscle development, and general tissue hardening. Frequently physical and mental capacity had to be partially restored to make possible the cooperative participation of the patient. This was to be attained by artificial tissue condensation, and could probably be most promptly accomplished by hypodermatic injections of ergot according to Livingston's method. The so-called cumulative effects of progressively increasing doses of such drugs as nux vomica and strychnine, thus obviating their contraction-producing action, Dr. Wakefield regarded as tissue-condensing in their ultimate results. One of the exaggerated reactions, fear, which as an emotion was harmful, had of late been exploited as a universal cause of the woes of the neuroses and psychoses, not only by the several faith-healing cults, but by some medical writers who should have been better informed. When all was traced to the fear root, a purely mental form of treatment appeared to be the only logical one.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON PEDIATRICS.

Stated Meeting, Held May 9, 1912.

DR. WILLIAM SHANNON IN THE CHAIR.

Osteogenesis Imperfecta: Report of a Case with the Study of Its Metabolism.—Drs. HERMAN SCHWARZ and MURRAY H. BASS presented this paper. They stated that the condition known as osteogenesis imperfecta did not enter into the symptom complex known as fetal rickets. Attention had been called to cases characterized by fragility of the bones by Lobstein in 1833, and he gave the condition the name of osteopsathryosis, and showed that there was a group which was termed idiopathic for which there was no definite etiological factor. A further study of osteopsathyrosis and osteogenesis imperfecta, both clinical and pathological, showed that these were identical conditions. The greatest number of cases occurred during intrauterine life and were still-born. A few, however, survived and presented definite clinical characteristics. One group of these cases appeared to be normal at birth, but later on in childhood suddenly developed a tendency to multiple fractures from very little violence. Many authors were of the opinion that these cases were congenital, but that the process had lain dormant. Heredity seemed to be the only important etiological factor. In one instance it had been noticed that the disease was present in one of twins, the other child being normal, and this would tend to show that the actual condition of the mother was not at fault and that the disease was a fetal one. Macroscopically the bones showed fractures, the breaks being very numerous in some instances. The bones might be soft and pliable or very brittle and they might be either normal in length or short and plump, scarcely narrower in the middle than at the ends. The cortex of the bone was extremely thin. The bones of the skull were characteristic in that they were almost entirely devoid of calcification. The base of the skull was usually ossified, but was thin and friable. The ribs also were ossified, but showed irregularly distributed nodules representing previous fractures. Microscopically the region between the epiphysis and diaphysis of the long bones showed normal relations in respect to the proliferation of the cartilage, the form, structure, and arrangement of the cells. Endochondral ossification *per se* proceeded normally, but was markedly reduced in amount. In the diaphysis one met with numerous thin cartilage remnants, but with very few bone trabeculæ. Periosteal ossification was entirely absent in certain places; in others it was slight. The periosteum was thin and the number of osteoblasts everywhere diminished; in the long bones the marrow was markedly increased. The children who survived with this condition were small, underweight, had long silky hair, open fontanelles and sutures, small faces, soft delicate skin, protuberant abdomen without any evidence of umbilical hernia, and diastasis recti. The extremities showed all sorts of deformities due to fractures, bending, marked shortening, and curvature being the rule. The fractures seemed to cause very little pain and union took place rapidly. The *x*-ray appearance of the bones showed large medullary cavities with very thin atrophic cortex; epiphyseal lines showing up very sharply. The prognosis of the disease was bad. It was better in cases occurring late in childhood, and some cases seemed to undergo spontaneous cure. The case reported was that of an infant seven months of age, whose family history was negative as to syphilis, tuberculosis, or any bone disease similar to this one. When the child was four days old the physician found a fracture of the thigh, but the mother knew of no other fractures. Except for underdevelopment and deformities, the child seemed normal. The head was abnormally large in comparison with the trunk and the extremities were small, shortened, curved, and angulated. The sagittal suture was wide open. There was distinct exophthalmos. The nostrils were fine and delicate, the mouth small, lips thin, tongue slightly protruding, and the hair long and silky. The clavicles showed angular deformity. Lymph nodes the size of a pea were just palpable in the axilla and groin. The urine was clear, amber, acid, and showed no albumin or sugar. The blood showed hemoglobin, 60 per cent.; red blood cells, 4,512; white blood cells, 11,600; differential polynuclear leucocytes, 15½ per cent.; large mononuclears, 17 per cent.; small leucocytes, 64 per cent.; eosinophiles, ½ per cent. The Noguchi modification of the Wassermann reaction was negative. The child was placed in the Hoobler metabolism bed for six days and was fed on mixed human milk. The weight of the child at the beginning of the experiment was 4300 grams. During the six days the child took 3390 c.c. of milk, appeared to be in normal health, and the tables showed that nitrogen metabolism was normal. The excretion of creatinin nitrogen by the kidneys was low as compared to the findings of Amberg and Morril. The fat absorption and retention were perfectly normal. The calcium metabolism was of particular interest in the light of the disturbance in the ossification of the bones. The child, according to the tables, was retaining calcium to the extent of 45.7 per cent. of the intake. The truest view as to the calcium retention was obtained when the retention was based, not on the per cent. of intake, but on the absolute amount retained. A comparison of this baby with others showed that a retention of 109 mgs. did not appear to be very low, the average retention being from 210 to 120 mgs. The positive calcium balance in this case might be construed in different ways. The disease might be considered at an end as there had been no fractures since birth, and the calcium metabolism might be looked at as that of a normal child. But the cranial bones were still soft. The disease might be in the stage of repair, and this seemed likely since there had been no fractures since birth. But, again, if the body was trying to replace lost calcium, there should have been a decidedly greater retention of calcium than was present in the normal child. This was not the case. When one considered how complicated the whole calcium metabolism was, such a case as the one under discussion led one to speculate as to whether there was a distinct relationship between calcium retention and skeletal ossification. The retention of magnesium was 51 per cent., which showed very little variation from the other cases in which it had been determined by Blauberg. The phosphorus metabolism was practically normal, while both sodium and potassium were positive, but it was impossible to discuss their significance in view of the small number of existing analyses in normal infants. For the same reason the sulphur balance could not be adequately discussed.

Scleroderma in an Infant.—Dr. ROGER H. DENNETT reported this case. The history of the child showed that she was born on October 8, 1911, and weighed six pounds at birth. She was the first child of healthy parents, and, so far as could be ascertained, was perfectly normal at birth. When three days old she became very ill and her life was despaired of. In the course of a week the physician said to the mother that it would be just as well if she did not live as she was not a normal child; all her joints were stiff. She recovered, however, and gained in weight. At the end of two months she still had rigidity all over the body and thickening of the skin and subcutaneous tissues. A physician who saw her at that time made a diagnosis of arthritis due to syphilis. The *x*-ray plates taken showed lack of ossification in the carpal and tarsal bones. The child was put on mercurial inunctions for about a month and did badly. This was of interest in view of the statement made by some authorities that scleroderma was aggravated by mercury. Dr Dennett had first seen the child when she was three months of age. She then weighed seven pounds and twelve ounces and seemed normal mentally. The skin over her entire body, with a few exceptions, was yellow, waxy in appearance, perfectly smooth, soft, moist, thickened, and indurated, not pitting on pressure. The fontanelle was normal in size and the head well-shaped with no thickening about the scalp. The arms were normal, the hands having a small amount of thickening on the dorsal aspect, and the fingers were held

flexed like congenital club hand. The legs were held in the flexed position and could not be extended, even with a great deal of force. The medicinal treatment was stopped and more frequent nursings given. The vomiting was controlled to a certain extent by paregoric. Very energetic massage was given to prevent ankylosis. The subsequent history of the case was not of great moment. Three weeks ago the administration of thyroid extract was begun; this was only because no treatment had as yet been satisfactory and because the induration seemed to resemble that of thyroid deficiency to some extent. This was not a common condition in infancy, the youngest case on record as far as the author could ascertain being that of a child thirteen months of age. The disease was apt to run a shorter course in children, and therefore the prognosis was better. This condition should not be confused with sclerema, the latter running a subnormal temperature and the indurated areas being of a bluish color, cold and clammy to the touch.

Books Received.

The MEDICAL RECORD *is pleased to receive all new publications which may be sent to it, and an acknowledgment will promptly be made of their receipt under this heading, but it must be with the distinct understanding that it is under no obligation to notice or review any publication received by it which in the judgment of its editor will not be of interest to its readers.*

GRUNDRISS DER BIOCHEMIE. By Prof. CARL OPPENHEIMER. 300 pages; illustrated; cloth; price 9 M. Georg Thieme, Publisher, Leipzig.

REPORT OF THE COMMISSIONER OF EDUCATION FOR THE YEAR ENDED JUNE 30, 1911. Vol. I. 675 pages; cloth. Published by The United States Bureau of Education Washington.

GEWURZE BEI NEPHRITIS. By Priv.-Doz. Dr. A. KAKOWSKI. 22 pages; paper. Georg Thieme, Publisher, Leipzig.

DYSENTERY IN FIJI DURING THE YEAR 1910. By P. H. BAHR, M.A., M.B. 77 pages; illustrated; paper; price six shillings net. Witherby & Co., Publishers, London.

KRANKHEIT UND SOZIALE LAGE. By Prof. Dr. MOSSE and Dr. G. TUGENDREICH. No. 1. 232 pages; paper; price 6 M. J. F. Lehmanns, Publisher, Monchen.

CAISSON SICKNESS AND THE PHYSIOLOGY OF WORK IN COMPRESSED AIR. By LEONARD HILL, M.B., F.R.S. 255 pages; illustrated; cloth; price $3.00 net. Longmans, Green & Company, Publishers, New York.

CLINICAL DISORDERS OF THE HEART BEAT. By THOMAS LEWIS, M.D., D.Sc., M.R.C.P. 104 pages; cloth. Shaw & Sons, Publishers, London.

THE LIFE AND WORK OF WILLIAM PRYOR LETCHWORTH. By J. N. LARNED. 472 pages; illustrated; cloth; price $2.00 net. Houghton Mifflin Company, Publishers, Boston.

INSTEAD OF "WILD OATS." By WINFIELD SCOTT HALL. 62 pages cloth; price $0.25 net. Fleming H. Revell Company, Publishers, New York.

WHEN A BOY BECOMES A MAN. By H. BISSEKER, M.A. 46 pages; cloth; price $0.25 net. Fleming H. Revell Company, Publishers, New York.

HOW SHALL I TELL MY CHILD? By Mrs. WOODALLEN CHAPMAN. 62 pages; cloth; price $0.25 net. Fleming H. Revell Company, Publishers, New York.

DIE HEILBARKEIT NERVÖZER UNFALLSFOLGEN. By Dr. LEOP. LAQUER. 126 pages; illustrated; paper; price 3,50 M. Carl Marhold, Publisher, Halle.

TWENTY-FIFTH ANNUAL REPORT OF THE STATE BOARD OF HEALTH OF THE STATE OF OHIO. FOR THE YEAR ENDING DECEMBER 31, 1910. 410 pages; paper.

SOME RECENTLY DISCOVERED LETTERS OF WILLIAM HARVEY. By S. WEIR MITCHELL, M.D., LL.D., F.R.S. 59 pages; paper. The College of Physicians, Publishers, Philadelphia.

DIÄT-THERAPIE BEI HERZKRANKHEITEN. By Prof. Dr. AUG. HOFFMAN. 52 pages; paper. Vol. III. No. 8, price 1.40 M. Carl Marhold, Publishers, Halle.

DIE RÖNTGENDIAGNOSTIK DER MAGENKRANKHEITEN. By Dr. M. FAULHABER. Vol. IV. No. 1. 72 pages; illustrated; paper; price 2.00 M. Carl Marhold, Publisher, Halle.

EINFÜHRUNG IN DIE LEHRE VON DER BEKÄMPFUNG DER INFEKTIONSKRANKHEITEN. By E. V. BEHRING. 500 pages; paper; price 15 M. August Hirschwald, Publisher, Berlin.

HANDBUCH DER SPEZIELLEN CHIRURGIE DES OHRES UND DER OBEREN LUFTWEGE. By Dr. L. KATZ, Dr. H. PREYSING and Dr. F. BLUMENFELD. Vol. I. Second Half. Nos. 4 and 5. 111 pages; illustrated; paper; price 8.50 M. Curt Kabitzsch, Publisher, Würzburg.

State Medical Licensing Boards.

STATE BOARD EXAMINATION QUESTIONS.

INDIANA STATE BOARD OF MEDICAL REGISTRATION AND EXAMINATION.

July, 1911.

(*Concluded from page 227.*)

OBSTETRICS.

1. Give the physiology of impregnation.
2. Describe the development of the fertilized ovum.
3. What is meconium, and what are its diagnostic relations?
4. Describe the human uterus and give its anatomical relations.
5. Describe the vitellus, allantois, and the amnion.
6. How soon after confinement should a woman menstruate?
7. State some of the causes of sterility.
8. What conditions have a bearing on the time of life in the female when menstruation first occurs?
9. Are maternal impressions transmitted to the child in utero to such an extent as to produce marks, defects, and abnormalities?
10. Describe Credé's method of prophylaxis for ophthalmia neonatorum.

GYNECOLOGY.

1. Differentiate cystocele from (*a*) an anterior vaginal hernia, (*b*) a tumor situated in the vaginal wall.
2. Define prolapsus of the uterus and give differential diagnosis and treatment.
3. Define: (*a*) menorrhagia, (*b*) amenorrhea, (*c*) dysmenorrhea.
4. Give differential diagnosis and treatment of gonorrheal vaginitis.
5. Give technique for complete abdominal hysterectomy.
6. How would you distinguish shock from secondary hemorrhage?

SURGERY.

1. Define odontoma. Give varieties and origin of each variety.
2. Give symptoms and signs of cervical rib and how does cervical rib give symptoms and signs?
3. What is meant by coxa vara? What causes it?
4. Name the chief forms of spina bifida.
5. What is meant by Charcot's disease of a joint? What are its chief diagnostic features other than the general signs of tabes?
6. In middle meningeal hemorrhage, what extracranial treatment do you know of and what is its value? What caution is to be exercised, and why?
7. Describe operation for epithelioma of lower lip.
8. Name a few of the most important diagnostic points in ulcer of the duodenum and explain. Give physiological reasons.
9. What are the contraindications to surgery in gallstone in the common duct, and why?
10. What is a ranula?

PEDIATRICS.

1. Give symptoms and modern treatment for poliomyelitis.
2. Give cause and proper treatment of acute dysentery.

OPHTHALMOLOGY AND OTOLOGY.

1. Give causes, diagnosis, and treatment of chronic glaucoma.
2. Give causes, symptoms, and treatment of phlyctennular keratitis.
3. Give the origin of the acoustic nerve and its distribution in the labyrinth.

MEDICAL JURISPRUDENCE.

1. State fully what are the legal obligations of a physician or surgeon to his patient and what is his liability for malpractice.
2. State your ideas as to the conduct of a physician on a witness stand, including the manner of giving his evidence and the nature of it; also state conditions under which you would voluntarily testify as an expert witness.

RHINOLOGY AND LARYNGOLOGY.

1. Name seven diagnostic points of chronic hyperplastic ethmoiditis.
2. Name four contraindications to surgical treatment of the tonsils.

NEUROLOGY.

1. Give the six most important symptoms of tabes dorsalis.

2. Give the most significant symptoms of paralysis agitans.

3. How is migraine distinguished from other forms of headache?

ANSWERS TO STATE BOARD EXAMINATION QUESTIONS.

INDIANA STATE BOARD OF MEDICAL REGISTRATION AND EXAMINATION.

July, 1911.

(*Concluded from page 230.*)

PRACTICE.

5. *Average duration of the febrile stage*, in *typhoid fever*, is about three or four weeks; of *scarlet fever*, is about five or six days; of *measles*, is about five days; of *rheumatic fever*, is about one or two weeks; of *pneumonia*, is about nine or ten days.

6. Lightning pains, loss of knee-jerk, Argyll-Robertson pupil, optic atrophy and ptosis, gastric and other crises, ataxia, incoordination, and Romberg's sign.

7. *Hysteria*. The following summary of diagnosis is given by Anders and Boston: "A peculiar mental and physical condition, characterized by suggestibility of symptoms which may be of any character. The patient is usually a young adult who is emotional, irritable, and one who constantly complains and thinks of herself, and perverts everything which may occur as having something to do with her own condition. There may be headache, backache, pains in various portions of the limbs, numbness or pin-and-needle-like sensations, hemianesthesia or anesthesia anywhere, points of tenderness in the back, ovarian and mammary region, increases of reflexes, paralyses of various sorts, contractures, tremors, disturbance of vision, smell, and taste, and convulsive attacks which may assume almost any character. The most important point of all is the suggestibility of all the symptoms, their variance from day to day, and the fact that any or all may be removed by persuasion."

8. The early manifestations of pulmonary tuberculosis are: (1) *Physical signs*: Deficient chest expansion, the phthisical chest, slight dullness or impaired resonance over one apex, fine moist râles at end of inspiration, expiration prolonged or high pitched, breathing interrupted. (2) *Symptoms:* General weakness, lassitude, dyspnea on exertion, pallor, anorexia, loss of weight, slight fever, and night sweats, hemoptysis.

The treatment consists of: Plenty of fresh air, sunshine, and sunlight, pure water, good food, exercise in moderation, and proper hygiene in general.

9. Scarlet fever, measles, and typhus fever.

10. Tonsillitis.

OBSTETRICS.

1. Impregnation is the result of the meeting of a live and healthy spermatozoon, with a live and healthy ovum, in a suitable medium (generally the Fallopian tube). During coitus the seminal fluid is ejected into the upper part of the vagina and against the cervix of the uterus; the spermatazoa enter the uterine cavity (either by the suction of the uterus or by their own vibratile motion) and so pass on to the Fallopian tube.

2. *Development of the fertilized ovum.* "(1) When the ovum is mature, two small cells are detached from the main body of cells; these are called polar globules. It was formerly supposed that these were associated with the disappearance of the germinal vesicle, but recent experiments have demonstrated that the germinal vesicle plays an active part in their formation. This can take place independently of fecundation. (2) The portion of the ovum remaining after the throwing off of the polar globules is called the 'female pronucleus.' (3) Fecundation is effected by the penetration of the head of one spermatozoon. This is called the 'male pronucleus.' (4) The male and female pronucleus coalesce. The ovum is now called the oösperm, or blastosphere. (5) The *segmentation* of the nucleus and vitellus, *i.e.* they both split into two masses, these into four, and so on until a large number of segments are formed. This is known as the morula, moriform body, or mulberry mass. (6) A clear fluid is secreted within the ovum, which presses these segments to the surface of the ovum, where they form a double layer of cells, differing somewhat in size. The outer and larger is termed the *epiblast* or *ectoderm*, and the inner and smaller the *hypoblast* or *endoderm*. Together they are known as the blastodermic vesicle. (7) There then appears upon the outside of the vitellus a small oval elevation, surrounded by a depression, which is called the *area germinativa*. (8) There appears in the area germinativa a small, dark line called the *primitive trace*. About this line will be grouped the various parts of the embryo, the rest of the ovum serving only as a covering and for nutriment. (9) A covering for this trace or embryo is now formed. Thus far the vitelline membrane has been sufficient. The embryonic line sinks into the center of the ovum, while the edges of the external blastodermic layer about the area close around it, inclosing it in a sac called the *amnion*. Between the amnion and the embryo, fluid at a later period is deposited; this constitutes the liquor amnii. The vitelline membrane then disappears."—(Landis's *Obstetrics.*)

3. *Meconium* is the name given to the stools of the newborn (or unborn) infant; they are of a green-black color, and are composed of intestinal mucus, bile, epithelial cells, cholesterin, vernix caseosa and phosphates. The continuous passage of meconium from the vagina of the parturient woman during labor indicates a breech presentation. Its discharge in undoubted head or transverse presentations is indicative of impending or actual death of the fetus

4. In the nulliparous adult the uterus is about three inches long, about two inches wide at the upper part, and about one inch thick. It is pear-shaped, and lies between the rectum behind and the bladder in front; it is below the abdominal cavity and above the vagina. Its position is one of slight antetlexion, with its long axis at right angles to the long axis of the vagina. The anterior surface of its body rests on the bladder, and the cervix points backward toward the coccyx. The uterus is not fixed, but moves freely within certain limits. It is held in place by ligaments—broad ligaments, round ligaments, vesicouterine, rectouterine, ovarian, and uterosacral. The arteries are the uterine and ovarian; the nerves are from the uterovaginal plexus, the hypogastric plexus, and the vesical plexus.

5. The *vitellus* is the yolk or germinal part of the ovum together with the substance intended for the nutrition of the embryo. The *allantois* is a fetal membrane developing from the lower part of the alimentary canal very early in fetal life; it enters into the formation of the urinary bladder and also of the umbilical cord and placenta.

The *amnion* is the innermost of the fetal membranes; it surrounds the fetus and is continuous with it at the umbilicus; it secretes the liquor amnii, and forms the sheath of the umbilical cord.

6. A woman usually menstruates about two or three months after her confinement if she *is not* nursing her child, and about seven months after the confinement if she *is* nursing her child.

7. Causes of sterility: Gonorrhea, absence or errors in development of any part of the genital tract, malformations of genitals, fistulæ, lacerations, obesity, alcoholism, pelvic inflammations, dyspareunia, inflammations of uterus, tubes, or ovaries, elongated cervix. The above all refer to the female, but the trouble may be with the male.

8. Climate, race, occupation, and mode of life.

9. It is not *proved* that maternal impressions will produce marks, defects and abnormalities in the fetus. Some *coincidences* have been observed.

10. Credé's method of prophylaxis consists in cleansing the eyes with warm sterile water, and then instilling into each eye a few drops of a two per cent solution of nitrate of silver. The eyes should be treated in this way two or three times a day so long as there is any danger of contracting ophthalmia.

GYNECOLOGY.

1. In *cystocele*, part of the bladder projects into the anterior vaginal wall, and a sound passed through the urethra into the bladder can be freely felt through the anterior vaginal wall; further, it may be impossible to empty the bladder without pushing up the anterior vaginal wall.

In *vaginal hernia*, the bladder is not involved, the hernia will contain intestine or omentum or both, there may be an impulse on coughing.

In a *vaginal tumor* there will be none of the positive symptoms of the two other conditions.

2. *Prolapse of the uterus* is the condition in which the uterus lies low down in the vagina, but does not protrude through the vagina.

Differential diagnosis: In the case of *polypus* the body and fundus of the uterus are in their normal position in the abdomen, a sound can be passed into the uterus, the uterine and cervical canals are not obliterated, the polypus does not bleed easily, and is not particularly sensible to

pain. The *inverted uterus:* shows absence of body and fundus from normal position, will not permit passage of a sound into uterine cavity, the uterine and cervical canals are absent, the inverted uterus tends to bleed easily, and is very sensible to pain. In *prolapse* the largest part of the tumor is above; the opening of the Fallopian tubes cannot be seen; a sound can be passed into the uterine cavity.

Treatment: The uterus should be replaced; the vagina packed with a tampon; a pessary or colpeurynter may be employed; where the round ligaments are relaxed Alexander's operation may be performed.

3. *Menorrhagia* is an excessive hemorrhage from the uterus at the ordinary menstrual periods.

Amenorrhea is absence of menstruation.

Dysmenorrhea is unduly painful menstruation.

4. GONORRHEAL VAGINITIS. *Symptoms:* Pain and burning in the vulva; pain and burning on micturition; dyspareunia; yellowish or greenish discharge, in which the gonococcus can be found; the vagina is hot, red, swollen, and tender. *Differential diagnosis* is made by the finding of the gonococci. *Treatment:* Rest in bed, salines, mild unirritating diet, bathing of external genitals, copious vaginal douches of bichloride of mercury 1:2000 three or four times a day; later, the vagina may be swabbed daily with a solution of nitrate of silver 1 to 5 per cent., or with a solution of potassium permanganate 1 per cent. *Complications:* Cystitis, urethritis, vulvitis, endometritis, salpingitis, septic peritonitis, sterility, condylomata of vulva, abscess of Bartholin's glands.

5. *Abdominal hysterectomy.* "The patient must be carefully prepared as for any other abdominal operation, but in addition the pubes and vulva must be shaved and thoroughly purified; the vagina should be douched for some days previously, and an antiseptic dressing worn, and if need be the uterine canal should be curetted and disinfected with some powerful antiseptic.

"After anesthesia has been induced the Trendelenburg position is adopted, and an incision of suitable length made in the median line. The parts are then carefully explored, and if no adhesions exist an abdominal cloth is packed in over the intestines in order to protect and keep them from exposure and injury. If adhesions to omentum or gut are present they must be carefully divided; it is, of course, most desirable that a complete peritoneal covering should be secured for any adherent organs; omental grafts may be sometimes useful in this direction. The broad ligaments are then examined, and a decision made as to whether or not the ovaries and tubes are to be saved.

"A pedicle needle carrying a sufficient length of well-boiled silk is carried through the round ligament so as to secure the ovarian artery and veins, and tied as far away from the uterus as possible. A broad ligament clamp may then be placed in position close to the uterus, so as to prevent venous regurgitation, and the broad ligament is divided half-way down. It is often possible and desirable to pick up the divided end of the ovarian artery on the face of this section and secure it separately, while the little artery which accompanies the round ligament should also be carefully secured. The ovarian artery on the other side is next dealt with in a similar fashion. A transverse cut is now made across the front of the uterus, involving merely the serous membrane and connecting the two ends of the incisions in the broad ligaments; the peritoneum below this transverse cut is detached, together with the bladder, from the cervix, and the intraligamentary space is thereby opened up on either side. In this will be found the uterine vessels, and it may be possible to see and isolate the uterine artery before securing it by ligature. Care must be taken in this part of the operation to keep close to the uterus, as the ureter comes forward from behind under the uterine artery to reach the bladder, lying about the level of the os internum. The uterine vessels are in this way carefully secured and divided.

"The uterus is now merely held by the connection between the vagina and cervix and the peritoneal reflection in Douglas's pouch. If a supra-vaginal operation will suffice, the surgeon cuts across the neck of the uterus in such a way as to fashion two flaps, and finally the peritoneum behind is divided. A few small vessels will probably need to be secured on the face of the uterine stump. This having been effected, the uterine flaps are stitched carefully together so as to bury the open cervical canal; the uterine stump is then covered in by uniting the divided portions of peritoneum. This line of sutures is carried up on either side so as to secure the two layers of the broad ligament; the final result is that the pelvic floor is covered in by a continuous layer of peritoneum, showing a sutured incision which runs transversely from one side to the other. The usual peritoneal toilette follows, and the abdomen is generally closed entirely, no drainage being required."—(Rose and Carless' *Surgery.*)

6.

SHOCK.	SECONDARY HEMORRHAGE.
1. Generally follows a prolonged operation or one in which the abdominal viscera have been exposed to the air or more or less roughly handled; it is also likely to occur in women who are weak and exhausted physically.	1. May follow either a severe or a simple operation; the general condition of the patient does not influence its occurrence.
2. The patient is listless and apathetic and there is seldom any tendency to toss about in the bed.	2. The patient is restless and her mind apprehensive and anxious.
3. Seldom recurrent attacks of syncope.	3. Recurrent attacks of syncope frequent.
4. Pulse and general condition not satisfactory immediately after operation and the symptoms of collapse come on suddenly.	4. The patient recovers from the anesthetic in a good condition, but later on the pulse gradually becomes accelerated, the temperature falls below normal, and collapse finally intervenes.
5. General stimulating treatment tends to improve the pulse.	5. The pulse progressively grows worse despite all that is done to stimulate the heart and secure reaction.
6. The blood findings are negative.	6. There is a moderate leukocytosis (15,000 to 25,000); the number of red cells and the percentage of hemoglobin are diminished (Martin and Hare); the blood-plaques are increased in number; and the coagulation time of the blood is more rapid.

(Ashton's *Gynecolgy.*)

SURGERY.

1. An *odontoma* is a tumor composed of tooth tissue. *Varieties:* (1) Follicular odontomes, or dentigerous cysts, generally arise from the follicles of the permanent molars. (2) Fibrous odontomes, due to thickening of the tooth-sac. (3) Cementome, due to enlargement and ossification of the capsule. (4) Compound follicular odontome, from the capsule. (5) Redicular odontome, from the papilla. (6) Composite odontome, from dentine, cement, and enamel.

2. A cervical rib may not give any signs or symptoms; when such are present they are due to pressure on brachial plexus or some blood-vessel. It may cause subclavian aneurysm, neuritis, or gangrene of hand. There may be pain, weakness of the arm, trophic disturbances, or obliteration of the pulse. The *x*-rays confirm the diagnosis.

3. *Coxa* vara is a condition in which the neck of the femur is bent downwards so that the angle between the neck and shaft of femur is lessened; the hip joint is healthy. *Causes:* Rickets, impacted fracture of neck of femur, slipping of the epiphysis, and atrophy of the neck of the femur, with osteoarthritis.

4. *Varieties of spina bifida:* (1) *Myelocele*, in which the central canal of the spinal cord lies open on the skin surface of the body (incompatible with life). (2) *Syringomyelocele*, in which the central canal is dilated, so that a portion of the spinal cord is spread out over the interior of the sac. (3) *Meningomyelocele*, in which the meninges remain adherent to the skin, fluid collects within them, and the spinal cord and nerves run down the posterior part of the sac. (4) *Meningocele*, which is a protrusion of the membranes containing cerebrospinal fluid but neither nerves nor spinal cord. (5) *Spina bifida occulta*, in which there is no tumor except perhaps a lipoma or a dermoid with hair.

5. Tabetic arthropathy, or an osteoarthritis.

The *joint signs* are: "(1) Very rapid and painless onset usually occurs. (2) A great synovial distention is the first feature. (3) All the signs of osteoarthritis, viz., enlargement of the bone ends, clipping of articular margins, coarse grating, quickly follow. (4) Marked absorption of bone, with consequent shortening or deformity. (5) Massive heaping up of new bone as an outgrowth round the articular margins, in the hypertrophic varieties. (6) Disorganization or dislocation of the joint from a yielding of the ligaments and destruction of the joint surfaces. (7) Absence of all pain or tenderness is a conspicuous and characteristic feature."—(*Synopsi of Surgery.*)

6. In middle meningeal hemorrhage trephining is often of value because the hemorrhage may be located, the clot turned out, and the artery ligated. It is often difficult to know exactly where to trephine, for the main hemorrhage often occurs not at the point of application of the injury, but on the other side of the cranium.

7. In *epithelioma of the lower lip* there should be thorough and early excision; incisions should be at least half an inch from the tumor. The glands in the submaxillary and submental triangle should also be removed. Dowd's operation is recommended.

8. In *ulcer of the duodenum* the symptoms are very similar to those found in ulcer of the stomach; but in the former condition there is less tendency to vomit, the pain does not come on till some time after food has been swallowed (and has had time to pass the pylorus), and blood in the stools is more common. All of these points are due to physiological and anatomical reasons based on the relative position of the stomach and duodenum. A special sign of duodenal ulceration is the so-called "hunger pain" which occurs at the end of digestion, when the unmixed acid of the gastric juice is passing into the duodenum. This pain is relieved by taking food, for when this occurs the pylorus closes, and the gastric juice is for the time retained in the stomach to be mixed with the food, while the alkaline duodenal and pancreatic secretions are stimulated.

9. *Contraindications to surgery in gallstone in the common duct:* (1) Obstructive jaundice, because operation is then dangerous, owing to the possibility of fatal oozing of blood. (2) In non-patency of the common duct.

10. A *ranula* is a cyst under the tongue, due to dilatation of one of the sublingual ducts.

PEDIATRICS.

1. POLIOMYELITIS. *Symptoms:* "The onset of the affection varies; it may be acute, subacute, or chronic; it is usually sudden, with an attack of mild fever of a remittent type, of a few days' duration, on recovery from which it is noticed that the child is paralyzed. Rarely the paralysis may be preceded by convulsions. The paralysis may affect both arms and both legs, the legs alone, or only one of the four extremities; it may, very rarely, be a hemiplegia. As a rule, however, the leg suffers more frequently than the arm; in paralysis of the leg the muscles below the knee suffer more severely than those above. The bladder and rectum are not affected, or, if so, only temporarily, and anesthesia or numbness cannot be detected. The temperature of the paralyzed limb is low and the part is cyanosed in appearance. After a few days there is a slight improvement in the paralyzed parts, although the muscles show a rapid wasting, which is progressive until all muscular tissue is gone. The reflex movements are impaired or abolished. The electro-contractility by the faradic current is abolished in the paralyzed parts. With the galvanic or constant current the 'reactions of degeneration' are developed."—(Hughes' *Practice of Medicine.*)

Treatment: "During the febrile stage the patient should be placed at rest in bed and all the secretions rendered free. If the affection is suspected at this period the limbs should be wrapped in cotton-wool and ergot administered to lessen the spinal congestion. Counterirritation is unnecessary. As soon as the febrile reaction has subsided and the paralysis becomes manifest the child should be well fed and taken outdoors once daily. Gentle friction should be applied to the affected muscles at first, followed later by the hot spinal douche and mild galvanism. Internally, quinine, belladonna, ergot, and potassium iodide may be of value. Later, as improvement takes place, tincture of nux vomica, ♏i to iii, three times daily, or hypodermic injections of strychnine sulphate, gr. 1/100 to 1/16, according to the age, twice a week, and faradism to the paralyzed muscles, are to be used. Means should be taken to prevent deformities."—(Hughes' *Practice of Medicine.*)

2. DYSENTERY. *Cause:* The *Bacillus dysenteriæ. Treatment:* Rest in bed, a dose of salts, castor oil, with laudanum, irrigation of the colon, liquid diet, ipecac, and serum treatment.

OPHTHALMOLOGY AND OTOLOGY.

1. *Glaucoma* is a diseased condition of the eye, produced by increased intraocular pressure, and resulting in excavation and atrophy of the optic disc, and blindness. It is due to increase of the contents of the eye, hypersecretion, retention, old age, gout, rheumatism, nephritis. *Symptoms:* Visual disturbances, increased ocular tension, hazy and anesthetic cornea, sluggish and dilated pupil, shallow anterior chamber, ciliary neuralgia, cupping of optic disc, blindness. *Treatment:* Miotics, such as eserine or pilocarpine; massage of the eyeball; mydriatics are contraindicated; operative treatment may include paracentesis, iridectomy, or sclerotomy.

2. *Phlyctenular keratitis* "is usually associated with phlyctenular conjunctivitis in children of scrofulous diathesis, but may occur in others. It is characterized by one or more small cysts found on the limbus of the conjunctiva and extending upon the cornea. The symptoms are acute pain, photophobia, lacrimation, and the characteristic bundle of vessels, with a yellow crescent at the apex, its concavity toward the apex. Blepharospasm is present and may be severe. The treatment consists of good food, fresh air, and the administration of tonics and stimulants. Locally, atropin and warm compresses should be used, and the eye douched with mercuric chlorid solution 1:8000. Later, iodoform or calomel may be dusted in the eye and massage with the yellow salve may be practised. Absorption of the vessels may be hastened by the instillation of eserin, dusting with iodoform, and the application of a binder."—(Gould and Pyle's *Pocket Cyclopedia.*)

3. The acoustic nerve has its superficial origin between the pons and restiform body, the floor of the fourth ventricle, by the lineæ transversæ. Its deep origin is from the lateral angle of the fourth ventricle and from the inner auditory nucleus. At the bottom of the internal auditory meatus it divides into the cochlear and vestibular nerves. The *cochlear* supplies the cochlea and posterior semicircular canal; the *vestibular* supplies the vestibule and superior and external semicircular canals.

MEDICAL JURISPRUDENCE.

1. A physician is not at all bound to accept a professional call; but if he accepts he is bound to continue in attendance until the patient no longer requires his services, or he is discharged. He can leave during the continuance of the condition for which he was called only after giving ample notice of his intention to discontinue his services, and allowing a reasonable time for the patient to obtain the services of another physician. The physician undertakes to use proper skill, care, and judgment in diagnosing and treating the case, and also to give full instructions as to how the patient may be best cared for. The patient undertakes to allow the physician ample opportunities to make his diagnosis, to give him all information in his power, to obey instructions, and to pay a proper fee. The physician is not allowed to divulge anything that he learned while in professional attendance, provided such knowledge was necessary to the successful conduct of the case.

Malpractice is a failure on the part of the medical practitioner to use such skill, care, and judgment in the treatment of a patient as the law requires; and thereby the patient suffers damage. If due to negligence only, it is *civil* malpractice. But if done deliberately, or wrongfully, or if gross carelessness or neglect have been shown, or if some illegal operation (such as criminal abortion) be performed, it is *criminal malpractice.*

2. The following, which admirably answers this question, is from Witthaus and Becker's "Medical Jurisprudence":

(1) A physician should refuse to testify as an expert unless he is conscious that he is really qualified as an expert.

(2) After accepting the responsibility, his first duty should be to make a diligent examination and preparation for his testimony, unless it be upon a subject with which he is familiar, and which he is satisfied that he has already exhausted, by reading the best authorities that he can find, and by careful reflection upon particular questions as to which his opinion will be asked.

(3) Where he is to make an examination of facts, such as the post-mortem examination of a body, a chemical analysis, or an examination of an alleged insane person, he should insist upon having plenty of time and full opportunity for doing his work thoroughly. He should take particular pains to make his examination open and fair, and, if possible, should invite opposing experts to cooperate with him in it.

(4) He should be honest with his client before the trial in advising him and giving him opinions, and upon the trial should observe an absolutely impartial attitude, concealing nothing, perverting nothing, exaggerating nothing.

(5) On the preliminary examination as to his qualifications as a witness, he should be frank and open in answering questions. He should state fully the extent and the limits of his personal experience and of his reading upon the subject, without shrinking from responsibility, yet without self-glorification.

(6) He should be simple, plain, and clear in his statement of scientific facts and principles, avoiding the use of technical language, and trying to put his ideas in such form

that they will be grasped and comprehended by men of ordinary education and intelligence.

(7) He should avoid stating any conclusions or principles of which he is not certain, but having an assurance that he is right he should be firm and positive. He should admit the limitations of his knowledge and ability. Where a question is asked that he cannot answer, he should not hesitate to say so, but he should refuse to be led outside the subject of inquiry, and should confine his testimony to those scientific questions which are really involved in the case, or in his examination of the case.

(8) He should always bear in mind that at the close of his testimony an opportunity is usually given him to explain anything which he may be conscious of having said which requires explanation, and partial statements which need a qualification to make them a truth. This is the physician's opportunity to set himself right with the court and with the jury. If the course of the examination has been unsatisfactory to him, he can then, by a brief and plain statement of the general points which he has intended to convey by his testimony, sweep away all the confusion and uncertainty arising from the long examination and cross-examination, and can often succeed in producing for the first time the impression which he desires to produce, and can present the scientific aspects of the case briefly and correctly.

BULLETIN OF APPROACHING EXAMINATIONS

STATE	NAME AND ADDRESS OF SECRETARY	PLACE AND DATE OF NEXT EXAMINATION†		
Alabama*	W. H. Sanders, Montgomery.	Montgomery		
Arizona*	J. W. Thomas, Phoenix	Phoenix	Oct.	7
Arkansas	F. T. Murphy, Brinkley	Little Rock	Nov.	12
California*	Chas. L. Tisdale, 929 Butler Building, San Francisco	San Francisco	Aug.	6
Colorado	David A. Strickler, Empire Building, Denver	Denver	Oct.	1
Connecticut*	Chas. A. Tuttle, New Haven.	New Haven	Nov.	12
Delaware	J. H. Wilson, Dover	Dover	Dec.	17
Dist. of Col'ba	Geo. C. Ober, Washington	Washington	Oct.	8
Florida*	I. D. Fernandez, Jacksonville.	Jacksonville	Nov.	11
Georgia	C. T. Nolan, Marietta	Atlanta	Oct.	8
Idaho*	O. J. Allen, Bellevue	Boise	Oct.	1
Illinois	J. A. Egan, Springfield	Chicago	Sept.	24
Indiana	W. T. Gott, Crawfordsville.	Indianapolis	Jan.	14
Iowa	G. H. Sumner, Des Moines	Des Moines	Sept.	11
Kansas	H. A. Dykes, Lehanon	Topeka	Oct.	8
Kentucky	J. N. McCormack, Bowling Green	Louisville		
Louisiana	A. B. Brown, Cusach's Bldg., New Orleans	New Orleans	Nov.	4
Maine	F. W. Searle, Portland	Portland	Nov.	12
Maryland	J. M. P. Scott, Hagerstown.	Baltimore	Dec.	10
Massachusetts*	E. B. Harvey, State House, Boston	Boston	Sept.	10
Michigan	B. D. Harison, 205 Whitney Building, Detroit	Lansing	Oct.	8
Minnesota	W. S. Fullerton, St. Paul	Minneapolis	Oct.	1
Mississippi	S. H. McLean, Jackson	Jackson		
Missouri	Frank B. Hiller, Jefferson City.	Kansas City	Oct.	1
Montana*	Wm. C. Riddell, Helena	Helena	Oct.	1
Nebraska	E. A. Carr, Lincoln	Lincoln	Aug.	14
Nevada	S. L. Lee, Carson City.	Carson City	Nov.	4
N. Hampshire	Henry C. Morrison, State Library, Concord	Concord		
New Jersey	H. G. Norton, Trenton	Trenton	Oct.	15
New Mexico	J. A. Massie, Santa Fe	Santa Fe		
New York	H. H. Horner, Univ. of State of New York, Albany	New York Albany Syracuse Buffalo	Sept	17
N. Carolina	B. K. Hays, Oxford	Hendersonville		
N. Dakota	G. M. Williamson, Grand Forks.	Grand Forks		
Ohio	Geo. H. Matson, Columbus	Columbus	Dec.	10
Oklahoma*	J. W. Duke, Guthrie	Oklahoma City		
Oregon	B. E. Miller, Portland	Portland		
Pennsylvania	N. C. Schaeffer, Harrisburg	Philadelphia Pittsburgh		
Rhode Island	G. T. Swarts, Providence	Providence	Oct.	3
S. Carolina	H. E. Boozer, Columbia	Columbia	June	10
S. Dakota	L. G. Hill, Watertown	Watertown	Jan.	8
Tennessee	C. A. Abernathy, Pulaski	Memphis Nashville Knoxville		
Texas	J. D. Mitchell, Fort Worth	Dallas	Nov.	12
Utah	R. W. Fisher, Salt Lake City.	Salt Lake City		
Vermont	W. Scott Nay, Underhill	Montpelier	Jan.	14
Virginia	R. S. Martin, Stuart	Richmond	Dec.	17
Washington*	F. P. Witter, Spokane	Spokane	Jan.	13
W. Virginia	H. A. Barbee, Point Pleasant.	Wheeling	Nov.	11
Wisconsin	J. M. Beffel, Milwaukee	Milwaukee	Jan.	14
Wyoming	A. B. Tonkin, Riverton	Riverton		

*No reciprocity recognized by these States.
†Applicants should in every case write to the secretary for all the details regarding the examination in any particular State.

The Increasing Consumption of Alcohol and Tobacco.—Although the sale of alcoholic drinks is prohibited over a large section of the United States, the consumption of the same is steadily increasing. According to the report of the Commissioner of Internal Revenue for the year ending June 30, 1912, 188,000,000 gallons of whiskey was produced, or 13,000,000 gallons more than in the previous year. The number of cigarettes smoked during the year was 11,221,624,084, exceeding the record of the previous year by nearly 2,000,000,000. The consumption of beer fell off 1,108,000 barrels.

Medical Items.

Pneumococcic Laryngitis Followed by Suppurative Arthritis, Endocarditis, Septicemia, and Death.—A. Abrahams reports the case of a man, aged forty-five years, who was admitted to the hospital with urgent dyspnea and stridor of three days' duration. The onset of the disease was said to have been sudden. The larynx was edematous and intensely red. He had slight bronchitis and a temperature of 102.6° F. The urine was very scanty and contained 0.1 per cent. of albumin. He had slight edema of the hands and legs. Cultures from the throat showed a majority of pneumococci. During the next four days the patient steadily improved, the larynx recovered, and it was thought that he might soon be well enough to leave the hospital. On the sixth day he had a rigor, with a temperature of 104.6° F. He then had daily rigors for six days, when he complained of pain in the right shoulder joint. Exploration revealed thick, ropy pus in the subacromial bursa, which pus gave a pure growth of streptococcus. Some improvement followed for a few days; afterwards there were daily rigors, the heart became affected, and streptococci were recovered from the blood. Death occurred three weeks after the operation on the shoulder. Post mortem: The larynx was still a little inflamed; the heart had large, green, recent vegetations on the tricuspid valves such as are usually found with pneumococcic infections. The heart's blood contained streptococci; the lungs showed recent pleurisy and septic infarcts; the spleen and the liver were both enlarged.—*Proceedings of the Royal Society of Medicine.*

Health Reports.—The following cases of and deaths from smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine Hospital Service, during the week ended July 19, 1912:

CHOLERA

Places.	Date.	Cases.	Deaths.
Dutch East Indies Java—			
Rembang, province	July 4	..	Present
Sumatra—			
Bovenlandes, province	June 27-July 4	..	Present
India: Bassein	June 19-25	1	1
Bombay	June 23-29	213	146
Madras	June 23-29	5	4
Moulmine	June 19-25	4	4
Indo-China: Saigon	June 18-24	79	67
Japan: Formosa	June 16-29	31	13
Siam: Bangkok	May 19-June 15	.	281
Straits Settlements: Singapore	June 9-15	3	2
Turkey in Asia: Aleppo	May 19-July 14	263	231

YELLOW FEVER

Brazil: Manaos	June 30-July 6	..	3
Peru: Iquitos	May 1-31	..	3

PLAGUE

Arabia: Oman—Maskat	June 1-22	1	..
Brazil: Niethercy	Mar. 25	8	2
Rio de Janeiro	June 23-29	1	..
China: Hongkong	June 16-22	127	99
Wenchang	June 4	.	*..
Great Britain: Liverpool	July 26	1	..
India: Bombay	June 23-29	24	23
Indo-China: Saigon	June 18-24	1	2
Japan: Formosa	June 16-29	14	11
Persia: Bushir	June 1-15	23	†16
Porto Rico: San Juan	July 30	1	..
Santurce	Aug. 2	1	..
Straits Settlements: Koula Lampour	Apr. 15	3	1
Singapore	June 9-15	1	1
Turkey in Asia: Adalia	May 2 8-June 13	1	‡1

*On the island of Hainan, 10 to 20 cases daily.
†June 1-7, on the route to Shiras, 4 fatal cases.
‡July 4, present.

SMALLPOX

Australia: Townsville	May 24	..	*..
Austria-Hungary: Bohemia	May 19-July 6	13	..
Galicia	May 26-July 6	13	..
Brazil: Rio de Janeiro	May 19-June 22	8	4
Canada: Montreal	July 21-27	4	..
China: Hongkong	June 16-22	1	1
Shanghai	June 17-30	..	3
France: Nantes	July 1-6	3	..
Germany	July 7-13	4	..
Hawaii: Honolulu	July 9-13	1	..
Honduras	July 19	..	†..
India: Bombay	June 23-29	17	15
Madras	June 23-29	1	1
Java: Surabaya	June 4-17	..	‡..
Mexico: Aguascalientes	July 15-21	..	2
Guaymas	July 14-20	..	**..
Mexico	June 23-July 6	68	33
Salina Cruz	June 29-July 6	2	1
San Luis Potosi	May 5-11	.	2
Portugal: Lisbon	July 7-13	3	..
Russia: Reval	June 1-30	1	..
St. Petersburg	July 1-6	6	6
Siam: Bangkok	May 19-Jude 15	..	21
Spain: Cadiz	June 1-30	..	2
Valencia	July 7-13	9	1
Straits Settlements: Singapore	June 9-15	..	1
Turkey in Asia: Beirut	July 7-13	10	..

*1 case on s. s. Yawata Maru from Japan.
†Present in the interior.
‡Still epidemic, but decreasing.
**Present in small towns in vicinity.

Medical Record

A Weekly Journal of Medicine and Surgery

Vol. 82, No. 8.
Whole No. 2181.

NEW YORK, AUGUST 24, 1912.

$5.00 Per Annum.
Single Copies, 15c.

Original Articles.

ON THE CLINICAL RECOGNITION OF SYPHILITICS.*

BY WILLIAM W. GRAVES, M.D.,

ST. LOUIS, MO.

ASSISTANT PROFESSOR OF NEUROLOGY IN THE ST. LOUIS UNIVERSITY SCHOOL OF MEDICINE.

Wollen wir weiter kommen so müssen wir genauer untersuchen.—Rudolf Virchow.

SYPHILIS is a chronic infectious disease permeating all branches of society. Neither age, nor sex, nor social position, nor chastity renders one immune to this disease. It differs from all other infectious diseases in its duration, with possibly the single exception of leprosy. At any period in the life of the infected individual its manfestations may recur, and we are, therefore, unable to know its termination. Its symptomatology is as broad as special pathology. There is scarcely an organ or tissue in the body exempt from its manifestations. There are but few diseases which it may not simulate and none which it may not modify. It is rarely directly fatal, but its indirect mortality is believed to be very high—how high is as yet indeterminable. It lowers one's general resistance, thus predisposing to other diseases and often complicating them. No other disease is followed by such distressing sequelæ, chief among which are tabes and general paresis. Like another social disease, gonorrhea, the effects of syphilis are not confined to the infected individual. In the marital relation it is not infrequently communicated. Syphilis differs from all other infectious diseases in its effects upon the descendants of its victims. It is here that its most pernicious effects are wrought, pernicious in causing a frightfully high antenatal and postnatal mortality and in depriving the offspring of a healthy birthright.

Because syphilis is an infectious disease permeating all branches of society; because of its Protean manifestations and sequelæ; because it lowers the general resistance of the individual; because it simulates, modifies, predisposes to and complicates other diseases; because of its effects upon the immediate progeny and upon later generations, the recognition of the syphilitic is a matter which deeply concerns the infected individual, his descendants, the State and the physician. It is not within the scope of this communication to even touch upon the diagnosis of syphilis or of syphilogenous diseases, although that which is to follow will, I trust, be helpful in th recognition of some of the Pretean manifestations of the disease. My theme is the syphilitic and not syphilis.

*From the Department of Nervous and Mental Diseases. Alexian Brothers' Hospital, St. Louis (St. Louis University).

Since we have no means of knowing the termination of syphilis in any individual who has acquired it, all such individuals must be considered syphilitics. I have in other communications (33, 34, 35, 36, 37) pointed out the correlation of certain deviations, clinical signs and conditions, and certain methods of study which I believe will aid us in the clinical recognition of the so-called heredosyphilitic. In this communication I shall confine my remarks mainly to the clinical recognition of syphilitics in periods more or less remote from the time of infection and in such periods when they are usually considered free from active surface, visceral, nervous, or para manifestations; in other words, to the clinical recognition of syphilitics in the so-called latent periods of the disease.

Because syphilis is a chronic infectious disease, it will be here maintained that in the course of time it often brings about definite changes readily discernible through the employment of well-known methods of clinical investigation, and that these changes wrought by syphilis when found make up an assemblage of physical signs not correlated in other diseases, and hence may be designated *a syphilitic syndrome* and utilized in the clinical recognition of the syphilitic. Great progress has been made in recent years in medical knowledge which finds application in the recognition of the syphilitic. The finding of the *Treponema pallidum*, the determination of the Wassermann reaction in blood serum and spinal fluid, cytological studies, Nonne-Appelt and kindred reactions in the spinal fluid, and more recently the Noguchi luetin reaction, together make up an assemblage of laboratory findings unequaled in any other disease. Laboratory methods, however, can never supplant clinical observations and deductions; but they may and do furnish invaluable supplemental evidence and they further serve the purpose of checking and controlling our clinical methods. Laboratory methods must remain inert or at least fall short of their possibilities if in our clinical studies we fail to recognize the individual in whom these methods find application. The clinical recognition of the syphilitic is, therefore, more urgent at the present time than ever before because laboratory methods furnish increased possibilities in such recognition.

In this connection it cannot be too strongly emphasized that the presence of the Wassermann reaction alone is not conclusive evidence that the disease from which an individual may suffer is due to a syphilitic process. It shows merely that the individual in whom it is definitely found, when we can exclude other conditions which produce it, is a syphilitic. The presence of it, therefore, in any individual is a great aid in recognizing him as a syphilitic; but its absence in any individual in no sense justifies the conclusion that he is not a syphil-

itic because it is not constantly present in any period of the disease. Nevertheless, the Wassermann reaction has become indispensable in our studies of syphilis and the syphilitic, but it has its limitations. Any method or combination of methods utilized in diagnosis, without considering the whole individual, is apt at times to impede the recognition of disease. We have only to remember how the clinical recognition of pulmonary tuberculosis was impeded for a number of years following the discovery of the tubercle bacillus. The same danger confronts us now in the clinical recognition of syphilis and the syphilitic. Just as in former years we forgot how or rather failed to study the whole individual while searching for the tubercle bacillus, so now in the absence of a Wassermann reaction we are either apt to overlook manifest signs or to study inadequately the whole individual and thus fail to recognize his disease.

Recognizing the limitations of laboratory methods is to estimate them at their true worth. While great progress has been made in recent times in the recognition of syphilis and the syphilitic through the utilization of these methods, can we say the same for our purely clinical methods? Unquestionably, no! Since the epoch-making studies of A. Fournier, W. Erb, and others, by which the definite connection between syphilis and tabes has been established, and the studies by A. Fournier, Krafft-Ebbing, E. Mendel and others which have shown the definite connection between syphilis and general paresis, no decided advance has been made in the clinical recognition of the syphilitic. The reasons for this state of affairs are to be found in what appears to be the presence of inherent difficulties, and difficulties which must be reckoned with and overcome before we shall be able to keep pace with the laboratory methods and utilize them to the extent of their possibilities in our clinical studies. These difficulties are fundamental, have existed for years and are: First, our conceptions concerning the manifestations of syphilis in its acquired and so-called hereditary forms; second, our belief in its curability and our conceptions concerning its communicability; third, our methods of study.

1. Present conceptions concerning the manifestations of syphilis in its acquired and so-called hereditary forms: There is abundant evidence at hand indicating that the clinical recognition of the syphilitic is becoming, as time goes on, more and more difficult. It is apparent in the population of civilized countries where syphilis has long prevailed that the clinical history of syphilis is not what it formerly was and that the surface manifestations by which we have been so long accustomed to recognize the disease in any of its so-called stages are less pronounced than in former years. This fact is not recognized as generally as it should be even by those most interested in the problems of syphilis, and it finds no recognition whatever among the rank and file of the profession. The idea still generally prevails among the profession and almost without exception in the lay mind that syphilis is a skin disease. It is not generally recognized that surface manifestations, nowadays, even the initial lesion in some, may be wholly absent or at least so slight as to entirely escape the individual's attention. It is not generally recognized that in the vast majority of cases, nowadays, surface manifestations are extremely mild and are seldom followed by lasting marks. It is not generally recognized that so-called malignant syphilis, characterized by early cachexia, decided skin and bone manifestations, which was of such frequent occurrence several hundred years ago and is today of such frequent occurrence when syphilis invades a virgin soil, is relatively infrequent nowadays among syphilitics in populations where syphilis has long existed.

For general enlightenment along the line of the manifestations of syphilis in virgin soil, no article of recent years is deserving of closer study than that of Col. Lambkin[1] on the recent outbreak of syphilis in Uganda. Further evidence in support of the increasing mildness of surface manifestations in our population is apparent in the rarity with which are found marks of former lesions in tabetics, paretics, and individuals suffering from nervous and visceral syphilis. Additional convincing evidence may be deduced from the fact that not a few individuals suffering from the later manifestations of syphilis or from its sequelæ are entirely ignorant not only of the initial but of other lesions. Furthermore, it has long been recognized that females, as a rule, suffer less frequently from surface manifestations and sequelæ than males, and this fact should be remembered in our clinical study of females, particularly of the wives of syphilitics. The mildness of surface manifestations, nowadays, has been ascribed to a sort of racial immunity engendered by a gradual syphilization of the race. We must not conclude, however, that time brings with it an absolute racial immunity or even an attenuation of the virus. There is no evidence at hand indicating that visceral syphilis, syphilis of the nervous system, and parasyphilitic diseases are becoming either less frequent or less severe. Indeed, these affections are believed by many to be growing more frequent in our population. The assumed racial immunity, therefore, cannot be absolute and at most can be relative only, finding expression in many individuals of the race either in the absence or in the mildness of surface manifestations. May it not be that such relative immunity of many individuals to surface manifestations is more than balanced in them by an increased vulnerability to the effects of the virus upon their deeper structures and particularly upon their nervous and vascular systems?

From the foregoing it appears that a gradual syphilization of the race is indicated by the mildness in many and the absence in some of the surface manifestations; hence syphilitics are becoming constantly more difficult of recognition. It follows, therefore, that the generally accepted present-day conceptions of the surface manifestations of the disease represent fundamental difficulties in the clinical recognition of the syphilitic, and that neither the negative history nor the absence of surface signs warrant the exclusion of syphilis in any individual. If our conceptions require alteration concerning the manifestations of syphilis in its acquired forms, such alteration is far more needful in the so-called hereditary forms. In our efforts to recognize the syphilitic, we may often obtain valuable information by studying the progeny; because no other disease is so certainly transmissible to the offspring. Failing to find one or more of the well-recognized signs, chief among which are Hutchinson's teeth, other dental anomalies, interstitial keratitis, deafness without otitis, bone, joint, skin and mucous membrane affections, etc., etc., in the progeny, do we not as a profession

consider the progeny free from every sign of hereditary taint and thus either exclude syphilis in the parents or point to the progeny as living examples of the triumphs of our therapy in the parents?

2. Our belief in the curability of syphilis and our conceptions concerning its communicability: If there be any one thing the medical profession is united upon, it is the belief in the curability of syphilis, and this belief is one of the principal impediments to the clinical recognition of the syphilitic. Our attitude toward the marriage of syphilitics is, perhaps, the best evidence of our belief in our cures. "How soon may a syphilitic marry?" is a standard question in examinations of medical schools and medical examining boards. A prominent syphilographer recently lauding salvarsan expressed the belief that by its use the period of treatment might be shortened and that the marriage of the syphilitic might not be so long deferred.

Sir Jonathan Hutchinson[2] has said, in effect, that a male syphilitic is rarely capable of conveying the disease either to his wife or offspring provided he has remained continuously under treatment (Hutchinson's) for a period of two years; but, so far as I know, no other great authority is quite as sanguine either of the innocuousness of the syphilitic or the curability of his disease. Nevertheless, it is an almost universally accepted medical dogma that syphilis is not communicable in its later stages or in the absence of primary and so-called secondary lesions; hence medical authorities unanimously consent to the marriage of a syphilitic three, four and five years after infection, provided he has had rather continuous treatment during this time and has shown no recent manifestations. While we are, as a profession, optimistic in our belief in the curability of the disease, as is evidenced by our attitude toward the marriage of the syphilitic, we are pessimistic as to the future of the individual who fails to remain under rather constant treatment for three, four, or five years. Now it is safe to say that not more than 10 per cent. of the number of syphilitics who come under medical observation in the early periods of the disease receive what is believed to be adequate treatment; hence the number of adequately treated cases, even though such are cured, is insignificant and negligible in our clinical studies. The truth of the matter is that no man can say when a syphilitic is cured nor when he is no longer capable of conveying the disease either to his consort or his progeny; because clinical experience teaches that in any period of the life of the infected individual, incident to the lowering of general or local resistance or independently of the one or the other, manifestations may recur or appear and that, too, in some irrespective of either the manner or the length of treatment.

Furthermore, serological studies of the one-time-known-to-be infected individual, of his consort, and of his progeny, substantiate recent clinical experience in showing that a large percentage of supposedly adequately treated individuals have not been cured at all; that a relatively large percentage of wives of syphilitics are also syphilitic and that many of the progeny of syphilitic parents, even not a few of those free from the usually recognized signs of congenital syphilis, are likewise contaminated. But our belief in time and specifics blinds us to these clinical truths and is, therefore, a decided impediment to the recognition of the syphilitic and syphilogenous diseases. Believing in our cures and resting secure in the presence of apparent good health or in the absence of active or para manifestations, we come to regard the one-time-known-to-be syphilitic cured, and he is thereafter no longer the object of observation and study. If he is cured, then, certainly there is no danger to consort or progeny; and, if we look at these at all, unless we find the usually recognized gross manifestations, we construe the absence of such as evidence of the values of our therapeutic endeavors. Hence it is that our belief both in the triumphs of our therapy and the noncommunicability of the disease in certain periods are decided impediments in the clinical recognition of the syphilitic.

3. Our methods of study: If our conceptions of the manifestations of syphilis in its acquired and so-called hereditary forms have impeded the clinical recognition of syphilogenous diseases and the syphilitic; if our belief in our cures has blinded us to the more subtle manifestations of the disease in individuals and in parents and progeny, our methods of study have been even more serious handicaps in our clinical work. But our methods of study are dependent upon our conceptions of the manifestations of the disease, of its curability, and of its communicability. The existing conceptions in these matters have rendered our methods of study faulty, it seems to me, mainly in two directions: (a) In definitely excluding the disease in the absence of a positive history of initial and other lesions; (b) in failing to consider the whole individual in our clinical studies.

(a) Syphilis is the only disease we definitely exclude by a negative history, and it is the only disease we positively diagnose from a positive history, and in either case oftentimes without a careful study of the whole individual. It was the negative history of initial and other lesions in many paretics and tabetics supported by the infrequent findings in them of signs of former surface manifestations which prevented for so long a time the conception that either acquired or congenital lues was the underlying cause of these conditions, and the negative history and paucity of surface signs still prevent the universal acceptance of the dictum "Without syphilis, no paresis and no tabes." It is the negative history so common among syphilitics generally nowadays that prevents many practitioners from even considering the possibility of infection unless the individual shows active surface, visceral, nervous or para manifestations. "If I had ever had syphilis, I should know it," is a common exclamation of patients, and the medical mind still clinging to classical textbook descriptions of the so-called stages of the disease answers, "Of course you would," and from the negative history excludes even the possibility of infection. No clinical history is considered complete in an adult male without inquiry into its venereal aspects; and, although an individual may admit frequent exposure or even several attacks of gonorrhea, if he assures us he has never had a genital sore, eruptions of the skin or mucous surfaces, or falling of hair, syphilis is, as a rule, definitely excluded.

A few of us, remembering the possibility of extragenital and innocent infections and the frequency with which abortions occur in syphilitic families, and remembering, furthermore, that all patients are not truthful regarding venereal history, look at the exposed surfaces, palpate the

lymph glands, etc., make inquiry concerning abortions and the health of the wife and children, and all of these points being negative the disease is definitely excluded. But the individual consults us, let us say, for an ocular palsy, pain, a change in his mental state, perhaps, a definite psychosis, gastric disturbance, a jaundice, or perhaps symptoms pointing to aortic aneurysm, and we have a Wassermann reaction made and this, too, is negative; yet this individual may be a syphilitic!

If we admit that some individuals are not truthful about venereal experiences, then syphilis cannot be excluded by a negative history. If we admit that it is possible that some individuals do contract syphilis without ever thereafter noting initial or other lesions, then syphilis can never be excluded by a negative history. If we admit that even a few individuals have syphilis without permanent or even transient surface signs, then syphilis can neither be excluded by their absence nor by a negative history of them. If we admit that abortions do not always occur in syphilitic families, then a history of their absence does not exclude syphilis in either parent. If we admit that the Wassermann reaction or any other single laboratory test or clinical sign is not constantly present, then we cannot exclude syphilis by the absence of the one or the other. If we remember the great number of syphilitics in the world and the prevalence of syphilis among prostitutes, the most common source of infection; if we remember our lax sanitary regulations of the disease, the rarity of premarital chastity among males, the relative frequency of extragenital and innocent infections, then, it seems to me, that unless it can be shown that an individual has never in his life come in contact with his fellows, we cannot exclude syphilis in him by a negative history. But the individual may be a so-called heredosyphilitic and yet show none of the heretofore generally recognized signs of the disease, and here again negative history is valueless because it is unusual for the offspring to have knowledge of the syphilitic infections of parents. Neither can we place too much reliance upon the history of a former infection—the diagnosis may have been wrong.

How then may we clinically recognize the syphilitic? By considering each individual who seeks medical advice as a whole individual. The prevalence of syphilis in all branches of society, its Protean manifestations, the frequency with which it predisposes to, complicates and simulates other diseases, if for no other reasons, render the consideration of the whole individual imperative in our clinical work. It is much easier to decide (?) what is wrong from the complaints of the patient or his more prominent physical signs—to call it eyestrain, epilepsy, floating kidney, sacroiliac disease, gastritis, neurasthenia, hysteria, rheumatic ocular palsy, gastric neurosis, a functional heart disturbance, a muscular rheumatism, a neuralgia, a bilious attack, a vertigo, a gouty diathesis, a malaria, and so on without number, than to make a study of the whole individual. Such study takes time, and, strange to say, is often regarded as wholly unnecessary in this day of specialism and short cuts to diagnosis. If this is true, then our failure to study the whole individual may well be the most serious impediment in the clinical recognition of the syphilitic. By the study of the whole individual is usually implied all that we can learn from the family history, the personal history, the history of the present trouble, and a searching physical examination. Because syphilitic manifestations are not infrequently found in the consort and progeny of syphilitics, our clinicial conceptions of the whole individual must be enlarged so as to embrace a study of these. Just as it is impossible to exclude by a negative history and the absence of surface manifestations the presence of syphilis in the individual, so it is impossible to exclude it by the same means in consort and progeny. It is not sufficient to recognize syphilitic manifestations in the husband, the wife, or the child; but, finding such in any one of these, we must study every member of the family. In doing this, we shall be able to control by actual observation hearsay testimony which we have heretofore recorded as facts concerning family history and the health of the husband or the wife and the child.

I have elsewhere[37] called this method of study the comparative clinical studies of families. Such studies are of extreme value in the problems of heredity and in clinical medicine and are indispensable in our studies of the syphilitic. A consideration of the whole individual, as here defined and so enlarged as to embrace a study of every member of a family, will enable us to secure definite data from which the clinical recognition of the syphilitic will be made both more certain and more frequent than heretofore. Space prevents considering here, even briefly, the features of family histories common to syphilitic families; likewise the personal histories common to syphilitics. But there are certain subjective symptoms associated with definite physical signs which may be elicited and discerned in the vast majority of syphilitics during the so-called latent periods of the disease to which I must now direct attention, since the appreciation of these is fundamental to the clinical recognition of the syphilitic during such periods.

Such symptoms as malaise, indisposition, general bodily discomfort, pain, now here and now there, or definitely localized, physical and mental inadequacy, torpor, gastric disturbances, dizziness and in some slight elevations of temperature occurring usually six to twelve weeks following a syphilitic infection, are considered constitutional manifestations or the reaction of the whole organism to the spirochetal invasion. Such symptoms usually become less pronounced in a short time, whether the individual have treatment or not, the local manifestations, if any have occurred, disappear, and, as a rule, in course of time a relative degree of health returns. He, thereafter, considers himself cured if he has had what his physician believes to be adequate treatment or if his disease has not been recognized by himself or physician, he remains oblivious to it and in either case enters the so-called latent periods of the disease. In some individuals such periods develop very early; in some, very late; and in others, happily the few, not at all. It is usually considered that period in the life of the syphilitic when neither local, focal, nor para manifestations exist. Arbitrarily fixed, the so-called latent period begins, as a rule, two to five years after infection, and from the viewpoint of the clinician it ends with the life of the infected individual.

Careful inquiry into the personal histories of those known to be syphilitics during this period, even of those to whom we have given what we consider adequate treatment, will disclose in many

breaks in health which often can be best interpreted as recurrences of the constitutional manifestations of the virus. Of these constitutional symptoms occurring and recurring in the so-called latent periods of the disease as well as in the presence of active manifestations, as far as my observations go, the most prominent are pain, feelings of fatigue, gastric disturbance, dizziness, periods of mental and physical inadequacy, and inability to react normally to the stresses and strains of ordinary existence. It is particularly the occurrences and recurrences of the constitutional symptoms during the so-called latent periods of the disease which should cause us to seriously question the reality of such periods and never to lose sight of the constitutional nature and chronicity of the infection. All clinical evidence—the local, the focal, the para and the recurring constitutional manifestations—is in support of the idea that the virus once invading the tissues of the body, so long as it remains, never becomes wholly dormant—latent.

A period or periods of relative tolerance for the virus, meaning thereby an excellent, a fair, or a poor resistance of the whole or a part of the organism, but never an absolute resistance, seems to me to be a better conception, one more in accord with the clinical experience, the natural history of the disease, and the results of treatment than that of latency. Oppenheim has said, and repeatedly emphasized in his writings, that the chief characteristic of the nervous manifestations of syphilis is that of exacerbations and remissions and this observation holds good for most of its organic as well as for its functional manifestations. Furthermore, careful study of the personal histories of known-to-be syphilitics indicate that exacerbations and remissions are characteristic of the constitutional manifestations of the disease. The conception of a relative tolerance is, therefore, founded upon clinical experience, the course and the manifestations of the disease. The occurrences and recurrences in the constitutional manifestations during periods of relative tolerance are, doubtless, due to many factors, chief among which are the inherent resistances of the individual, his habits, his mode of life, and his environment. If the first factors (inherent resistances) are defective and from circumstance become more so, the disease may pass beyond our control. The other factors may in many cases be controlled and the first may often be improved by attending to the others so that a relative degree of health can be established in the vast majority of syphilitics. But our control in any one or in all of these factors is seldom absolute; hence, as a working clinical axiom it may be asserted that the individual who has contracted a syphilitic infection either *in utero* or after his birth remains thereafter one of lowered general resistance. Careful studies of the personal (medical) histories of syphilitics and their progeny will verify this assertion and but few exceptions will be found, provided we further study each individual as a whole. I must beg indulgence in attempting to emphasize the recurring constitutional manifestations of syphilis during periods of relative tolerance because my experience has shown that such manifestations are usually overlooked and misinterpreted in the absence of "specific" history and the more active manifestations of the disease.

When as a profession we shall seriously study the recurring constitutional manifestations of syphilis we shall find them to be by far its most frequent and most important manifestations. They are the most important because they represent the reactions of the organism to the virus—its struggle to establish a better tolerance and our recognition of them will often enable us to aid Nature in her efforts and thus prevent in some the more serious manifestations. The recurring manifestations may either be so slight or so evanescent or recur so infrequently as never to seriously interefere with the pursuits of the individual or to cause him to seek medical advice (excellent tolerance). When complained of, if at all, to the physician, they are referred to as undue susceptibiity to fatigue, pain in different parts of the body, rheumatism, bilious attacks, stomach trouble, etc. They are to be found among the minor ailments which we often fail to note or we consider them unimportant in working out personal (medical) histories. In not a few, however, the constitutional manifestations become very definite at variable periods of time following the infection (fair tolerance). In some they persist from the beginning (poor tolerance). In others after periods of apparent good health extending over a number of years, following some sudden or prolonged period of stress or strain or independently of such, constitutional manifestations become relatively constant, bringing about states of chronic invalidism characterized by mental and physical inadequacy, the chief complaints centering either about the gastrointestinal tract or the nervous system or both. My observations have shown that so-called neurasthenic and psychasthenic states, functional neuroses and psychoses, recurring or chronic states of mental and physical inadequacy owe their origin and perpetuation in part at least in not a few individuals to a chronic syphilitic intoxication acquired either *in utero* or after birth. It may be asked: Are the constitutional manifestations of syphilis occurring and recurring during the periods of relative tolerance sufficiently definite to enable us to recognize them as syphilitic manifestations? Unquestionably, no! Even the local and focal manifestations of syphilis, such as diplopia incident to a transient ocular palsy, an iritis, a choroiditis; definitely localized pain, such as a tic douloureux, an intercostal neuralgia, anginal attacks, Jacksonian seizures, bone, joint, lymph gland and surface manifestations, enlargement of the liver, spleen, etc., etc., are not sufficiently definite to enable us to recognize them as syphilitic in origin from the history alone. We may say, therefore, that neither the constitutional, the focal, nor the local manifestations of syphilis occurring alone or in combination during the periods of relative tolerance are sufficiently distinct to enable us from the history to definitely recognize them as syphilitic in origin. But they are sufficiently definite to cause us to make specific inquiry concerning them, to think of the possibility of syphilis in any individual presenting them, and to proceed with the study of the individual as a whole.

The conception of a syphilitic infection leading to a chronic intoxication, but with the resistances of the body so holding the virus in check as to establish periods of varying tolerance for it, affords a logical explanation for the recurring constitutional and other manifestations in many and likewise for the development in some of so-called para manifestations. If this conception is well founded we should expect to find evidence in support of

it in our physical examinations of syphilitics. This conception, therefore, *a priori* points to the development of physical signs originating in certain tissue reactions incident to the chronicity of the syphilitic infection. Now if such signs really exist, an appreciation of them should aid us in the clinical recognition of syphilitics.

Having pointed out some of the fundamental difficulties in this problem and having indicated both the necessity for and the manner of overcoming these difficulties in our clinical studies, let us now direct our attention to an assemblage of physical signs which my studies of recent years have shown to be common to syphilitics—signs developing in an insidious manner during their periods of relative tolerance. In contradistinction to the grosser manifestations of the disease they may be called its more subtle signs. They seem to originate in or to be dependent upon certain tissue reactions incident to the virus and to the chronicity of the infection. While scarcely an organ or tissue in the body is exempt from the manifestations of syphilis, certain structures have always seemed more vulnerable to the virus than others. Syphilis in this regard differs in no way from other infections. The syphilitic virus, undoubtedly, has elective affinities for certain structures. Formerly it was mainly the skin, the bones, the joints, etc.; but with a gradual syphilization of the race these structures seem to have made a relative gain in resistance, whereas the deeper structures of the body, and particularly the vascular and nervous systems, seem to have become more and more vulnerable. The virulency of the virus has, probably, remained the same; but the soil has changed with the years and likewise the manifestations of the disease. The more subtle signs of syphilis are founded upon this clinical assumption and in addition upon clinical and serological evidence that syphilis is a chronic infectious disease. The physical signs common to syphilitics, discernible during the periods of relative tolerance for the virus and here designated *A syndrome syphilitica*, are: (a) Those of a general nature; (b) those pertaining to the cardiovascular apparatus; (c) those pertaining to the nervous system.

(a) The syphilitic during his periods of relative tolerance who is free from intercurrent affections, upon superficial inspection usually passes for a well-nourished individual. Let us recall the apparently good nutritional states commonly noted even in tabetics and paretics often persisting until the conditions are far advanced. If, however, there is a family tendency to obesity or to thinness, these tendencies are apt to be accentuated in the syphilitic. Sir Jonathan Hutchinson has emphasized the characteristic of a syphilitic infection to accentuate the natural tendencies (weaknesses) in the individual, and this is aptly illustrated in the general nutritional states of syphilitics. A closer inspection of the syphilitic will frequently show that he wears only a mask of health, as is indicated by a degre of pallor which is often in striking contrast to his nutritional state. During the early periods of the disease the skin and visible mucous surfaces are often flushed, hyperemic; but in the course of time in many a degree of pallor indicative of disease becomes apparent. As we grow older we become paler. We lose the bloom of youth with advancing years. But if we are in health during the declining years (after forty) our pallor is, I may say, a healthy pallor and is in keeping with our years. It is the exceptional syphilitic who does not show a degree of pallor—an unhealthy pallor—beyond his years noticeable within from three to five years after his infection. This pallor is also common to the progeny of syphilitics, and as we shall later see, probably has in them the same foundations.

Syphilitics and their progney appear older than their years, not only because of the pallor often noticeable in them, but because of other signs, such as little telltale wrinkles about the brows and mouth and sides of neck, an old, settled, often dull look about the eyes, and with these signs of premature age are often associated the facial expressions of fatigue. In some syphilitics there is an added element to the pallor, a definite cachexia, which might be called a cachectic pallor. The pallor common to syphilitics and their progeny, even when cachectic, is peculiar in this, that it is seldom associated with a blood picture of anemia, and if so is rarely profound. Indeed, in not a few instances of extreme pallor, where from this alone one would strongly suspect a decided anemia, an actual increase in the red cells was found associated with good hemoglobin percentages. The pallor, or as I have called it, the cachectic pallor, is usually decided in paretics, and particularly so in tabetics, but not more so in them than in syphilitics who have only a fair, a poor or a failing tolerance for the virus. The skin surfaces about the body generally are usually pale, where not pigmented, and the skin is often in places dry, harsh, scurfy, and atrophic to a degree beyond the years. A clinicial fact well worthy of notice and possibly indicating one factor underlying the pallor without anemia, common to syphilitics, is its prompt amelioration in many and prompt disappearance in some for a time incident to specific treatment.

While the main characteristic of the face of a syphilitic is that of pallor, there is another in the pigmentation most frequently seen about the back and sides of neck, and occasionally about the forehead, other parts of the face and other parts of the body. Its occurrence independent of definite lesions, its permanency, its symmetry, and its tendency to conform to posterior nerve root distributions cause me to consider it here as a general sign of a syphilitic infection. About the neck it occurs, according to Shillitoe,[3] in two well-defined forms: (a) A well-marked band of pigmentation extending around the neck (collar of Venus) and noted by him seven times in thirty-seven cases; and (b) as leucodermic patches surrounded by a network of pigmentation noted by him thirty times in thirty-seven cases. Occurring about the forehead, the pigmentation is usually distributed irregularly, and is retiform like that most frequently to be observed about the neck. The great frequency of pigmentation about the neck in syphilitics at once establishes it as a sign of great worth in their clinical recognition. Situated as it usually is out of the direct line of vision of the patient or the physician, it is rarely complained of by the former or noted by the latter; hence it is that the so-called pigmentary syphilide, despite its occurrence in many syphilitics, still remains an unappreciated because unlooked for sign of syphilis. My observations have shown that in a few syphilitics the pigmentation is rather evenly distributed about the face and neck. But I have noted far more frequently than uniform pigmentation

in these locations and quite constantly associated with irregular pigmentation about the back and sides of neck the presence of uniform pigmentations occurring about the orbits and mouth. Occurring about the orbits, it is often sharply limited to the oculoorbital folds and the upper lids; and about the mouth it is often confined to the skin surfaces of the lower lip. The skin surfaces about the orbits and mouth show shades in brown and yellow, their intensity depending upon the normal tints of the skin peculiar to the individual. In those cases where these pigmentations are present about the orbits and mouth and when associated with pallor of the lips and intervening skin, the expression often takes on a grotesque appearance.

However specific a pigmentation may appear to be, it must not be forgotten that pigmentations occur in other diseases than syphilis, such as hyperthyroidism, Addison's disease, arsenic poisoning, diabetes, etc.; but the character of the pigmentation and its distribution in these conditions will usually enable one to make the differentiation.

(b) Pallor without anemia and other signs of premature age so frequently to be observed in syphilitics and their progeny should cause us to direct our attention to the cardiovascular apparatus which, probably more than any other, bears the brunt of a syphilitic infection. No other disease or condition known to have intensive vascular reactions has such a chronic course and at the same time is so frequent in all ranks of society. Therefore, if syphilis has a deleterious effect upon the vascular system, both its chronicity and universality should render it a frequent cause of cardiovascular disease. "The most important form of infectious disease of the vessels is that due to syphilis" (Benda).[4] "Of the acute infectious diseases, syphilis is the one which has a special predilection for the arteries" (Osler).[5] "Upon no system does the virus of the disease fall with greater intensity in all stages than upon the blood vessels. It is safe to say that through the arteries syphilis kills more than through any other channel. Cerebrospinal lues is largely a matter of arterial disease" (Osler and Churchman).[6] "No disease is, probably, more productive of arterial degeneration than syphilis. . . . Although syphilis may attack any of the arteries, it has a predilection for the vessels at the base of the brain" (Mott).[7]

It is the intimate association of the vascular apparatus with every part of the body which renders it constantly exposed to the syphilitic virus throughout the course of the disease. That the vascular system is peculiarly susceptible to the effects of syphilis or its toxins is shown by the general hyperemia observed during the early periods of the disease, by the local reactions of the vessels adjacent to and within initial scleroses and other early and late lesions, by the great frequency with which the aorta and pulmonary arteries show specific reactions (mesarteritis) in both the acquired and congenital disease (Chiari,[8] Benda,[4] Wiesner,[9] Bruhns,[10] and Rach and Wiesner[11]), by the relative frequency of aortic aneurysm and so-called varicose ulcerations in syphilitics, by the relative frequency of cardiac and vascular changes to be noted both clinically (Strümpel)[12] and anatomically (Frankel)[13] in tabetics and paretics, and by the relative frequency with which organic nervous disease occurs incident to or associated with disease of the vessels of the nervous system in syphilitics and congenital syphilitics (Heubner,[14] Nonne,[15] Rumpf, and many others). Syphilis might, therefore, well be called a vascular disease since so much of its pathology is connected with its vascular manifestations. Such a conception of syphilis, if generally adopted, would go a long way toward removing the disease from among the dermatoses and placing it among the internal diseases where it rightly belongs, and thus lead to a more frequent recognition of the syphilitic by the clinician. But so much emphasis has been placed upon the so-called specific vascular changes (endarteritis, mesarteritis) in syphilitics and the predilection of the virus for the vessels of the nervous system and the aorta that in the absence of clinical signs pointing to the involvement of the one or the other, syphilis as the cause of general arterial disease is rarely given due consideration by either the pathologist or the clinician.

If syphilis is a common cause of general vascular disease, we should expect to find clinical evidence of it in the majority of syphilitics before the age of forty because it is an established fact that syphilitic infections occur most frequently in the relatively young, *i.e.* between the fifteenth and thirtieth years of life. "My experience shows that arteriosclerosis is found with unusual frequency in young persons, the subjects of syphilitic infection" (Mott, "A System of Syphilis," Vol. 4, page 49). But we seldom think of the possibility of arteriosclerosis before the fortieth year of life; and, finding it in earlier periods, readily attribute its presence to other causes, such as concomitant cardiac or renal disease, overwork, overeating, the diatheses, as the gouty, the rheumatic, etc., other infections or intoxications, or hereditary predisposition. Finding it after the fortieth year of life, we readily account for its presence by age, and if the degree is out of all proportion to the years of the individual either before or after the fortieth year, we usually account for it by one or more of the factors just mentioned. Hence the so-called specificity of arterial disease in syphilitics, the supposed predilection of the virus or its toxins for the vessels of the nervous system and the aorta, the age at which arterial changes naturally occur, and the other factors known to bring about arterial changes have prevented physicians generally from thinking of syphilis as a frequent cause of diffuse vascular disease and utilizing the presence of such findings in the clinical recognition of the syphilitic. Remembering the intensity of the vascular reactions of the aorta and other large vessels and the vessels of the nervous system in the few, the chronicity of the disease and the continuity of the vascular apparatus should cause us to expect the involvement of the peripheral vessels as well in many syphilitics. It would, indeed, be an inexplicable circumstance and one without parallel among the various diseases and factors causing arteriosclerosis if the vascular changes due to syphilis were confined exclusively to the vessels of the nervous system, to the aorta and other large vessels.

My observations in syphilitics during their periods of relative tolerance for the virus have shown the great frequency among them of clinical signs indicative of diffuse vascular changes. Furthermore, my studies have shown the great frequency of such signs in the progeny of syphilitics, even in those having none of the heretofore generally recognized signs of congenital syphilis. I have elsewhere[33] referred to vascular disease as the connecting thread between the syphilitic and

his progeny. My studies have shown that it is the exceptional syphilitic, unless he has had early and persistent treatment, who will fail to disclose a degree of vascular changes beyond his years within the first five years after his infection and, furthermore, that it is the exceptional individual born of syphilitic parents who will fail to show some signs of vascular disease as early as the tenth year of life. Syphilitic vascular disease is, probably, one cause of the frightful antenatal and postnatal mortality among the progeny of syphilitics, and, probably, the main cause of their abiotic natures, their proneness to disease and their lessened expectancy in life, and it is, probably, the main cause of the lowered general resistance in many individuals who have acquired syphilis. My comparative clinical studies of syphilitic families have not infrequently revealed a greater degree of vascular disease in the adolescent members than in either parent. Comparative clinical studies of families will not only enable us to differentiate between the various factors and that of syphilis causing arterial changes, but will also enable us to utilize the presence of such changes in the clinical recognition of both the syphilitic and his progeny. Such studies may be further utilized in showing the etiology of the so-called hereditary predisposition to arterial degenerations and that of juvenile arteriosclerosis, the frequency of which latter condition was first emphasized by Romberg[16] in 1904. Remlinger[17] in 1905, reviewing Romberg's juvenile cases, says: "Concerning the cause of so-called diffuse arteriosclerosis in the young, nothing is known." Rach and Wiesner,[11] who have recently shown the great frequency (50 per cent. of their cases) of changes of the larger vessels in premature and newborn congenital syphilitics suggest the possibility of similar changes in the peripheral vessels as an underlying cause of juvenile arteriosclerosis. Moreover, the frequency with which I have been able to find clinical evidence of arterial changes in the progeny of syphilitics caused me in another place[34] to make the deduction that many of such progeny are born with a degree of vascular disease. My studies made in a comparative clinical way indicate that both hereditary predisposition and Romberg's juvenile arteriosclerosis may not infrequently be traced either to syphilis in the parents or to syphilis in the more remote ascendants. Space forbids my considering here the cardiac manifestations of syphilis, but I may recall the fact that recent serological observations have shown that aortic valvular disease, particularly with regurgitation, is almost if not quite as frequently due to a syphilitic infection as is aortic aneurysm. The presence of a degree of arteriosclerosis beyond the years of the individual cannot always be ascribed to syphilis. Just as we differentiate between the various causes of fever, so must we differentiate between the various causes of vascular disease. Comparative clinical studies of families will often aid us in such differentiation.

Osler has said that it requires not only experience but education to found correct judgments of the arteries. It seems to me that the first step in this direction is to think of the possibility of clinical signs of arterial changes as occurring in any period of life, and the second is to bring to bear in our investigations every means that may aid us in discerning them. Holding fast to the clinical fact that syphilis may be a frequent cause of diffuse vascular disease, let me recall the signs which we ordinarily interpret as indicative of arteriosclerosis and direct your attention to some other signs not so well known and appreciated. Clinical evidence of arteriosclerosis is usually considered ample when two or more of the following findings are demonstrable: Undue palpability of radials and other vessels; undue visible pulsation in brachials, temporals, and other vessels, and undue tortuosity in these; alterations in second heart sounds, especially the aortic, and the determination of the relative size and functional worth of the heart muscle. To these is usually added an estimation of arterial tension with a suitable apparatus though it is of but little value in determining the presence of arteriosclerosis, especially in the relatively young. Ophthalmoscopic studies of the retinal vessels often afford valuable evidence of arteriosclerosis. Perhaps the most important of the usual signs are undue palpability, visible tortuosity, and pulsation of arteries. A detailed description of the methods employed in studying the cardiovascular apparatus would be superfluous here; but the palpation of vessels is such an important procedure in determining the presence of arterial changes that I may be pardoned for calling attention to the necessity of accurate technique even in the frequent and time-honored practice of feeling the pulse.

A moderate sized artery, such as the temporal or radial, when neither thickened nor in a state of spasm, is felt to collapse under increasing finger tip pressure and it is with difficulty differentiated from adjacent structures. When such a vessel is thickened and sclerosed the wall remains more round, the finger tip glides over its rounded surface, and one feels a degree of resistance not present in normal arteries. Sclerosing arteries are frequently unduly tender to firm finger tip pressure, far more so than the adjacent structures, a fact which I have frequently observed in the various periods of syphilis as well as in other conditions associated with arteritis. Wertheim-Salomonson[32] has recently called attention to the value of finger nail palpation of arterial walls, and I can attest the great value of this method when associated with the method of finger tip palpation.

Pallor is one of the signs of advancing years, and is doubtless mainly due in the old to structural changes in the peripheral vessels. Pallor may, therefore, be a sign of arteriosclerosis. Occurring at any period in life, when we can exclude other conditions producing it, such as anemia, nephritis, etc., it becomes a sign of vascular disturbance of great worth. I have already referred to the frequency with which a degree of pallor beyond the years of the individual is encountered in syphilitics and in their progeny, and in such it is usually associated with signs of arteriosclerosis. There are not a few syphilitics, however, who while showing pallor fail to disclose decided evidence of vascular disease or at least a degree of it sufficient to account for the degree of pallor. In such cases we must assume an abnormal degree of contraction (spasm) of the peripheral vessels. That an abnormal degree of spasm is one factor underlying pallor in such cases, as well as in syphilitics showing decided signs of vascular disease, is shown by the prompt disappearance of pallor in some and its decided amelioration in others under specific treatment.

A sign of arteriosclerosis almost constantly present in the old and frequently in the healthiest of us in some degree as early as the thirty-fifth year

of life is that which I have elsewhere[34] described as varnished scleræ. Its chief characteristics are: First, a shiny, glistening, and undulating appearance of the conjunctivæ overlying the sclerotics; second, undue tortuosity and prominence of the conjunctival and episcleral vessels with now and then punctate hemorrages into the conjunctival and episcleral tissues. The presence or absence of varnished scleræ may be easily determined by drawing down the lower lids while the patient is facing the light and directing his gaze upward. In such position one may readily appreciate the appearance of the scleræ and conjunctivæ, their tints, gloss, smoothness, or undulations, and the degree of tortuosity and prominence of the visible vessels. When this sign is well marked the prominent and markedly tortuous vessels seem to lie upon rather than within the conjunctival tissue. Syphilitics and their progeny show this sign with great constancy. The study of the conjunctival and episcleral vessels with the Czapski binocular corneal microscope affords ready means of detecting the earliest changes in these vessels and of getting further corroborative evidence of diffuse vascular disease. Dr. W. H. Luedde[18] has modified this instrument by providing a better illumination and thus enabling a greater magnification. He was the first to systematically employ it in the study of the sclerotic changes of the conjunctival and episcleral vessels. He has called attention to the peculiar oscillatory flow of the blood stream in these vessels without reference to the pulse rate and to the aneurysmal dilatations, the thickening and crinkling of the walls of these vessels in individuals showing clinical evidence of arteriosclerosis. He has even noted the presence of thickening and aneurysmal dilatations in nursing infants. In not a few cases of children and adults studied conjointly with Dr. Luedde in whom pallor and varnished scleræ were the most definite signs of arterial disease, and in many cases in similar periods of life showing in addition gross evidence of arterial disease this instrument in the hands of Dr. Luedde disclosed the changes just mentioned. The constancy with which the conjunctival and episcleral vessels show naked eye changes and the confirmation of such changes with Luedde's modification of the Czapski binocular corneal microscope should cause us to give these vessels routine consideration in our clinical studies of arterial disease.

(c) "The active principle of syphilis which is a poison for the whole system is especially a poison for the nervous system" (A. Fournier).[19] Ranking in constancy with the signs of vascular disease are those signs indicative of a syphilitic infection discernible by a clinical investigation of the nervous system. But the routine examination of the nervous system is an unusual procedure by many physicians in the absence of gross manifestations indicative of its diseases. It cannot be too strongly emphasized that no physical examination is to be considered complete without an investigation of the nervous system in its mental, motor, vasomotor, trophic, reflex, sensory, and sensorial spheres. In doing this we shall often find unmistakable signs of a luetic infection. Of these signs indicative of a leutic infection I shall consider here some pupillary, reflex, and sensory alterations, and only the more constant of these. In further communications I shall furnish data on the frequency of pupillary, reflex, and sensory alterations as well as on the other more subtle signs of syphilis already referred to in this paper, as occurring during the so-called latent periods of the disease. It is sufficient here to call attention to the presence of some of these signs during these periods and to define what is implied by alterations in (1) pupils, (2) sensation, and (3) reflexes.

(1)Alterations in pupils. With negligible exceptions (trauma, tumor, drugs, etc.) the Argyll-Robertson pupil, thanks to the work of Erb,[20] Gowers,[21] Uhthoff,[23] Oppenheim,[22] Nonne,[15] Bumpke,[42] Weiller,[25] Babinski,[26] and others, is now universally considered a sign of tabes, paresis, or syphilis. The A-R pupil is believed to be seldom of sudden occurrence, and that it is almost invariably preceded by sluggish pupillary reactions either to consensual or direct light stimulation, or both. Associated with both sluggish pupillary reactions to light and complete A-R pupils are two other signs; namely, asymmetry in pupillary form and differences in size. So constant is this association that it is unusual to find either sluggish or complete A-R pupils which do not show inequalities or asymmetries, or both. But pupillary inequalties and asymmetries occur with great frequency among syphilitics independently of sluggishly reacting and A-R pupils. My observations are fully in accord with those of Dufour,[27] Joffry and Schramek,[28] Piltz,[29] Babinski,[26] and others in regarding transient and permanent pupillary inequalities and asymmetries of the greatest diagnostic importance. A sign of relative frequency occurring either with or without A-R pupils is the abnormally small pinhead pupils—Erb's spinal miosis. When we can exclude other etiology (anomalous development, synichiæ, etc.) for such signs then their frequent association with sluggishly reacting and A-R pupils justifies the assumption of a common causation and likewise their clinical interpretation as signs of a syphilitic infection.

(2). Sensory alterations. My observations indicate that feelings of fatigue, transient and recurring pain about neck, knees, hip and shoulder girdles, crampy sensations in muscles and parasthesiæ in various parts of the body are frequent complaints of syphilitics during the so-called latent periods and that either hyperesthesia or sensory loss, especially the latter, is discernible with relative frequency during the secondary and with great frequency during the so-called latent periods of the disease. A. Fournier in his "Leçons cliniques sur la syphilis" seems to have been the first to recognize objective sensory disturbance in the secondary periods of syphilis. He states that it occurs rather frequently during these periods in the form of analgesia or associated with anesthesia but that he had not seen anesthesia without analgesia; that the temperature sense is occasionally and the muscle sense exceptionally impaired; that the analgesia varies in degree and distribution at times involving the greater surfaces; that it is usually symmetrical, occurs in islands, patches, most frequently about the upper and lower extremities and often about the dorsal surfaces of the hands and about the breasts and that it disappears with the secondaries under treatment. These splendid observations of Fournier seem to have been wholly neglected by syphilographers and clinicians, and so far as I know, by no other author considered a part of the symptomatology of secondary syphilis. My observations are entirely in

accord with those of Fournier as to the predominating character of the sensory disturbances (hyp- and analgesia) during the secondary periods of the disease. But I have found that similar sensory disturbances occur with great frequency during the so-called latent periods of the disease. It is now universally recognized that hypalgesia and analgesia, both more or less diffuse and in patches but conforming to nerve root distribution, are among the earliest sensory findings in tabes and that disturbances in other qualities in sensation are usually of later development. Accumulated neurological observations on the sensory loss in tabes and general paresis is wholly in accord with Fournier's observations in the secondary and with my own in the so-called latent periods of syphilis; namely, that sensory loss in other qualities does not occur as a rule without loss to pain. Moreover, this is a rule having but few exceptions in organic disease of whatever causation. The practical application of this rule to sensory examinations is obvious. When, let us say, only tactile sensibility is tested, as is so often the case in clinical work, diminution or loss to painful stimuli will be entirely overlooked.

My studies indicate that the examination of the entire surface of the body will disclose in many so-called latent syphilities sensory loss to painful stimuli in the same zones commonly recognized as occurring in tabetics and that similar sensory disturbance will often be found in the same regions in which latent syphilities so frequently complain of transient and recurring pain, *i.e.* about the neck, particularly in C2 and C3; about the shoulder girdle, particularly in C4, C5 and C8, D1 and D2; about the hip girdle, particularly in D12, L1 and L2 and about the outer surface of the knees and legs, particularly in L5 and S1. The frequency with which one may find hypalgesia and analgesia independently of other sensory loss in the secondary and so-called latent periods of syphilis suggests the idea that the virus of syphilis may have a special affinity for the pain conducting or perceiving mechanisms. Remembering the few syphilitics who receive adequate treatment, it seems possible that the sensory loss noted by Fournier in the secondary stages may persist in the many and that sensory examinations might be of service in diagnosis in the early stages of syphilis in those cases characterized by delayed, abortive or absent secondaries. Hypalgesia and analgesia in so-called latent syphilitics often but not always disappear under treatment; whereas in tabetics, as a rule, they remain fixed—permanent. Surface hyperesthesia is occasionally observed in so-called latent syphilitics, but just as in early tabes it usually occurs in patches in juxtaposition to the patches of hyp- and analgesia. Furthermore, in very early tabes and in so-called latent syphilitics, the muscles are often unduly tender and the mechanical irritability of peripheral nerves is not infrequently increased.

Alterations in reflexes: Physiological experiment and clinical observation have shown that the reflex activities of the organism are increased and diminished by whatever increases and diminishes the activity of the central nervous system. Any condition or disease which affects the organism as a whole or the nervous system in particular is usually manifested by alterations in reflex activities. We possess no single means whereby we may so definitely discern general perturbation of the whole organism and at the same time differentiate between health and disease as that afforded by investigating the more constant physiological reflexes. Therefore the testing of each of these should be made a part of every physical examination. The more constant physiological reflexes which may readily be tested are the superficial (skin) reflexes, (1) abdominal, (2) cremasteric, (3) sole, and the deep (tendon and periosteal) reflexes. The last include the knee jerk, the Achilles jerk, the homo- and contralateral hip adductor, the triceps, the biceps, the radial, and the ulnar triceps of Bechterew. Reflex activities fluctuate within wide limits even in healthy individuals, the fluctuation depending upon age, occupation, habits, exercise, rest, etc., so that in considering reflex alterations as signs of disease these and similar factors must ever be kept in mind. Pathological alteration in these physiological reflexes may consist in exaggeration, in inequality, in diminution, in abolition, in disproportion and dissociation.

Dissociation in reflex activity exists when, for example, tendon reflexes are present and skin reflexes are absent or the reverse; disproportion, when either superficial or deep reflexes are relatively more active in one part of the body than in another; diminution, when a reflex is not readily obtained or is still weak when a maximum of stimulation produces a minimum reaction and when controlled by the well-known methods of reinforcement; abolition, when maximum stimulation controlled by all methods of reinforcement fail to elicit the reflex; inequality, when difference is noted in a given reflex between right and left; and exaggeration in reflex activities exists when minimum stimulation produces maximum reactions when the reflexogenous zone of a given reflex is broadened and when associated response occurs in muscles not ordinarily affected by the stimulus.

In addition to the alterations in the physiological reflexes as signs of disease there are other reflexes not occurring in health the presence of which is universally considered signs of organic nervous disease; such as the Babinski, the Oppenheim, the Gordon and Chaddock reflexes commonly referred to as pathological toe reflexes. The interpretation of pathological alterations in the physiological reflexes would, indeed, be an easy matter if they occurred only in association with such signs of organic nervous disease as pathological toe reflexes, rigidities, clonus, motor weakness, tremor, ataxia, and Rombergism; but pathological alterations in the physiological reflexes occur independently of the signs of organic disease just mentioned. Since they do occur independently and since, if neither anomalous nor incident to local conditions, they are signs of disease they must receive consideration and if possible interpretation. The most frequent alteration within the limitations of health and occurring in what we call functional nervous disease and in arteriosclerosis, hyperthyroidism, alcoholism, etc., is that of equal exaggeration, particularly in tendon and periosteal reflexes. Therefore, some line of demarcation at which the pathological begins and the physiological ends is urgently needed by clinicians. In an article by Koloman Keller[30] appearing in 1909 and that of A. Myerson[31] soon to appear this long-felt want receives consideration. Keller studying the homo- and contralateral hip adductor reflexes has gone a long way toward establishing the limitations between

the physiological and the pathological exaggeration of tendon and periosteal reflexes of the lower extremities. Myerson in studying the same reflexes independently of Keller and in addition others not hitherto described, as well as the reflexes of the upper extremities of normal individuals, and comparing his findings in these with the findings in clinical material, mainly in my service at the Alexian Brothers' Hospital, has accomplished the same result for the whole individual. The definition of pathological exaggeration in physiological reflexes given above receives amplification in the articles just mentioned.

One classical sign of tabes is the absence of the knee or Achilles jerk; but studies of preataxic tabes permits the inference that abolition is preceded by diminution and this in turn by exaggeration in tendon and periosteal reflexes. Strümpel has suggested that there is, probably, a period in tabes in which the tendon reflexes are exaggerated. Evidence of this view is to be found in cases of lumbosacral tabes, in which Achilles jerks are greatly diminished or absent, with markedly increased knee jerks or the reverse and in cases where either knee or Achilles jerks are absent. In either case tendon and periosteal reflexes of the upper extremities are often unduly active. As far as my experience goes, the most frequent alterations in physiological reflexes in so-called latent syphilitics are equal and unequal exaggeration, disproportion, and dissociation; while equal and unequal diminution and complete abolition occur less frequently. When one or more of these alterations are found independently of the signs of organic nervous disease before mentioned, in an individual whose medical history and physical state reveal no data to account for them, then the possibility of manifestations of the syphilitic virus should be seriously considered. The clinical recognition of such an individual as a syphilitic borders on a certainty when one or more of the alterations in the physiological reflexes are associated with two or more of the pupillary or sensory alterations before mentioned.

The similarity in the alterations in pupils, sensation and reflexes in the early and so-called latent periods of syphilis, in preataxic tabes and in early paresis is so striking that one may well ask: In what way may these alterations occurring in latent syphilitics be differentiated from similar alterations occurring in paretics and tabetics? The differentiation is not always possible but the degree and the permanence of pupillary, reflex, and sensory alterations, the clinical history and the accompanying symptoms and physical signs are points for consideration. After all, the differentiation is not unlike that between the early and late manifestations of the same disease, a wholly unnecessary differentiation in the clinical recognition of the individual as a syphilitic. That some alterations in pupils, sensation, and reflexes are common to the secondary and so-called latent periods of syphilis, paresis and tabes, differing, if at all, merely in degree and in permanence, establishes beyond question their common foundation and justifies their clinical interpretation as physical signs of syphilis and their utilization in the clinical recognition of the syphilitic. These alterations in pupils, sensation, and reflexes have been so universally regarded as the basic signs of paresis and tabes that we have often failed to look for them except in those cases whose clinical histories pointed to these conditions. In this connection it is well to remember that statistical studies indicate that not more than 5 per cent of syphilitics become either tabetic or paretic. The great number of syphilitics who are either relatively healthy or who are suffering from so-called functional neuroses or psychoses or from various internal disturbances and diseases, in whom alterations in pupils or sensation or reflexes are found, for which other causation than syphilis can be definitely excluded, should cause us to regard these alterations as signs of a syphilitic infection. Therefore, if these alterations occur in other syphilitics than in paretics and tabetics, then their appreciation as physical signs of syphilis will go a long way toward the certain clinical recognition of syphilitics who are neither paretic nor tabetic.

Finally, *an appreciation of the whole individual* in connection with recurring constitutional manifestations; with pallor and vascular changes to a degree out of all proportion to the years and nutritional state of the individual; with pigmentations and with alterations in pupils; sensation, and reflexes will, I believe, place *the clinical recognition of so-called latent syphilitics*, like that of tabetics and paretics, among the certainties of clinical medicine.

REFERENCES.

1. Lambkin: Article in "A System of Syphilis," Vol. II, p. 339.
2. Hutchinson, J.: "Syphilis," 1910.
3. Shillitoe: Article in "A System of Syphilis," Vol. I, p. 270, 1908.
4. Benda: "Pathologische Anatomie," Asschoff, Bd. II, s. 72.
5. Osler: Osler's "Modern Medicine," Vol. 4, p. 431.
6. Osler and Churchman: Osler's "Modern Medicine," Vol. 3, p. 483.
7. Mott: Article in Allbutt's "System of Medicine," Vol. VI, p. 294; "A System of Syphilis," Vol. IV.
8. Chiari: *Wiener klinische Wochenschrift*, 1881, Nos. 17 and 18; "Verhand. Naturforscher," 1903.
9. Wiesner, R.: *Centralblatt für Pathologie*, Bd. XVI, s. 822.
10. Bruhns: *Berliner klinische Wochenschrift*, 1906, s. 217.
11. Rach & Wiesner: *Wiener klinische Wochenschrift*, 1907, No. 18.
12. Strümpel: *Deutsche medizinische Wochenschrift*, 1907, s. 1931.
13. Fränkel: *Wiener klinische Wochenschrift*, 1896, s. 147.
14. Heubner: "Die luetische Erkrankungen der Hirnarterien, etc. Leipzig, 1874; *Charité-Annalen*, XXVI, Jahrg.
15. Nonne: "Syphilis und Nervensystem," Berlin, 1909.
16. Romberg: "Handbuch d. prak. Med.," Bd. I, s. 755; "Verhand. d. Kong. f. I. Med.," 1904, s. 60.
17. Remlinger: "Zur Statistik der Arteriosklerose," Marburg, 1905.
18. Luedde, W. H.: *Archives of Ophthalmology*, Vol. IV, 1911.
19. Fournier, A.: "Treatment and Prophylaxis of Syphilis," 1906, p. 206; "Leçons cliniques sur la Syphilis," Paris, 1881; "Les Affections parasyphilitiques," 1894.
20. Erb: *Berliner klinische Wochenschrift*, 1904, Nos. 1, 2, 3, 4; "Gesammelte Abhandlungen," 1910.
21. Gowers: "Diseases of the Nervous System."
22. Oppenheim: "Syphilitiesche Erkrankungen des Gehirns," Wien, 1903; "Lehrbuch der Nervenkrankheiten," Berlin, 1908.
23. Uhthoff: *Berliner klinische Wochenschrift*, 1886, s 55.
24. Bumpke: "Die Pupillenstörung," etc., Jena, 1911.
25. Weiler: *Zeitschr. f. d. ges. Neurol. u. Psychol.*, 1910.
26. Babinski: *Bulletin des Hôpitaux*, Paris, Mai, 1901; et Charpentier: *Annales de l'Oculist*, 1901.
27. Dufour: *Neurol. Centralbl.*, 1903, s. 446.
28. Joffroy et Schramek: *Revue Neurologique*, 1902, p. 275.
29. Piltz: *Neurol. Centralbl.*, 1903.
30. Keller: *Deutsch. Zeitschr. f. Nervenheilkunde*, 1909, Bd. 37, s. 49.

31. Myerson, A.: *Archives of Internal Medicine*, July, 1912.
32. Salomonson-Wertheim: *Deutsch Archiv f. klin. Med.*, 1910, Nos. 4-6.
33. Graves, W. W.: Medical Record, May 21, 1910.
34. *Ibid.*: *Journ. A. M. A.*, July 2, 1910.
35. *Ibid.*: *Interstate Med. Journ.*, January, 1911.
36. *Ibid.*: *Medizinische Klinik*, No. 8, 1911; *Deutsch. Zeitschr. f. Nervenheilkunde*, 1911, Bd. 41.
37. *Ibid.*: Transactions of the Nat'l Assn for the Study of Epilepsy, etc., 1911; *Wiener klinische Wochenschrift*, 1912, No. 6.

THE IMPORTANCE OF HISTORY IN THE DIAGNOSIS OF INCIPIENT TUBERCULOSIS.

By JOHN M. CRUICE, A.B., M.D.,

PHILADELPHIA.

PHYSICIAN TO THE HENRY PHIPPS INSTITUTE OF THE UNIVERSITY OF PENNSYLVANIA, THE WHITE HAVEN SANATORIUM AND TO THE OUT-PATIENT DEPARTMENT OF ST. AGNES' HOSPITAL; INSTRUCTOR IN MEDICINE AT THE UNIVERSITY OF PENNSYLVANIA; FELLOW OF THE COLLEGE OF PHYSICIANS OF PHILADELPHIA.

Much has been written upon the diagnosis of incipient tuberculosis, and in many articles great stress has been laid upon the importance of taking a careful detailed history of the case, and of properly interpreting the facts when obtained. But from my experience with the type of case we receive at the White Haven Sanatorium classified as incipient tuberculosis, and from the cases who have been treated for months and then come to the Phipps Institute to find out if they have tuberculosis, I am sure there are many whose lives will be saved if the practitioner be more alert and give more attention to the history of the case.

It is wrong, when one obtains a history more or less typical of tuberculosis which cannot be accounted for by some other pathological condition, simply because one is unable to elicit physical signs of the lesion, to assure the patient that he has no tuberculosis and permit him to go on his way rejoicing. The case should be watched and studied most carefully, repeated examinations should be made, and no trouble spared to clear up the diagnosis; it is so important for the future welfare of the patient that the diagnosis should be made as early as possible. If more attention were paid to the history of the case, and the profession at large were less timorous about making a diagnosis of tuberculosis, I am sure there would be more cases recovering from and fewer developing tuberculosis.

In going over the case records of the Phipps Institute I was greatly impressed with the number of cases who seemed to me to have typical histories of tuberculosis, that were diagnosed either non-tuberculous or some other condition. I thought it might be instructive, and I knew it would be interesting, to try to investigate the present condition of these cases. For this investigation I took all the cases coming to the Institute from January 1, 1907, to February 1, 1908, that were not diagnosed tuberculous. No attention was paid to whether their histories were suggestive or not of tuberculosis. In all there were one hundred and sixty-three cases.

Letters, inquiring as to their state of health, were sent out to these one hundred and sixty-three cases, each letter containing a stamped directed envelope and a blank as follows:

"Replying to your request for information about ....., I would report that this patient is .....

"Very truly yours,"

These letters were sent out principally to locate, if possible, the present whereabouts of the patient and to obtain what information we could concerning them. As the class of patients were of the poorest, I did not expect to get very large returns. Sixty-five letters were returned by the post-office as unable to be located. Of the remaining ninety-eight I was able to get definite reliable information about only fifty.

Of these fifty cases I personally examined thirty, five returned to the dispensary and were definitely diagnosed tuberculous, definite information was given at the Institute about three, the record of the death of four was obtained at City Hall, the records of other hospitals (Children's Hospital and White Haven Sanatorium) gave information about three, the death of three was reported by letter, the death of one was reported by a nurse from the Phipps Institute who helped me to investigate, and the condition of one child was reported by the doctor in attendance.

Sixteen of these fifty cases can be said to be non-tuberculous, twenty-three are undoubtedly tuberculous and eleven have died, four of these eleven having died of tuberculosis. The remaining seven died of the following causes: Asthma, 2; cancer of stomach, 1; perforated typhoid ulcer, 1; pneumonia, 1; whooping cough, 1; unknown cause, 1.

In two of these eleven cases, one dying of tuberculosis and one dying of whooping cough, there is reason to doubt the diagnosis on the death certificate. The one dying of tuberculosis, a colored man, aged thirty-one, who gave a history of pain in chest for a year, dyspnea on exertion, a few night sweats, edema of feet and loss of weight, when examined at the Institute was found to have all the signs of mitral stenosis and regurgitation and no sign of tuberculosis. As mitral stenosis is not infrequently diagnosed tuberculosis it is only fair to allow that the ultimate diagnosis is open to doubt. On the other hand the case supposed to have died of whooping cough was a woman of thirty years of age whose condition was diagnosed at the Institute as asthma and bronchitis, notwithstanding a history of direct exposure, previous attack of pleurisy, cough for five years with considerable yellowish white sputum, hemorrhage from the lungs, dyspnea on least exertion, poor appetite, gastric disturbance, occasional night sweats, edema of legs and face, suppressed menses, leucorrhea, loss of forty-four pounds in weight in a year and a half, and temperature as high as 100.8. The chest was full of râles with slight impairment marked over right upper lobe. Fifteen months after these facts were obtained at the Institute she is said to have died of whooping cough!

So we have twenty-seven out of fifty cases, diagnosed four or five years ago non-tuberculous, who have either died of the disease or have at present undoubtedly tuberculosis. When we remember that these diagnoses were made by men more or less trained in tuberculosis, who were examining the patients especially for that condition, but who from the fact that they could elicit no physical signs, were unable or unwilling to make a diagnosis of tuberculosis, I think it emphasizes very markedly the importance that should be given to the history of a case in making a diagnosis.

The sixteen non-tuberculous cases were diagnosed in 1907 as follows: Non-tuberculous, 5; normal, 3; pertussis, 1; adenitis, 1; imperfect metabolism, 1; neurasthenia, 1; chronic gastritis and anemia, 1; chronic pharyngitis and tonsillitis, 1; pleuritis, 1;

emphysema and bronchitis, 1. The twenty-three tuberculous cases were diagnosed as follows: Non-tuberculous, 10; bronchitis, 4; acute bronchitis, 2; chronic bronchitis, 1; adenoids, rhinitis, subacute bronchitis, 1; adenoids, 2; hepatic calculi, 1; slight pleural thickening, 1; asthma, 1. The four cases dying of tuberculosis were diagnosed as follows: Mitral stenosis and regurgitation, 1; enlarged tonsils and adenoids, 1; muscular rheumatism, 1; pregnancy, 1. The other seven cases that died were diagnosed as follows: Asthma and bronchitis, 1; asthma and deflected nasal septum, 1; bronchitis, 1; mitral stenosis and regurgitation and chronic pleurisy, 1; emphysema, 1; emphysema and chronic bronchitis, 1; non-tuberculous, 1.

In analyzing the histories of these fifty cases, I shall divide them into two groups: Group A, the twenty-three who are now tuberculous and the four who died of tuberculosis; and Group B, the sixteen who are non-tuberculous and the seven that died of other causes than tuberculosis.

In Group A there was a history of direct exposure to tuberculosis in fourteen cases, no exposure in eleven cases and no record in two cases; in Group B a history of direct exposure in eight cases, no exposure in fourteen and no record in one case. In other words, in Group A there was a history of exposure in fifty-six per cent. of the recorded cases in comparison to thirty-six and three-tenths per cent. of the recorded cases of Group B.

This history of exposure should be gone into very thoroughly, because if obtained, it is a most valuable aid to diagnosis; and as Norris has put it, "It will not do merely to inquire if any of his immediate family have died of tuberculosis and be satisfied with a perfunctory yes or no; we must go into details, and by careful questioning we will often learn that a death which has been ascribed to influenza, menopause, confinement, pneumonia, bronchitis, typhoid fever, was preceded by many months of illness, was accompanied by loss of weight, night sweats or hemorrhage, was in fact an unrecognized, or by a curious paradox on the part of our patient, purposely concealed tuberculosis." The hunt for a source of infection should not stop with inquiries about the immediate family but should be carried further and the patient questioned carefully about his associates, both social and business, about the workshop and about his dwelling.

In Group A there was a history of cough in nineteen cases of the twenty-five in which the symptom was recorded. In six of these cases the cough had continued for three months and less than six, in two cases for six months and less than a year and in five cases for a year or longer. In Group B there was a history of cough in sixteen cases of the twenty-one in which the symptom was recorded. In two of these the cough had lasted for six months and less than a year and in nine cases the cough had lasted for a year or more.

Cough is usually one of the earliest symptoms and persists throughout the course of the disease. However, it must not be forgotten that some cases have more or less advanced disease before any cough appears. A cough that lasts for two months or more and that cannot be explained by some general or local condition should always be looked upon with grave suspicion.

In Group A in twenty-six recorded cases there was hemoptysis in eleven (frank hemorrhage in five, blood-streaked sputum in six). In Group B in eighteen recorded cases there was hemoptysis in four (frank hemorrhage in one, blood-streaked sputum in three). The one case in which the frank hemorrhage occurred was the woman I have already spoken of as having died of whooping cough. Of the three cases of blood-streaked sputum, two occurred among the seven that died of other causes than tuberculosis, one being the case of mitral stenosis and regurgitation, and the other being the one with emphysema and chronic bronchitis. The other one remaining case of blood-streaked sputum occurred in a boy of eighteen who had naso-pharyngeal catarrh, and who told me, when I examined him, that he still at times spits up blood-streaked sputum which comes from his nose.

Hemoptysis is probably the most pathognomonic symptom we have of pulmonary tuberculosis. Austin Flint in 1875 said, "Hemoptysis, the hemorrhage limited to the bronchial mucous membrane, and not dependent on disease of the heart, or on an injury of the chest, is always presumptive evidence of existing pulmonary disease." A little further on he says, "Hemoptysis occurs in some cases where not only the symptoms of pulmonary disease are wanting, but the result of physical explorations of the chest is negative. In a certain proportion of these cases it is probable that the hemorrhage is connected with a small affection which is latent as regards both symptomatic phenomena and physical signs." Osler mentions a study of Franz Stricker's of nine hundred cases of hemoptysis occurring in the Prussian Army. He says, "Among the conclusions that Stricker draws, the following are the most important, namely, that soldiers attacked with hemoptysis without special cause are in at least eighty-six and eight-tenths per cent. tuberculous. In the cases in which the hemoptysis follows the special exercises, etc., of military service at least seventy-four and four-tenths per cent. are tuberculous. In the cases which come on during swimming or as a consequence of direct injury to the thorax, about one-half are not associated with tuberculosis." I believe a safe working basis is to regard all cases of hemoptysis as of a tuberculous origin until proved otherwise.

Pain in the chest was observed in twelve out of twenty-three cases in which the symptom was recorded among the cases in Group A. In Group B it was observed in thirteen out of twenty cases.

The presence or absence of dyspnea was recorded in twenty-four cases in Group A and was present in twelve. Of these twelve, one case complained of dyspnea at night and the other eleven after exertion. In Group B dyspnea was present in fourteen out of twenty cases in which the symptom was recorded. Marked dyspnea usually comes on late in the disease but patients often suffer from slight dyspnea after exertion when the disease is in its incipiency; at times it is what first calls attention to their condition of health.

Temporary hoarseness was present in Group A in nine out of twenty-three recorded cases and in Group B in eight out of twenty recorded cases. There was no case in either group which gave a history of prolonged hoarseness. As a rule prolonged hoarseness comes on late in the disease, but any case with a history of prolonged hoarseness or repeated attacks of temporary hoarseness should be examined and watched with the greatest care.

There were gastric disturbances in seven of the twenty-three cases of Group A in which the gastric condition was recorded. In Group B, eight cases out of twenty had gastric symptoms.

Chills were present only in three cases of the eighteen recorded cases in Group A and in two cases of Group B out of the four that had the symptoms recorded.

Seven out of twenty-four cases in Group A had a history of night sweats and eight out of twenty cases in Group B.

The weight was recorded in sixteen cases of Group A, thirteen of them showing a definite loss. In Group B, nine out of fifteen recorded cases showed a loss of weight.

Fever was present in nineteen of the twenty-six cases of Group A in which there was a record of the symptom; and in Group B, it was present in fifteen cases and absent in eight.

Four cases in Group A out of the twenty-three in which the fact was noted had a history of a previous pleurisy and the same number in Group B out of the twenty-two recorded cases had had pleurisy. A history of pleurisy is always more or less of a suspicious fact when we remember that from eighty to ninety per cent. of all pleurisies are due to the tubercle bacillus.

Several of the cases in the two groups had histories of having had pneumonia, typhoid fever or influenza. But a history of these diseases is not suggestive unless you get a history of repeated attacks of any one of them. Patients sometimes tell you that they have had two or more attacks of pneumonia, or that they have had an attack of influenza every winter for some years. These attacks were probably not pneumonia or influenza but acute exacerbations of their tuberculosis. Another most suspicious history is that of typhoid pneumonia, either one attack or more. What exactly is meant by typhoid pneumonia is open to argument. It may be a case of typhoid fever developing pneumonia, or it may be a pneumonia which has a protracted course and the patient is in a typhoid state, but by careful questioning it will often be found to have been an attack of acute tuberculosis from which the patient has recovered.

In closing let me add that I am not pleading for the diagnosis of tuberculosis to be made from the history alone. Only that when the physician gets a history, not of one of the foregoing symptoms but of a combination of two or three or more of them, that he leave no stone unturned until a definite diagnosis is made either of tuberculosis or of some other condition which will account for all the symptoms. If he is unable, after repeated examinations, to solve the problem, and the history is suspicious, he should allow his patient to have the benefit of the doubt and put him on treatment for tuberculosis, which treatment can be carried out at home without seriously inconveniencing his patient, and I am sure will be attended by results most gratifying to the patient as well as to the physician himself.

1815 Spruce Street.

CORONARY SCLEROSIS WITH SPECIAL REFERENCE TO GASTRIC SYMPTOMS.

By I. W. HELD, M.D.,

NEW YORK.

ADJUNCT ATTENDING PHYSICIAN, HAR MORIAH HOSPITAL; ATTENDING PHYSICIAN, HAR MORIAH HOSPITAL DISPENSARY.

In the sense used by Cohnheim[1] the coronary arteries are terminal vessels inasmuch as their branches do not anastomose with each other sufficiently to maintain perfect circulation. In experimental ligations of the branches of the coronary arteries in cats and dogs, carried out in Porter's laboratory, Walter Baumgarten[2] demonstrated the following facts: (1) Ligation of the ramus descendens caused infarction in the anterior wall of the left ventricle, anterior papillary muscle, left half of the interventricular septum. (2) Ligation of the ramus circumflex caused infarction of the apex, posterior papillary muscle, a portion of the right ventricle, posterior wall of the left atrium, posterior one-third of septum. (3) Ligation of the right coronary artery caused infarction of a part of the right ventricle and the posterior portion of the appendix atrii. The nerve supply of the coronary arteries was demonstrated by Maas, who showed that vasoconstriction is exerted by the vagus, and vasodilatation by the accelerator nerves. Scaramucci's experimental demonstration in 1689 that the coronary vessels are emptied during diastole of the heart, thereby nourishing the organ, was confirmed by Porter[3] and his pupils.

The clinical picture of coronary sclerosis was already known to the ancients. Seneca, who himself was a sufferer from its attacks, described the symptom complex under the designation of "precellæ similis." The pains would start under the sternum and radiate down both arms, and he felt like losing his senses. Morgagni even described the autopsy of a man whose symptoms before death were those of coronary sclerosis as follows: "The inner surface of the aorta was studded with numerous elevations and pustules, the latter extending to the coronary arteries, one of which was entirely occluded." Other cases have been described by Hoffmann, but none of the older authors considered coronary sclerosis as an independent disease. It was not until 1786 that Rougnon, a physician of Besançon, gave an excellent description of the disease which five months later was followed by the famous article of Heberden who designated the symptom complex as angina pectoris, calling particular attention to the importance of not confounding the same with dyspnea. Hunder, the great clinician, who was himself a victim of the disease, shortly afterward gave a very exact description of the affection. However, it was left for Jenner to show the full pathogenic significance of the association of angina pectoris with coronary sclerosis, whose views were supported by the greatest clinicians of those days, chief among whom were Parry and Kreysing, the latter advancing the explanation that the heart muscle, being poorly nourished owing to coronary sclerosis, was unable to perform the extra task thrown upon it, thus explaining the occurrence of attacks on the slightest exertion.

Numerous other theories were promulgated to explain the symptoms of coronary sclerosis. One that deserves special mention is that by Reeder, an English author, who attributed them to ischemia of the heart muscle. Lussana, in 1858, advanced the theory that mechanical irritation of the cardiac plexus was responsible. Potain,[4] the famous clinician, in 1870, supported Reeder's view. Since then no epoch-making theories have been brought forth until of late the symptoms were attributed to lesions in the plexus of the nerves. This view has been supported by autopsy findings, as will be shown presently.

The pathological changes are almost invariably the following: The coronary arteries are irregularly dilated; their walls are thickened and their lumen is narrowed in many places; sometimes one

or the other of the coronary arteries is completely occluded. Microscopically sclerotic and connective tissue changes are found. The membrana elastica is found split in many places and sometimes completely occluded. The cells of the intima show fatty degeneration. The heart changes are variable, for which reason von Leyden[5] subdivides the same into four groups: (1) When the patient dies of an intercurrent disease, coronary sclerosis is only accidentally found, and the heart muscle shows neither macroscopical nor microscopical changes. (2) Myomalacia cordis (Ziegler), where one or the other of the coronary arteries is found completely obliterated, causing areas of softening and infarction in different portions of the heart muscle. (3) Myodegeneratio fibrosa, where the disease is of long standing; the heart muscle has undergone changes of repair, showing areas of fibrous tissue with white scars, mostly around the apex of the heart. (4) Mixed changes, where areas of infarcts are seen in some places, while in others there are changes of connective tissue formation. Efforts were made to find lesions in and about the cardiac plexus with a view to substantiating the above-mentioned nerve theory, and in this connection Lancereaux'[6] findings are worthy of mention. He describes the case of a man, 45 years of age, who suddenly died of angiosclerosis, in whom not only the usual findings were present, but also exudates in the fibers of the cardiac plexus. Similar observations were published by Heine, Haddon, Peter, Bareté and others.

Symptoms.—The most frequent clinical picture of coronary sclerosis is undoubtedly that of angina pectoris, characterized by the following symptoms: Sudden oppression behind the sternum, as if, as Hunter expresses it, the sternum were drawn to the spine; a feeling of strangulation with fear of impending death; severe pain in the sternum, sometimes in its lower and sometimes in its upper part. The pain is so severe that, should the patient be attacked while walking, he is afraid to move on. The pain usually radiates from the left shoulder down the arm and fingers, which feel numb. Sometimes it radiates down the right arm, or both arms, and fingers. The face is pale and usually covered with cold perspiration. There is often a flow of saliva, and the attack is often preceded by polyuria. The pulse is usually of high tension, irregular and slow; in fact, the severest types of bradycardia have been observed during a paroxysm of angina pectoris. At times, however, the pulse is quick and regular; at other times it shows no changes at all. With a favorable termination the patient usually belches gas, and feels collapsed for hours. Very often the first attack ends fatally. Arthur Douglas Hirschfeld[7] holds coronary sclerosis sometimes responsible for paroxysmal tachycardia; precordial pain, and sudden death without any previous symptoms, probably due to the presence of sclerosis for some time past, and to sudden arrest of the function of the heart muscle, causing death from thrombosis of the sclerosed artery. Often, however, *gastric disturbances* are the only complaint during life, while the real cause is sclerosis of the coronary arteries. The literature contains cases cited by von Leyden,[5] Pauli, and Kaufmann,[8] Dickinson, Broadbent,[9] Cabot, and others, where the symptoms were of a purely gastric nature, while the autopsy revealed coronary sclerosis as the cause of death.

Furthermore, there is a certain set of abdominal symptoms which are designated angina abdominalis, and are referable to arteriosclerosis. Usually these symptoms are as follows: The majority of the patients are males, well above 40. There is more or less continuous pressure in the epigastrium, particularly after meals. There is often a boring sensation, radiating up under the sternum, which, however, is not dependent upon meals, but rather due to psychic disturbance, or exertion. There is also a marked sensation of fullness after meals with slight dyspnea, and inability to lie down after meals owing to palpitation of the heart. Frequently there is nausea, but no vomiting. Severe paroxysms of pain with a sensation of impending death are not infrequent, and a number of cases of sudden death have occurred in this condition. The writer recollects two such cases where sudden death occurred with all the signs of epigastric pains, while the underlying cause was arteriosclerosis. The bowels are usually irregular; constipation is the rule.

A careful examination of the cardiovascular system will show that the blood pressure is usually high, 200 and higher; apex beat in the mammillary line to the left of the sternum; first sound muffled; or there may be a slight systolic murmur; the second aortic sound is strongly accentuated; face is usually pale. These symptoms should lead to the suspicion of central sclerosis, which is often justified, and well rewarded by corresponding treatment along this line. It is needless to say that the gastrointestinal tract should be thoroughly examined, as affections in this region may be associated with coronary sclerosis. It is only recently that Heinrich Citron[10] reported a case where autopsy disclosed the presence of duodenal ulcer associated with coronary sclerosis.

I may mention two cases from my own observation in which coronary sclerosis occurred with pronounced gastric symptoms.

Case I.—A.F., 53, barber. Previous history negative. Was perfectly well up to two years ago, when there was a sudden sensation of discomfort in the epigastric region. At first this occurred only after heavy meals, but later there were boring pains after light meals or no meals at all, also, and particularly so, after exertion. Appetite variable, bowels usually constipated. Patient also had severe attacks of gastric pains. A very careful examination of the gastrointestinal tract revealed nothing abnormal. Not so the vascular system: blood pressure 210 maximum, 190 minimum; apex beat weak, best palpable in the fifth interspace to the left of the mammillary line; on auscultation there was a very weak first and accentuated second aortic sound. This led me to suspect that the gastric symptoms were due to coronary sclerosis, and treatment was instituted accordingly with satisfactory results.

Case II.—L.G., 49, bookkeeper. Complained of symptoms similar to those in the first case. There were no objective findings in the gastrointestinal examination, while the blood pressure was 170 maximum and 145 minimum; there was a slight systolic murmur at the apex, not transmitted, with an accentuation of a second aortic sound, associated with a slight systolic murmur at the aorta. Taking these facts as well as the early age for sclerosis into consideration, I was led to suspect syphilitic infection, but the Wassermann test proved negative. I therefore instituted on general principles the treatment for coronary sclerosis, resulting in decided improvement.

Following are the reports of three other cases with autopsies which I had occasion to witness in Berlin last winter:

Case III.—J.B., 44, laborer, admitted to the Friedrichhain Hospital, Berlin, department of Professor Kroenig. There had been gastric disturbances for several months, high blood pressure, a second accentuated aortic sound with first muffled sound in the apex. After patient had been in the hospital for eight days he had a sudden attack of pain in the epigastric region, during which he spastically clutched his hands over the abdomen and expired. Autopsy by Professor Pick: Endarteritis deformans, coronary arteries markedly sclerosed. Arch of the aorta showed atheromatous changes, the heart muscle degenerative changes. Gastrointestinal tract as well as biliary passages perfectly normal.

Case IV.—N.R., 52, laborer. Gastric symptoms as in last case. Apex of the heart in the fifth interspace palpable in the left mammillary line; slight systolic murmur; blood pressure 190 maximum, 165 minimum. On the fifth day of his stay in the hospital there occurred a severe attack of gastric pain with fatal termination. Autopsy by Professor Pick: Left coronary artery completely occluded. Fibrous tissue of papillary muscle increased; aortic valves covered with calcareous deposits; absolutely no changes in gastrointestinal tract or biliary passages.

Case V.—Woman, 52, admitted to the Kaiserin Augusta Hospital, service of Professor Ewald. No complaints except of gastric origin. Hyperacidity. The cardiovascular findings during life were not very characteristic of coronary sclerosis, and the blood pressure was only 150. There was a slight increase or broadening of the aorta. After two weeks' stay in the hospital she succumbed to an attack of severe epigastric pain. Autopsy by Professor Oesterreich: Atheromatous deposits in the aorta. Erosions of the aorta extend to the coronary arteries, one of which was completely occluded. Gastrointestinal canal and biliary passages absolutely normal.

To explain the gastric symptoms in the presence of coronary sclerosis, various theories have been advanced. Kaufmann and Pauli[8] explain the same as follows: The disease of the inner layer of the blood vessels causes vascular colic ("Gefässkoliken," Nothnagel),[11] originating in the affected vessel and radiating to the abdomen. Buch[12] explains the symptoms as hyperesthesia of the sympathetic plexus. Other authors consider the abdominal pains to be due to ischemia of the gastric mucosa, analogous to dysbasia angiosclerotica (Erb)[13] of the lower extremities. This explanation would justify the designation of angina abdominalis.

Treatment.—The object of the treatment is twofold: (1) to prevent recurrent attacks during the intervals and (2) to combat the attacks, when present. To meet the first indication, the treatment should be directed to the etiology of the disease, and considering that syphilis, gout, diabetes, excessive indulgence in alcohol and meat diet (Bishop) and mental overwork are often instrumental in causing this affection, the first step should be to remove the underlying cause. As a prophylactic measure, it is necessary to forbid excessive exercise, overloading the stomach, walking against the wind, psychic emotion, and so on. The food should be easily digestible and nonfermentative; small quantities at frequent intervals are in order. It is advisable to put the patient for a short time on an exclusive lactovegetable diet; later, when meat is allowed, it should not be given more than once a day, and plainly prepared. Special care should be taken to restrict proteid food. Any indication of indicanuria should be closely watched, as Bishop[14] has shown that prevention of the same will markedly benefit the sclerotic condition of the coronary arteries. Should indicanuria persist, or should there be a tendency to gastrointestinal fermentation, tablets containing lactic acid bacilli, kefir, or buttermilk should be included in the diet. Alcohol and tobacco should be avoided. If the myocardium shows gross changes which are readily recognized, or minor ones as disclosed by the functional tests devised by Herz,[15] and Hoffmann,[16] or in the presence of kidney insufficiency and slight tendency to edema of the lower extremities during the day, to disappear at night, the salt tolerance of the patient should be determined by the procedure so ably worked out by Professor H. Straus.[17] In the presence of salt intolerance, salt in the diet should be restricted or entirely excluded for some time. If the patient is able to afford it, he should stay in a warm climate during the winter; otherwise he should remain indoors in inclement weather.

As to hydrotherapeutic measures, the patient should be cautioned against extreme temperatures of the water, and against staying in the bath too long. The temperature should range between 98° and 102°, and the time between 15 and 20 minutes. The bath should be followed by light massage. Hasenbroek[18] and also Oertel advocate massage of the heart, while A. Fraenkel[19] wishes to limit the same to very mild cases. As to carbonic acid baths, great caution should be exercised. They should only be given under competent supervision with strict observation of the temperature, which should begin at about 90° and gradually lowered to 80°. The bath should not last longer than 10 minutes at first; later it may be increased to 15 or 20 minutes, three times weekly, followed by light Schott exercises and rest for at least two hours. The blood pressure before the bath should be neither too high nor too low, and the effect of the bath must be such as to lower the blood pressure. Nor should the bath be taken immediately after meals; 1 hour after light meals or 3 hours after heavy meals should be allowed to elapse. Electric baths, in the form of 4-cell battery with hand and feet in water have been used. The high frequency current has of late been used by Laqueur[20] in the Virchow Hospital, Berlin, and he claims that they are effective in reducing the blood pressure and thereby relieving the symptoms. The method deserves a trial, coming as it does from such a reliable observer.

As to drugs, diuretin and iodides have proved the most useful. The former is given in 10-grain doses three times daily for two months; the latter, in the form of sodium iodide preferably, in 10- to 15-grain doses three times a day for six to eight weeks. In cases which do not tolerate sodium iodide, one of the newer compounds of iodine may be tried. Where blood pressure persists high, some of the nitrites, especially sodium nitrite, have been advised by Egbert Le Fevre as being a valuable drug in this condition.

To relieve the attacks, a hypodermic injection of morphine is often indispensable, and although its use has been disputed for a long time, the general opinion now is that its use is indicated and that there is no danger in administering it. Another drug that gives good results is amyl nitrite in pearls which are crushed and held in a handkerchief against the patient's nose for inhalation. One or two pearls, con-

taining three minims each, may be used. The vasodilatation it produces is shown by the flush in the patient's face and by its immediate relief. Counter-irritation to the chest and hot mustard footbaths are often beneficial. Carl Pototzky[21] has inaugurated partial carbonic acid baths ("Hafussi baths"—hand and foot baths) which are given by immersing the hands and feet in hot water impregnated with carbonic acid. These baths have afforded great relief.

REFERENCES.

1. Cohnheim, J.: "Über die Folgen der Kranzarterienverschlüsse für das Herz," *Archiv für pathologische Anatomie,* Berlin, 1881, Vol. 85, p. 503.
2. Baumgarten, Walter: "Infarction in the Heart," *American Journal of Physiology,* 1899, Vol. II, p. 243.
3. Porter: "On the Result of Ligation of the Coronary Arteries," *Journal of Physiology,* Camb., 1894, Vol. XV, p. 121.
4. Potain: "Anémie," in Dictionnaire Encyclopédique des Sciences Médicales, 1870.
5. von Leyden: "Über Herzaffektionen in Tabes Dorsalis," *Zeitschrift für klinische Medizin,* 1887, Vol. I.
6. Lancereaux: "De l'altération de l'aorte et du plexus cardiaque dans l'angine de poitrine," *Comptes-rendus de la Société de Biologie,* Paris, 1864, Vol. 15, Nos. 4 and 5.
7. Hirschfelder, Arthur Douglas: "Diseases of Heart and Aorta," 1910.
8. Pauli and Kaufmann: "Zur Symptomatologie der Stenokardie," Ref. *Wiener klinische Rundschau,* 1901, No. 41.
9. Broadbent: "Diseases of the Heart."
10. Citron, Heinrich: "Vorträge über Pathologie und Therapie der Verdaurengskrankheiten," *Beihefte Deutsche medizinische Klinik,* Vol. VII, No. 8.
11. Nothnagel: "Angina Pectoris vasomotoria," *Deutsches Archiv für klinische Medizin,* Leipzig, 1867, Vol. III, p. 309.
12. Buch: *Archiv für Verdauungskrankheiten,* 1904, Vol. X.
13. Erb: "Dysbasia angiosclerotica," *Münchener medizinische Wochenschrift,* 1904, Nos. 20 and 21.
14. Bishop, L. F.: "Indicanuria in Arteriosclerosis," *New York Medical Journal,* Sept. 9, 1911.
15. Herz, M.: "Eine Funktionsprüfung des kranken Herzens," *Deutsche medizinische Wochenschrift,* 1904, Nos. 22 and 23.
16. Hoffmann: "Funktionelle Diagnostik und Therapie der Erkrankungen des Herzens," Wiesbaden, 1911.
17. Straus, H.: "Praktische Winke, für die chlorarme Ernährung," Berlin, 1910.
18. Hasenbroek: "Über die Behandlung der Angina Pectoris u. verw. Zust. d. Heilgymn. u. Massage," *Archiv für klinische Medizin,* Vol. 86, p. 565.
19. Fraenkel, A.: "Angina Pectoris," Verhandlungen des X Congress.
20. Laqueur, A.: "Über die therapeutische Anwendung von Hochfrequenzströmen," *Therapie der Gegenwart,* January, 1911.
21. Pototzky, Carl: "Kohlensaure Teilbäder," *Deutsche medizinische Wochenschrift,* 1909, No. 7.

57 East Seventh Street.

THE MEDICAL SUPERVISION OF SCHOOL CHILDREN IN SOUTH MANCHESTER, CONN.

By THOMAS G. SLOAN, M.D.,

South Manchester, Conn.

Special Examination for Physical Defects.—In the fall of 1906, 72 children out of over 1600 were found to be a year or more behind their grade. Twenty-one of these were either non-English speaking or had been irregular in their school attendance, leaving 51 whose backwardness could not be explained. These 51 were examined for eye defects, hearing, and diseases of the nose and throat with the following results:

Eyes: Defective vision, 15 or 29 per cent.; blepharitis marginalis, 5 or 9 per cent.; conjunctival catarrh, 4 or 8 per cent. Nose: Mucopurulent catarrh, 2 or 4 per cent.; inferior turbinate enlarged, 8 or 16 per cent.; spur, 4 or 8 per cent. Tonsils: Enlarged or inflamed, 16 or 31 per cent. Adenoids: Needing operation, 16 or 31 per cent.; small, 13 or 25 per cent.; very small, 3 or 6 per cent. Ears: Defective hearing, 4 or 8 per cent.

Many children had more than one defect. Fifty of the 51 backward children, or 98 per cent., had one or more defects.

At the same time 257 children who were doing average work but who were suspected of having physical defects were examined with the following results:

Eyes: Blepharitis marginalis, 36 or 11 per cent.; conjunctival catarrh, 14 or 4½ per cent. Nose: Mucopurulent catarrh, 20 or 6½ per cent.; inferior turbinate enlarged, 38 or 12 per cent.; spur, 22 or 7 per cent.; septum displaced, 3 or 1 per cent. Tonsils: Enlarged or inflamed, 16 or 31 per cent. Adenoids: Needing operation, 120 or 39 per cent.; small, 84 or 27 per cent.; very small, 20 or 6½ per cent.

Two hundred and sixty-six, or 86 per cent., had one or more defects. One hundred and fifty-seven notices were sent to the parents of those children who urgently needed operation, and as a result 19 were operated on for adenoids or tonsils. This result may not seem very great, but a start was made and the education of the parents was begun, and as the resulting benefit to the children became apparent, we had less trouble in getting consent to operations.

In the winter of 1907 an examination was made of 266 children who were thought to be suffering from nose or throat troubles. This year we had 26 operations. The same year 1,437 pupils were examined for eye defects and 91 or 6 per cent. were found to be in need of treatment and as a result 20 were fitted to glasses.

In 1908, 204 children were examined for nose and throat troubles. One hundred and twenty-six or 61 per cent. needed operations or treatment. This year we got 13 operations and some were treated otherwise than by operation.

In January, 1910, a special examination was made of 1,564 pupils, all who were in attendance at that time. Our idea was more that of a coarse drag net to record the more serious defects than to have a list of less important defects as we were after practical results. In this examination the teeth were not noted unless bad enough to need extraction. Below is the result of the examination:

Number of pupils examined	1564
Defective teeth (needing extraction)	295
Enlarged tonsils	113
Adenoids	73
Adenoids and teeth	71
Tonsils and adenoids	62
Tonsils and teeth	44
Adenoids, tonsils and teeth	39
Teeth and markedly enlarged cervical glands	15
Enlarged cervical glands	4
Miscellaneous	16
Total	732

The adenoid cases per grade were as follows:

	Number Examined	Number Found	Per Cent.
High School	165	9	5
Grade VIII	89	6	7
" VII	168	19	11
" VI	182	27	15
" V	273	16	6
" IV	106	25	24
" III	105	46	44
" II	143	46	32
" I	242	48	20
Kindergarten	91	8	9
	1564	250	16

Comparison of 1,564 South Manchester school children with 323,344 New York City children, as follows:

	South Manchester	New York City
Percentage of children defective	46	75
Teeth	29	57
Adenoids	16	22
Eyes	7	11
Ears	2	1
Tonsils	14	
Pediculosis	4	45

In September and October, 1910, another examination was made of all school children in attendance, our feeling being that an examination made in the middle of winter when colds were prevalent would give too high a percentage of enlarged tonsils and adenoids on account of temporary inflammation from colds; in fact, this was found to be true in a few cases that came to our notice. For example: A boy was found to have tonsils that were very large and operation was advised. The day he was to go to the hospital he was again examined as they all are and his tonsils were practically normal. The explanation was simple. He was just getting over an attack of acute tonsillitis at the time of his first examination.

	January	October
Number examined	1564	1725
Defective teeth	30 per cent.	31 per cent.
Tonsils	14 per cent.	16 per cent.
Adenoids	16 per cent.	2 per cent.

The percentage of teeth and tonsils remain about the same. The difference in adenoids is due to the time of year, the number of cases that had been operated on, and because at this examination only the more severe cases were noted.

In October, 1911, 1,739 children were examined and defects found as follows:

		Per cent.
Teeth (including those needing extraction and those needing filling)	707	40
Tonsils, needing operation	83	5
Moderately enlarged	123	7
Adenoids (marked)	37	2
Cervical glands	23	1

The results of our work show particularly in the small number of adenoids found in the last two examinations, both in the early fall before colds are prevalent, to be sure, but the 131 pupils or 8 per cent. of the total number of children now in the school who have had either tonsils or adenoids or both removed, bring down the percentage very materially. More than this the parents have been educated in this direction. They see the advantage to the children and we do not have to urge them to permit the operation. Now they ask to have it done and a considerable number of operations have been done on children under the school age due to the results observed in our cases.

The most surprising observation to the examiner was the tremendous disregard shown to the care of children's teeth even among the better class of people. With only two or three exceptions children who brushed their teeth daily had good teeth, and the reverse was also true, and some enlargement of the cervical glands was the rule with bad teeth.

The expense of the operation for adenoids and tonsils as done at the Hartford Hospital is $3.50. In those few cases where even this amount could not be raised, we have found a way to procure it so that in every case when the parents are willing the operation has been done.

Medical Supervision as Carried on Throughout the Year.—The medical inspector is in his office at the school with the school nurse in attendance at 10 A. M. two mornings a week. To him are sent all pupils who the teachers think need attention, as those she thinks may have some contagious disease, sore throat, pediculosis, ringworm, impetigo, pink eye, injuries, etc. These children are either sent back to their rooms or sent home with a note to the parents. If advisable, throat cultures are taken and the children are not permitted to return to school until the culture is negative. No child who is sent home is permitted to attend school until seen by the medical examiner.

In case a child is sent home with an infectious disease, the other children in the family attending school are sent home and not allowed to attend school until two weeks after the house has been fumigated, and in cases of diphtheria until a negative culture is obtained, and in all cases after an examination by the medical inspector.

In cases of contagious disease reported to the Health Officer, all members of the family are excluded from school and are allowed back under the same conditions.

Pediculosis cases the parents are obliged to treat at home, and in case of necessity the nurse goes to the home and shows the mother how to treat the head.

Ringworm, impetigo, and pink eye are called to the attention of the parents with the advice to call on the family physician. When nothing is done the nurse treats the case under supervision of the medical inspector. She also cares for minor injuries and such emergencies as may occur.

Below is a table showing the cases of pediculosis seen by the medical inspector in the last six years:

	Number Examinations Made	Number Pupils Examined	Number Cases Pediculosis	Number Excluded
1905	1103	421	216	150
1906	1585	458	282	135
1907	2435	477	227	125
1908	1427	342	96	108
1909	1238	318	72	89
1910	1263	117	66	55

About six families are left who have to be watched for pediculosis.

The school population has increased very decidedly in the last six years and yet the number of children examined has been reduced from 421 to 117, the cases of pediculosis from 216 to 66, and the children excluded from school from 150 to 55. The results speak for themselves.

Number visits to school		77
Number examinations		1,238
Number children examined		218
Number children excluded		99
Pediculosis	72	
Sore throat	53	
Sore eyes	25	
Ringworm	14	
Tonsilitis	12	
Skin disease	10	
Cuts	7	
Poison	7	
Sores on face	7	
Boils	4	
Ear abscess	3	
Tuberculosis	2	
Mumps	2	

Chicago's 1910 Report

Number examined		820,655
Number excluded		14,653
Diphtheria	708	
Measles	1004	
German measles	397	
Scarlet fever	579	
Chicken pox	1010	
Mumps	1128	
Wooping cough	298	

I give above a detailed report of the medical in-

spector's work for 1909, taking that as an average year rather than 1910 when we had two epidemics, one of scarlet fever and one of diphtheria.

Medical Supervision During Epidemics. — In 1910-11 South Manchester was visited by a long lasting epidemic of scarlet fever and diphtheria which started before the schools opened in the fall and continued for several months. Ordinary precautions did not control it. It was finally controlled in the following manner:

Each morning the Health Officer reported the new cases and the children from those homes were at once excluded from school and not allowed to return until two weeks after the house was fumigated and in cases of diphtheria not until a negative culture was obtained and also after a careful physical examination. The specimens were sent to the Laboratory of the State Board of Health in Middletown. During the epidemic 389 cultures were sent to the laboratory 87 of which were positive.

In addition, the 481 high school and upper grade pupils in the high school building had their throats examined once. One culture was taken which was negative.

The pupils in the grammar school building averaging 850 were examined on six consecutive weeks. Two hundred and ninety-six cultures were taken, 56 of which were positive. A number of well marked cases of scarlet fever and diphtheria were found in the school. There were during the school year 65 cases of diphtheria and 75 cases of scarlet fever and 144 children in those families were excluded from school.

In figuring the cost of the epidemic the superintendent of schools presents the following figures:

Time lost by children who were ill	3696 days
Time lost by children who were excluded	4394 days
Total	8090 days

This represents 44 school years for one pupil or one year for 44 pupils. It costs $35.28 to promote one pupil one grade making a cost to the school district of $1,552. In addition many children were kept home from school by fearful parents and many were kept out while waiting for a report on their cultures, making a total cost through time lost by pupils of about $2,500. To this must be added the cost of medical inspection, fumigation, etc., and also the cost to the families of medical attendance, nursing, medicine, and time lost from work, making the total cost to all concerned about $15,000 for the epidemic.

If we had begun systematic inspection of all children in school earlier, the result would probably have been better, but our schools were not closed and the majority of the pupils received their regular instruction.

Circumstances outside the school and beyond control of the school authorities had more or less to do with the spread of the epidemic. Children who were excluded from school went to Sunday school, church, public lectures, and mixed on the street and in stores with other children and doubtless spread contagion. We feel sure that the school is the safest place for children under such circumstances as there they were free from contact with the slightly sick, but contagious, and from members of families where disease was present.

The Open Air School.—An Open Air School was inaugurated January 25, 1911. The necessary money was raised by the Educational Club. The School District pays the teacher and supplies the desks and regular school equipment. The tent in which the school sessions are held, the house where the children eat and rest, which is on the grounds with the tent, the necessary extra clothing, food and service are provided by the Educational Club.

The school opens at 8:30 when each child receives a cup of cocoa. A school session is held until 11:30 broken by recess and gymnastics. Recreation from 11:30 to 12:00 when a substantial dinner is served followed by a rest period of one hour. Then comes the afternoon session from 1:30 to 3:30 broken by recess and recreation.

The school accommodates twenty pupils. A list of candidates for the school is made by the various teachers and examined by the physician in charge who recommends those who are proper cases for the school. The pupils are discharged from time to time as they improve. They are examined several times a year by the physician and frequent records of weight, general and special conditions are kept. The children are anemic, heart cases, cases of enlarged tonsils and adenoids, or more properly those having the lymphatic diathesis, chorea, and malnutrition. We have had no case of tuberculosis although one cured case was entered and did very well, gaining 15 pounds.

All school work has been done under the tent. The temperature has varied from 16° to 102° and the teacher reports that the best work was done in the coldest weather. Owing to the varied ages the instruction has been of necessity individual to a great extent.

The physical gain has been general. Out of 30 cases 25 have gained in weight and almost all have improved in general appearance and appetite, nervousness, and ability to study. A special point has been made in teaching hygiene. Several have been discharged so well that they did not need the school any longer.

The Nurse.—The nurse is a very important part of the system. Her duties in general are as follows: (1) She helps select the pupils who ought to see the medical inspector. (2) She assists the medical inspector, the physician making the special examinations, and the physician in charge of the open air school. (3) She follows up such cases as may be necessary, advising parents as to proper medical attention and corrective measures. (4) She treats minor ailments under direction of the medical inspector, as ringworm, impetigo, etc., thus it is not always necessary to exclude such cases from school. (5) She takes evening temperatures in suspected cases of tuberculosis. (6) She visits pupils' homes and arranges with the parents for pupils to go to the hospital for operations for adenoids and tonsils and goes to the hospital with the children. (7) She takes the girls to the orthopedic clinic Saturdays. (8) She has charge of the girls' bathroom. (9) She takes care of emergency cases occurring in school.

Eye Examinations.—The State requires an examination of every child's eyes once in three years. This is done, and in addition the eyes of new pupils are examined every fall, and also those eyes that were found defective at the last examination are re-examined and notices again sent to the parents.

Baths.—Several years ago a room was fitted up as a bath-room. Thirty-two slate stalls were put in each having a spray on a universal joint so arranged that girls can use it without wetting their hair. A janitor has charge of the boys in the morn-

ing and the nurse looks after the girls in the afternoon. The general public is allowed to use the room evenings. Soap and towels are furnished. In the last school year boys took 8,861 baths and girls 2,773. During the 4½ years the bathroom has been in use 59,000 baths have been taken.

Miscellaneous.—Ordinary sanitary measures are taken, as a jet of water instead of drinking cups, paper towels, frequent fire drills. The school gymnasium is used to its full capacity.

As the State compels parents to send their children to school 200 days a year, it is the duty of the State to safeguard their health in every possible way, and our results in South Manchester justify the outlay.

The medical inspector receives $2 a visit or $2 per hour in making special examinations, the nurse $17 per week. The special yearly examination costs $50. The special equipment of the open air school and the extra first year's expense was about $1,500 and was paid by the Educational Club. During severe epidemics the cost is much greater, of course, on account of the extra work done by the medical inspector. The clerical work is done by the superintendent's stenographer and very complete records and statistics are kept, each child having a card with full information running from year to year.

The results given in different places in this paper fully justify the work and expense, but the gain to the children in health, strength and ability to better provide for themselves is far more than any financial consideration.

ORGYIA LEUCOSTIGMA.

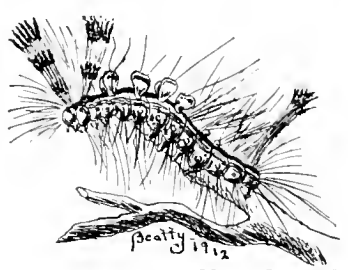
A FACTOR IN THE CAUSATION OF OPHTHALMIA NODOSA.

By GEORGE WESLEY BEATTY, M.D.,

BROOKLYN, N. Y.

From May until late in September and sometimes October, the shade trees in our city streets are covered with a peculiar caterpillar—the larva of the white-marked tussock moth or *Orgyia leucostigma* (Smith & Abbot).

The tussock moth is a native of North America and ranges from Florida north along the eastern coast to Nova Scotia and westward as far as Nebraska (at the present writing). Its food consists of almost all varieties of shade, fruit, and ornamental trees; the conifers, however, are singularly immune to their attacks.



The caterpillar of the Tussock Moth, *Orgyia Leucostigma.*

Here in New York City they seem to have a predilection for maples, horse-chestnut, elm, and catalpa trees and rose bushes.

A little knowledge of the life history and habits of this insect will not be amiss. The eggs are deposited late in September, and, winter over, on tree trunks and the larger branches, under fences, copings, and in fact wherever a crevice affords a shelter. They are detected at a glance by the frothy, glistening appearance of the white sac which contains the eggs. This sac is attached to the cocoon. It is pure white and appears like a mass of cotton that has been "sized" with shellac and glistens. Along some time in May, in this locality, the caterpillars hatch; they molt five times, *i.e.* they cast their skin, exhibiting different characteristics after each molt.

The young drop down on silken threads if the trees are jarred, and often without this provocation. They are blown by the wind and in that manner spread to other trees at great distances. When full grown or nearly full grown, they are untiring travelers, crawling down from the home tree where they were hatched, and crossing large areas of ground to attack a new tree. In this way they go from tree to tree, making extensive migrations. Often the caterpillars drop from the trees on the passer-by, and crawling along the edge of the collar small body-hairs embed themselves in the skin, giving rise to more or less irritation.

It is customary to spray the trees with solutions of arsenic; this poisons the leaves and in this way when the caterpillar eats them, millions are destroyed. Later in the season the walks are filled with débris of leaves and dead caterpillars; this is hurled along by the wind, automobiles, cars, etc., and the hairs are embedded in the conjunctivæ of pedestrians and others, giving rise to an annoying ophthalmia.

Usually the patient applies for treatment shortly after the introduction of the hairs into the eyes, for relief from the severe irritation which he is creating or aggravating by constant rubbing.

Two of my patients in stating the cause of the irritation, said they had brushed one of these red-headed caterpillars from their faces and had gotten some of his hair into their eyes, which began to itch and burn almost immediately. I relieved my cases by brushing the conjunctivæ gently with absorbent cotton backward and forward, with the hope of entangling the spiny hairs in it and thus removing them. I then washed the eyes, using an eye-cup. This afforded considerable relief and the patients were sent away with a bland collyrium to be used thrice daily in each eye. little less than a month later one of them returned with a nodular condition of the cornea resembling tubercles. The nodules were not many, but I referred him to an oculist, who, after giving due consideration to the history of the introduction of the hair from the caterpillar, treated him for a secondary keratitis with heat and atropine. He made an uneventful recovery.

I have had other cases in which a nodular condition of the conjunctivæ was produced by the introduction of caterpillar hairs, but I feel that these two will suffice to make my point.

I have had other cases apply for treatment of the erythema occasioned by these hairs becoming embedded in the skin of the neck where the caterpillar had been walking along the clothing. In every instance I brush the skin briskly backward and forward with absorbent cotton to remove the hairs, much the same as we remove the microscopic spines of the cactus pear and cowhage from the skin. I then apply some soothing agent and protect the neck from the clothing, and recovery quickly follows. In one instance the irritation was so great and the consequent scratching so severe that a true traumatic dermatitis was developed.

204 Hancock Street.

PHOSPHOPROTEINS IN DIET.

By FELIX VON OEFELE, M.D.,

NEW YORK.

We are indebted to Liebig for the division of organic substances into carbohydrates, fats, and proteins. For a long time we have known that this division is insufficient and of proteins especially that there are many different kinds which have been divided into numerous groups. In therapeutics, however, the differentiation of protein is either not observed at all or is carried to extremes. I must emphasize that in therapeutics the term proteins should no longer be indiscriminately used as a unity. On the other hand, the classification of proteins should be as simple as possible.

Briefly I will refer to a passage in O. Hammarsten's "Textbook of Physiological Chemistry." "The several protein substances contain carbon, hydrogen, nitrogen, and oxygen; the majority contains also sulphur, a few phosphorus, and a few also iron." If we disregard iron this chemical division gives us a simple and practical classification, and we get two groups of proteins: one rich in sulphur, the other rich in phosphorus. In a few instances we find that a protein substance is rich or poor in both elements. Most proteins, which are of interest in therapeutics, contain sulphur and phosphorus, but as already mentioned, one element usually predominates over the other. In the living organism both groups are always sharply separated. In the cell those rich in sulphur are found in the plasma and the phosphorus-rich proteins in the nucleus. In the process of digestion the former are chiefly digested by pepsin and muriatic acid and the latter by trypsin in alkaline solution. The cells of the epidermis, epithelium, and endothelium chiefly contain plasma, and therefore much sulphur and little phosphorus. The nerve structure contains hardly any plasma, but is derived chiefly from nucleus with, therefore, much phosphorus and very little sulphur.

These facts have much to do with my discovery of selenium as a remedial agent for cancer, but their importance extends beyond the limits of cancer research—they form a rational basis for studies in general dietetics. In the cell the seat of life is in the nucleus. Therefore, in practical dietetics we must not be content simply to prescribe any nitrogenous diet, but in one class of cases we should give proteins rich in sulphur and in another class those rich in phosphorus.

It is very important to know the indication for proteins containing phosphorus, for these affect the life of the cell nucleus, and, therefore, the whole economy of the body; but it is not always an easy task to supply what is needed as there are many proteins rich in sulphur, but only a few rich in phosphorus.

During seventeen years of private dietetic practice in German health resorts I had most gratifying results in employing either proteins rich in phosphorus or those rich in sulphur. There was one drawback to this, namely, it proved too expensive for the average patient, but that could not be helped, because there are as yet no satisfactory artificial foods fulfilling all requirements. In cases requiring proteins rich in sulphur I prescribed the white of eggs prepared in different ways and the yolk whenever phosphorus-rich proteins were indicated. Whenever the patients could afford to live on this diet I have always been satisfied with the results obtained. I am convinced that the whole egg is a fit food only for a healthy person, but not for a patient.

I will refrain from giving statistics, for to state a few cases only would be of no use. On the other hand, it would take too much time to classify all the cases I have had during these seventeen years. Suffice it to call attention to the above and to refer the reader to textbooks of physiological chemistry for further details.

326 East Fifty-eighth Street.

Treatment of Prolapsus Uteri.—M. Potocki believes that prolapsus uteri is almost always found in women who have been pregnant, and arises from the fact that they have passed through labor. Aside from the rupture of the perineum, which may occur at that time, there are various other mechanisms which assist in bringing about prolapsus after delivery. The parts are softened and distended during pregnancy, and the cervix may become much elongated. During gestation parturition and the puerperal state organic modifications occur which predispose to prolapsus, and lesions occur, some of which are curable while others require operation. Stretching and tearing of the cervix may occur through delivery before dilatation is complete; during labor the head drags upon the connections of the uterus with the bladder and rectum and tears them away from their natural supports. This may be prevented by the watchful obstetrician and the descending parts of the canal may be pushed upward with the hand between the pains and maintained there during the pain, when they will slip upward. Operative labors cause tearing of the ligaments and sphincters. A good preventive measure is dilatation of the vagina before operative accouchements by means of a rubber balloon. This renders extraction easy by putting an end to the resistance of the soft parts. After labor all tears should be repaired at once. The author believes that it is a mistake to allow the woman to get up sooner than three weeks after labor, since the weight of the uninvoluted uterus tends to cause prolapse. When there are no tears, but simple relaxation of muscles and ligaments, the author thinks that massage and electricity are valuable to restore the tone of the parts. The pessary is an instrument that not only is not dangerous, but that properly fitted is of the greatest value in moderate prolapse when operation is not desired by the patient. Hard rubber pessaries are most satisfactory, and the smallest that will do the work is most desirable.—*Annales de Gynécologie et E'Obstetrique.*

The X-Ray Treatment of Splenic Enlargement in Children.—G. A. Petrone and M. Lo Re report their results in eight cases. The results were poor in one case of Leishman anemia and one of anemia splenica pseudoleucemica. In one case of malaria with greatly enlarged spleen the *x*-ray treatment, together with the administration of quinine, was very effective, although hitherto quinine and arsenic alone had proved valueless. In four cases of anemia splenica pseudoleucemica the spleen was brought back quickly to its normal size. Another case was greatly improved, but died of bronchopneumonia.—*La Pediatria.*

Asthma with Swollen Middle Turbinals.—E. A. Peters reports the case of a woman, aged forty-two, whose illness began eighteen months ago with paroxysmal rhinorrhea; lately the patient has developed asthma, which is worse at night. The nose presents a condition of chronic rhinitis; the inferior turbinals are swollen. The middle turbinals are edematous and compress the septum. This last condition is characteristic of nasal asthma.—*Proceedings of the Royal Society of Medicine.*

MEDICAL RECORD.

A Weekly Journal of Medicine and Surgery.

THOMAS L. STEDMAN, A.M., M.D., EDITOR.

PUBLISHERS

WM. WOOD & CO., 51 FIFTH AVENUE.

See fourth page following reading matter for Rates of Subscription and Information for Contributors and Subscribers.

New York, August 24, 1912.

RABIES IN THE UNITED STATES.

A RÉSUMÉ of the prevalence and distribution of rabies in the United States during the year 1911 is given by A. M. Stimson in the Public Health Reports for July 12, 1912. From this it appears that the most striking feature in the prevalence of this disease has been its spread to the Pacific Coast States which were apparently entirely free from it at the time of the former investigation conducted by the Public Health and Marine-Hospital Service in 1908. Thus, in California in 1908, there was not a single case of rabies reported, whereas in 1911 there were 124 persons who received treatment for this disease. More cases were noted in New York than any other single state. Here 889 persons received antirabic treatment and thirteen deaths occurred.

The whole investigation serves to indicate that all over the country the number of localities infected by rabies has increased. Although there has been a generalized spread to previously unaffected territory, it is probably true that the increased activity of health authorities and the greatly extended facilities for the administration of protective treatment have served to bring to light many cases of animal infection which formerly would have escaped notice. However, making due allowance for the more complete recording of all cases, Stimson still believes that there is an actual increase of rabies throughout the country at large. In marked contrast to the increase among the lower animals is the diminution in the number of human deaths. These amounted to only 12 per cent. of the total number of cases. A prominent factor in this decrease in the death rate is undoubtedly due to prompt resort to antirabic inoculations of exposed persons.

It has now become possible for the person who has been bitten by a supposedly rabid animal to avail himself of the immunity conferred by inoculation with comparative ease. In 1908 there were twenty-three institutions in this country where the Pasteur treatment could be administered. Now there are forty-two such institutions. Besides this there are five firms and laboratories that furnish materials for inoculations to practicing physicians. In 1911 the Hygienic Laboratory in Washington distributed virus for 942 cases. In the year 1911 more than twice as many took the treatment as in 1908, when the whole number who are known to have availed themselves of this method of combating the infection was only about 1,500. In 1911, on the other hand, there were 4,625 persons who received the Pasteur treatment. The total number of deaths from rabies in the whole United States so far as ascertained during 1911 was ninety-eight. Of these forty-four occurred in children between the ages of eleven and twenty. The period of incubation as ascertained in sixty-five cases varied from ten to twenty days in eleven instances, twenty-one to thirty days in nineteen, thirty-one to forty days in eight, and forty-one to sixty days in eight. There were ten cases in which the period of incubation was between two and four months, three from four to six months, and two from six to twelve months, whereas three were reported in which it extended over a year. The average incubation period in all cases excluding those over one year was 49.25 days. Of sixty-four cases thirteen received the infection in the month of August, but the other months were practically all equally represented.

From the foregoing data Stimson concludes that the decrease in the number of human deaths coincident with an increase in the number of antirabic treatment inoculations effectually disposes of the claims of the opponents of the Pasteur method that treatment causes rather than prevents rabies. He is of the opinion that the total death rate in persons taking the treatment was probably less than 0.8 per cent., and that even this small mortality can largely be accounted for either by delay in the treatment or because the incubation periods were too short to permit of immunization.

VISION IN RELATION TO MARKSMANSHIP.

AN English physician, Edridge Green, has been calling attention recently to the inadequate tests employed for men in the British navy. It goes without saying that for the performance of certain duties which fall to the lot of sailors, correct vision is absolutely necessary. In the *United States Naval Bulletin* issued in July, 1912, Surgeon E. J. Grow, U. S. N., deals with the question of vision in relation to marksmanship and brings out some very interesting points. Two hundred and seventy heavy-gun pointers and trainers of the U. S. navy were subjected to ocular examination. This included vision, refraction of each eye under a cycloplegic, the range of accommodation before, during, and after cycloplegia, effect of miotics, muscle tests at varying distances, and ophthalmoscopic examination in every case. In the paper, however, Grow considered only the results of vision, refraction, and ophthalmoscopic examinations.

The most important of the conclusions reached were as follows: Among the gun pointers of the U. S. Atlantic Fleet who were examined, a reduction of visual acuity was almost invariably commensurate with and due to the astigmatism present. Astigmatism of more than 0.75 diopter blurs and often doubles one of the cross lines in the telescopic sight and therefore interferes with accu-

rate aiming. Astigmatism of less amount may be considered as having a negligible effect, so far as pointing is concerned. A visual acuity of $\frac{20}{15}$ will, in a simple and practical way, eliminate all cases of astigmatism and myopia which by any chance would reduce or interfere with the most accurate aim which is possible to be obtained through telescopic sights. Plenty of men can be obtained who have the vision, and nothing is to be gained by a higher visual requirement. The elimination of dangerous amounts of hyperopia cannot be obtained by simple visual tests. When the condition is suspected a special ocular examination should be required to determine the amount. Hyperopia of over 3 diopters should be cause for rejection. Exceptional vision is no guarantee of good shooting and ordinary or slightly reduced vision, if associated with no more than 0.75 diopter of astigmatism, is of no hindrance when U. S. navy telescopic sights are used. Twenty-nine per cent. of the gun pointers and trainers examined failed to meet the visual requirements which have been in force since July 1, 1908. Many of these men have had several years' experience in heavy-gun practice and made most excellent scores. A slight diminution of vision often follows long continued practice with telescopic sights. Such men should be allowed a moderate reduction in visual acuity so that they will not be disqualified for an ocular defect when it is of such amount as to be of no determinable importance. Care should be taken that the individual who adjusts and fixes the telescopes in focus is free from any error of refraction which would preclude the possibility of others, who may be called upon in succession to use the same sight, from obtaining accurate aim. It is impracticable for gun pointers to wear glasses correcting their visual error and equally so for each individual to change the telescopic sight to suit himself. Consequently, it is imperative that the eyes of all who are to use these sights should be so nearly normal that the gun pointers can instantly use any telescope as they find it with a maximum of aiming efficiency. In reference to small arm shooting and rifle shooting, the relation of eyesight to markmanship is valueless when an ordinary service target is the object.

There is, stated Grow, an intensely practical side to this important subject of the relation of vision to markmanship which must be carefully considered. In view of all the evidence obtainable, it is believed that the best interests of the service will be furthered, as far as eyesight can possibly be concerned in relation to shooting with telescopic sights, by adopting the following requirements: (1) All candidates for the original rating of gun pointers should have a minimum visual acuity of $\frac{20}{15}$ in the sighting eye and $\frac{20}{20}$ in the other eye. (2) Hyperopia of over 3 diopters is cause for rejection. (3) The medical officer of each ship should carefully reexamine the eyes of all men holding these ratings at the beginning of each calendar year. If the vision has fallen materially since the last examination or evidence of asthenopia or disease exists, an ocular examination should be made by some one trained in ophthalmology. (4) Gun pointers and trainers who have served as such during one enlistment may on subsequent enlistments be accepted with a minimum visual acuity of $\frac{18}{20}$ in the sighting eye and $\frac{15}{20}$ in the other eye, provided such reduced vision is not due to progressive organic disease, myopia, or astigmatism of over 0.75 diopter. (5) In all cases vision should be tested by the so-called navy "unlearnable vision test card" as there is considerable temptation to learn the letters found on ordinary charts by those especially anxious to secure or retain the rating of gun pointer or trainer.

CERTAIN PHASES OF THE TUBERCULOSIS PROBLEM.

Probably no disease has ever been so freely discussed in the medical and lay press as tuberculosis. Sometimes one is led to think that so much is written concerning this most prevalent malady that the public may become somewhat weary of the subject. On further thought, however, it appears evident that it is good policy to keep the matter always in the limelight and to impress continually on the minds of the people the fact that pulmonary tuberculosis is not only worldwide but, what is of more importance, that it can be prevented and successfully treated. The fact that it is both preventable and under certain conditions curable should be made the text of every sermon dealing with the disease. In the *American Practitioner* for July, 1912, is a series of articles which forcibly bring home the truth of the statement. Adami in the first of these articles draws attention to the possible curability of tuberculosis, showing that in recent years some very remarkable results have been obtained in the treatment of infections produced by minute animal parasites, and he is optimistic enough to hope that the day may not be far distant when similar results may be obtained in the case of minute vegetable parasites.

C. A. Hodgette deals fully with the work and methods for the alleviation of tuberculosis, pointing out that the means of combating tuberculosis have increased largely of late. Incidentally he lays stress on the fact that the sanatorium is only one phase of the work against tuberculosis, and perhaps not such an important one as some of those interested therein endeavor to make out.

The supreme importance of early diagnosis of tuberculosis is dwelt upon by Robert C. Paterson who, after stating that practically every adult is or has been infected, expresses the opinion that if some of our energies were directed to keeping these infected persons from breaking down and developing pulmonary tuberculosis, by raising their powers of resistance, the results would be even more gratifying than at present.

Notification again is a *sine qua non* in the successful campaign against tuberculosis for, as

Edward Craig says, it converts the patient from a source of infection to a focus of prevention. The province of Ontario, or rather the government, has always been extremely generous with money the use of which is calculated to conserve public health, to aid education, and to advance the material prosperity of the province. This has been especially evident in the thorough manner in which it has coped and is coping with the problem of tuberculosis within the borders. J. W. C. McCullough deals in the same journal with the system of public health organization in force in Ontario.

As said before, it is by constantly ventilating the subject of tuberculosis in the medical and lay press that the profession and the public are induced to cooperate and join earnestly in the crusade against it. In such concerted efforts intelligently applied the only hope of its eradication lies.

BRASS MOLDERS' FEVER.

Fever was once believed to be a mysterious process representing the summation of Nature's resources for throwing off disease. After the discovery of the heat-regulating center it became evident that any agency which could influence the latter could raise or lower the temperature, but a distinction soon came about between fever proper and hyperthermia. The latter could occur under a great variety of circumstances; for example, in severe acute drug intoxications. It could be determined to a slight degree by purely physiological factors, such as exercise or hot baths. In hysterical subjects the temperature might attain a surprising height, yet be unaccompanied by collateral evidences of fever. The latter properly represents a syndrome in which elevation of temperature is but a single component, others being malaria, myalgia, rigors—in fact, acute toxemia.

A generation ago there was no common knowledge that any drug could cause a febrile syndrome or even hyperthermia without a general disturbance of the whole economy. Our older materia medicas recognized no class of pyretogenous substances. Perhaps the discovery of the tuberculin reaction was the first advance in this direction. Here a very minute dose of a complex organic substance was seen to be able—not, to be sure, in a normal subject—to cause a distinct febrile syndrome. At a later period we began to hear of salt fever and nuclein fever. Yet it would appear that the entire syndrome of fever has been duplicated for many centuries in the persons of brass molders. Not only fever, but the more tangible subjects of natural and acquired immunity to disease have been demonstrated for ages in connection with alloying tin and copper.

At a recent meeting of the Verein für wissenschaftliche Heilkunde in Königsberg (*Muenchener medizinische Wochenschrift,* June 18), Kisskalt discussed the subject of brass molders' fever and allied industrial diseases. The affection in question is due evidently to the inhalation of zinc vapor. This is accompanied by cough, but a period of latency follows. After several hours prodromes of clinical fever are apparent. There is a chill, followed by a rise of temperature to 40 degrees C. The pulse rises from 100 to 120. Before the advent of the chill there are malaise and backache. The fever is usually slept off. In the natural course of events three individuals out of four who engage in this work have this fever. The fourth has natural immunity. Of those who develop the disease, a certain number acquire immunity, while others evidently do not. But under industrial hygiene the affection has been largely diminished in frequency. That the febrile syndrome is due largely to zinc has been proved by animal experiment.

Convulsions in the Newborn.

An important distinction is pointed out by C. Stamm (*Archiv für Kinderheilkunde,* June 15, 1912) in contrasting the convulsions that occur shortly after birth with those that arise in later infancy and childhood. In the former case the convulsions are rarely of functional nature, while in the latter instance they are chiefly the manifestation of spasmophilia, a constitutional anomaly depending upon mechanical and electrical overexcitability of the entire nervous system. The rarity of this form of convulsions in early infancy is explained by the fact that at this period of life there is a diminution in the irritability of the peripheral nerves. The form of convulsion that ushers in an infectious disease is not to be expected in the newborn. In these there have been reported rare instances of reflex convulsions such as those resulting from a too hot or a too cold bath. The offspring of an eclamptic or nephritic patient may have convulsions, and instances of genuine epilepsy in the newborn have been observed. Convulsions may be one of the symptoms of septic disease or tetanus in the newborn. As a rule convulsions at this period of life point to some gross lesion of the brain as the immediate cause. This lesion may be a hemorrhage that has resulted during labor without necessarily any noticeable trauma or asphyxia having been present. In these cases there may occur several days after birth manifestations of increased intracranial pressure without a noticeable injury to the skull. Meningeal and intracranial hemorrhage may be caused by asphyxia or traumatism to the blood vessels. The usual site of hemorrhages is the subdural space in the region of the longitudinal sinus. Of diagnostic importance are the symptoms of increasing intracranial pressure, and the presence of blood admixed with the cerebrospinal fluid obtained by lumbar puncture. Sometimes the latter procedure is sufficient, in mild cases, to effect a cure. In cases in which there is a progressive increase in the intracranial pressure, the operation of decompression by trepanation is indicated. Next in frequency to the traumatic cerebral hemorrhages of the newborn are those of syphilitic or parasyphilitic origin. Other causes of convulsions at this period of life are syphilitic meningitis, encephalitis, and myelitis, purulent meningitis, embolic abscesses, encephalitis, and sinus thrombosis, and congenital anomalies and neoplasms, such as scleroses and porencephalus.

News of the Week.

Prizes in Therapeutics.—The American Therapeutic Society at the annual meeting held last June voted three prizes of $250, $150, and $100, respectively, to be awarded to the best reports on subjects relating to therapeutics, with the following conditions: The competition is limited to qualified physicians in the United States and Canada. The sub-

ject of the competition is limited to a substance or preparation which is official in the United States Pharmacopeia. The research may be either wholly laboratory or wholly clinical, or laboratory and clinical combined, and must be conducted in a public institution. The reports must be typewritten and submitted to the committee before April 1, 1913, and must be marked with a distinctive word or motto and accompanied by a sealed envelope similarly marked and containing the name and address of the competitor and of the laboratory or hospital where the research was conducted. Dr. Raymond Webb Wilcox of 679 Madison avenue, New York, is the chairman of the committee on the prize competition.

Suicides in New York.—Statistics compiled in Albany recently show that during the first six months of 1912 a total of 678 persons took their own lives in New York State. Of the various methods chosen the favorite was gas inhalation which caused the deaths of 160 persons. Hanging was used by 144; shooting by 141; poison by 130; the knife by 51; and drowning by 20. Thirty-two killed themselves by jumping from high places. The greatest number of suicides was in May, 132, and the smallest in January, 93.

Hospital Alterations.—Plans have been filed with the building department for alterations to be made at the Roosevelt Hospital, New York. They call for the fireproofing of the stairwell, the staircase, and the elevator shaft, for making four new rooms in the roof house, and for raising the ceiling of the operating room, all at a cost of about $15,000.

Plague Situation Under Control.—The reports from San Juan, Porto Rico, state that the situation there as regards bubonic plague is absolutely under control. No new cases are developing. The stories of destitution on the island are denied by the authorities, who state that there is no need for outside help and that in the various towns where it has been necessary to force the inmates of infected houses to vacate the premises public subscriptions have been raised to care for the sufferers and there has thus been no hardship as a result of these sanitary measures.

Miss Helen Keller Sings.—Miss Helen Keller, whose achievements in spite of her disadvantages have been many, exhibited to the Otological Congress in Boston, on August 16, her recently acquired ability to sing. She also addressed the congress in three languages—English, French, and German.

To Save Defectives.—The establishment of a laboratory of experimental psychology for the study of all inmates received in the Indiana State Reformatory at Jeffersonville was announced recently by Superintendent David C. Peyton. The plan includes a propaganda for converting reformatories into training schools for unfortunates whose deficiencies have betrayed them into crime. Mr. Peyton will be assisted in the experiment by Prof. R. B. von Kleinschmid who has for several years held the chair of education and psychology in Depauw University.

Quadruplets.—Boston, Mass., has added to its achievements, the possession of four children born at one birth, all alive and well. Quadruplets are rare, even in Boston, but these children have showed every intention of living.

Inspect Ship for Cholera.—The Fabre liner *Canada*, which arrived in New York from Marseilles on August 12, was detained at Quarantine because of three suspicious cases of illness which occurred during the voyage. Bacteriological examination of the steerage passengers was negative, however, and the ship was released on the following day. Reports have been received in New York of an outbreak of cholera in Russia within 250 miles of Libau, the chief seaport on the Baltic, and the Health Officer of the Port of New York announces that all ships coming from there will be subjected to a strict examination.

Good Week for Babies.—During the week ending August 11, there were in New York 358 deaths of babies under one year of age, a decrease of thirty-eight as compared to the previous week. The milk stations throughout the city had during the week an enrollment of 17,147 babies among whom there were only thirteen deaths, and the Babies' Welfare Association points with pride to the low records in infant mortality made this summer.

A Clinic for Gonorrheal Vaginitis.—The Mount Sinai Hospital Dispensary has inaugurated a special class for the treatment of these cases occurring in children and has appointed to the department a special physician, who is assisted by a graduate nurse. The cases enrolled since the inauguration of this class are so numerous that the dispensary has been compelled to restrict its treatment to children resident in its immediate neighborhood.

The Fifteenth International Congress on Hygiene and Demography will be held at Washington, D. C., September 23-28, 1912. The president of the United States will be the honorary president of this international congress. The president of the congress is Dr. Henry P. Walcott of Massachusetts, the secretary, Dr. John S. Fulton, Senate Annex, Washington, D. C. Thirty-two foreign countries have accepted the invitation of this Government to take part. All the States of the Union have also accepted the invitation to participate officially in the meeting. The responsibility for the conduct of the congress has been assumed by the Department of State.

The Jewish Maternity Hospital.— We are requested to state that the dormitory of this institution, in which a slight fire occurred last week, is not in the hospital itself, but in a separate building.

Direct Transfusion of Blood.—Dr. Soresi, 75 West Fifty-fifth street, New York, requests that surgeons who have performed direct transfusion of blood send him reports of their cases for use, with due credit, in a forthcoming work on the clinical value of transfusion.

Results of Opium Conference.—Twelve Latin-American countries have notified the United States of their intention to sign the international opium convention drawn up at The Hague last January, thus pledging themselves to join in the suppression of the opium traffic. The list includes Mexico, Guatemala, Panama, Ecuador, Honduras, Cuba, Costa Rica, Dominican Republic, Hayti, Salvador, Bolivia, and Chile. The United States in accordance with its agreement at The Hague is cooperating with the Netherlands in obtaining the signatures of the governments of Latin-America.

Gifts to Charities.—Mr. James B. Brady of New York has, it is reported, given the sum of $220,000 to the Johns Hopkins Hospital, Baltimore, for the establishment of a ward for the treatment of diseases of the kidney.

The Chicago Winfield Tuberculosis Sanatorium has received a gift of $25,000 from Mr. Julius Rosenwald of that city, who celebrated his fiftieth

birthday by large gifts to various educational and philanthropic institutions.

By the will of the late Miss Theresa Foy of New York, St. Vincent's Hospital in this city is to receive a share in the residue of the estate, amounting to about $3,000.

Dr. Arthur I. Kendall, instructor in preventive medicine and hygiene at the Harvard Medical School, Boston, has accepted an appointment as professor of bacteriology in the Northwestern University Medical College, Chicago. He will there direct the study of tuberculosis and its prevention under the fund recently given to the University by Mr. James A. Patten.

Dr. George William Beach, formerly assistant superintendent of the Iowa State Sanatorium for Tuberculosis, has been appointed superintendent of the Minnesota State Sanatorium for Consumptives, succeeding Dr. L. B. Ohlinger, resigned.

Passed Assistant Surgeon W. H. Frost of the United States Public Health and Marine Hospital Service, Washington, has been sent to Buffalo, N. Y., to assist in fighting the epidemic of infantile paralysis there. Request for Federal aid was made by the State authorities, who felt themselves unable to cope with the situation.

The American Electro-Therapeutic Association will hold its twenty-second annual convention at Richmond, Va., on September 3, 4, and 5, 1912, under the presidency of Dr. William D. McFee of Haverhill, Mass. Copies of the interesting programme which has been arranged may be obtained from the secretary, Dr. J. Willard Tavell of 27 East Eleventh street, New York.

Sumter County (Ga.) Medical Society.—At a meeting held in Americus, on August 8, this society was reorganized with the election of the following officers: *President,* Dr. Louis F. Grubbs, Americus; *Vice-President,* Dr. W. S. Prather, Americus; *Secretary-Treasurer,* Dr. T. Lewis.

Upper Peninsula Medical Society.—At the annual meeting held at Menominee, Mich., on August 8, the following officers were elected: *President,* Dr. Edward Sawbridge, Stephenson; *Vice-Presidents,* Dr. Henry S. Smith, Ishpeming; and Dr. C. Frithiof Larson, Crystal Falls; *Secretary,* Dr. A. W. Hornbogen, Marquette.

American Otological Society.—At the annual meeting held in Boston during the second week of August, the following officers were elected: *President,* Dr. Clarence John Blake, Boston; *Vice-President,* Dr. B. Alexander Randall, Philadelphia; *Secretary-Treasurer,* Dr. Henry O. Reik, Baltimore.

Pennsylvania State Bureau of Medical Education and Licensure.—At the recent State medical examination held at Harrisburg of 407 applicants for license to practise medicine in the State of Pennsylvania 284 qualified and 123 failed. The next meeting of the bureau will be held at Harrisburg December 3, 4, and 5.

Obituary Notes.—Dr. Thomas B. McClintic, Passed Assistant Surgeon, United States Public Health and Marine Hospital Service, a graduate of the University of Virginia, Department of Medicine, in 1896, a member of the American Medical Association and of the Medical Society of the District of Columbia, died in Washington, on August 13, at the age of thirty-nine years, from Rocky Mountain spotted fever contracted during the course of his investigation into the disease in Bitter Root Valley, Montana. As a result of his studies, which he had been conducting for the last two years, the disease has been almost entirely eradicated from the valley.

Dr. William I. Cowie of Guilford, Me., a graduate of McGill University Medical Faculty, Montreal, in 1895, died in a hospital at Bangor, following an operation for appendicitis on August 4, aged 43 years.

Dr. John F. Hilton of Phillips, Me., a graduate of the University of Vermont College of Medicine, Burlington, in 1892, died at his home of disease of the kidneys on August 1, aged 45 years.

Dr. Irving E. Kimball of Portland, Me., a graduate of the Medical School of Maine, Portland, in 1876, a member of the Maine State and Cumberland County Medical Societies, the Academy of Medical Science, and the American Laryngological, Rhinological, and Otological Association, and formerly on the staff of the Maine General Hospital, died at his home after a long illness on August 4, aged 60 years.

Dr. Albert Matson Belden of Northampton, Mass., a graduate of the College of Physicians and Surgeons, Baltimore, in 1888, and a member of the American Medical Association and the Massachusetts State and Hampshire County Medical Societies, died at his home on August 5 of pernicious anemia, aged 46 years.

Dr. William W. Moore of Summit, Miss., a graduate of the Eclectic Medical College, Cincinnati, in 1861, died at his home after a long illness on July 18, aged 74 years.

Dr. David M. Aronsohn, formerly of Glasgow, Mont., a graduate of the University of Minnesota College of Medicine and Surgery, Minneapolis, in 1905, died at the City Hospital in St. Paul on August 1, after a long illness, aged 35 years.

Dr. Edmund Marburg Rininger of Seattle, Wash., a graduate of the Marion-Sims College of Medicine, St. Louis, in 1893, and a member of the Washington State and King County Medical Societies, and of the American Urological Association, was instantly killed on July 25, when the automobile in which he was riding was struck by an electric train at a dangerous crossing at Riverton. Dr. Rininger was 42 years of age and was one of the most prominent surgeons of the Northwest.

Dr. Frederick F. Hoyer of Tonawanda, N. Y., a graduate of the Medical Department of the University of Buffalo, New York, in 1849, and a member of the New York State and Erie County Medical Societies, died at his home on August 15, after a short illness, aged ninety years.

Dr. Isaac Hull Platt of Wallingford, Pa., a graduate of the Long Island College Hospital, Brooklyn, N. Y., in 1882, formerly a practising physician in Brooklyn and in Lakewood, N. J., and more recently engaged in literary work, the author of Bacon Cryptograms in Shakspere and other studies, and a member of the New York Academy of Medicine and the American Climatological Association, died at his home on August 14, aged fifty-nine years.

Dr. Henry Francis Borden of Brockton, Mass., a graduate of the Harvard Medical School, Boston, in 1869, a member of the Massachusetts State and Plymouth County Medical Societies, the Society of the Alumni of the Boston City Hospital, and the Brockton Medical Society, and consulting surgeon to the Brockton Hospital, died at his home, on August 8, aged sixty-seven years.

Dr. Henry J. Bruce of Bridgeton, R. I., a graduate of the Long Island College Hospital, Brooklyn,

N. Y., in 1874, died suddenly in his office on August 8.

Dr. John A. McCreary of Williston, S. C., a graduate of the Medical College of the State of South Carolina, Charleston, in 1886, died suddenly at his home on August 9.

Dr. Edmund C. Allard of Fond du Lac, Wis., a graduate of the Hahnemann Medical College and Hospital, Chicago, in 1893, died at his home on August 1, after a brief illness, aged forty-six years.

Dr. James Peterson McInerney of St. John, N. B., a graduate of McGill University, Medical Faculty, Montreal, in 1884, died in the General Public Hospital, St. John, on August 8, aged fifty-three years.

Dr. George C. Armstrong of Los Angeles, Cal., a graduate of the Northwestern University Medical School, Chicago, in 1899, and a recently appointed instructor in the University of California, died at his home, on August 4, aged forty-two years.

Dr. William Francis Fordham of Pensacola, Fla., a graduate of the Medical Department of the University of Alabama, Mobile, in 1875, died at his home after a long illness, on August 8, aged fifty-eight years.

Dr. Oscar C. Collins of Forsyth, Ga., a graduate of the New York University Medical College, New York, in 1860, and a member of the Georgia State and Monroe County Medical Societies, died at his home on August 5, aged seventy-five years.

Dr. B. L. W. Theodore Hansmann of Washington, a graduate of the University of Göttingen, Prussia, in 1850, who numbered among his former patients President Lincoln and Mr. Carl Schurz, died at his home, on August 13, aged ninety-one years.

Correspondence.

ZINC OXIDE AS A DEODORANT.

To the Editor of the Medical Record:

Sir:—In the course of treating leg ulcers at the Harlem Hospital by Dr. Oehs' method of dry zinc oxide, pulverized, followed by a wet boric acid dressing, we made a discovery that was rather surprising. We had a case that was particularly atrocious. The patient was a woman with three large, clean-cut ulcers on one leg in a markedly inflammatory area. On the other leg was a single ulcer, two and one-half inches in diameter. All these lesions emitted a terrific ordor—an odor so nauseating that it has on more than one occasion cleared the room of other patients and almost prostrated the nurse. This woman gave a positive Wassermann and luetin reaction, and for a long time we treated her along specific lines, all to no avail. She received one salvarsan injection, and after it the ulcers seemed to run wild, and the inflammatory zone became more extensive and acute. The ulcerations took on a more malignant aspect, and the odor, which we thought impossible of accentuation, grew positively unbearable. Driven to desperation, I suggested to Dr. Oehs that we try his method with zinc oxide and boric acid lotion, with little hope, it is true, but still with the fighting instinct to keep on trying. I filled the mephitic excavations with zinc oxide powder, flush with the surface of the surrounding skin, applied a bandage from toes to knees, and had the patient keep it wet with 10% of boric acid lotion. She returned after two days, and *mirabile dictu*, there was no odor whatever! The patient complained pretty bitterly of pain, but the odor was only a memory. The ulcers, too, were in very much better condition. We reapplied the dressing as before. She moaned with pain, but after two days more still greater improvement was noted in the appearance of the lesions. I am not giving at this time an outline of Dr. Oehs' treatment for these ulcers of the leg, which has appeared elsewhere over his own signature. I am simply calling attention to the remarkably deodorant qualities of the zinc oxide. The wet boric acid dressing was not the responsible factor, because it had been used before alone and the odor had remained as vile as ever. The result could be attributed to nothing but the zinc oxide. It might be worth while to remember this, for conditions might arise where other deodorants would be inadmissible, and zinc oxide could be employed with much satisfaction. Of course, it is possible that this effect of zinc oxide has been discovered by others. In that case it is not amiss to emphasize it and bring it to the attention of those who may have overlooked it.

W. P. Cunningham, M.D.,

Clinical Ass't N. Y. Skin and Cancer Hospital, Ass't. Physician Dermatological Dept., Harlem Hospital; Clinical Lecturer in Dermatology Fordham University.

PRIORITY IN THE USE OF SODIUM CARBONATE IN THE TREATMENT OF NEPHRITIS.

To the Editor of the Medical Record:

Sir:—In the *Medical Herald*, March, 1910, page 133, I published an article (which was not indexed) entitled "The Treatment of Chronic Nephritis With Sodium Carbonate (NA_2CO_3) and the Uremic Convulsions With Calcium," wherein I stated albumin and casts are lessened, edema is overcome, the retained phosphates and chlorides are thrown out, they being irritants to the kidney, blood pressure is lowered, and the symptoms are mitigated by the use of sodium carbonate; and convulsions are stopped by the use of lime water in the rectum, the calcium quieting the nervous system. The treatment of nephritis with sodium carbonate has been tried by German and American authorities with success, but credit has not been given to the originator—myself.

Chas. F. d'Artois-Francis.

951 St. Mark's Ave., Brooklyn, N. Y.

OUR LONDON LETTER.

(From Our Regular Correspondent.)

B. M. A. MEETING AT LIVERPOOL—OTHER MEETINGS—EUGENICS CONGRESS.

London, August 2, 1912.

Medical gossip is largely concerned with the meeting of the B. M. A. The question whether the division into twenty sections is an advantage or otherwise depends on the intention of the individual attending. To the general public it is certainly not inviting to listen to two or three experts or rivals in any specialty thrashing out their differences or complimenting each other. This obviously accounts for the miserable appearance of some sections reported to me. The subjects of some on the other hand were well worth the consideration of all practitioners. The general meetings were occupied with political questions of a more engrossing kind than usual. They were dealt with by the representatives of the new organization which nominally controls the council and determines the policy. But neither

give complete satisfaction and there are constant complaints of misrepresentation. Not a few members would like to have a voice such as they had under the old constitution. But with the present conflict with government on hand they will do nothing.

Many interesting questions arose at the meeting, both in the formal proceedings and outside them, which are being talked over by returned members. The annual dinner, the amusements and the excursions are among them, but will hardly interest your readers, for I am assured they may all be summed up in the words "as usual" and "Liverpool equaled and even exceeded herself."

Dr. Robert Reutoul is a well known Liverpool man who for some twenty-five years has advocated a public medical service under professional control. Recent events have naturally enforced more attention to the matter and his particular scheme is being regarded more favorably. It would almost certainly be more acceptable than the government proposals and the results would probably be better. Nationalization of medicine, he believed, was not so far off as many supposed. There has been for a long period an increase in the number of medical officials and now the government is ready to provide 14,000,000 of the population with medical attendance. He thought the minimum payment demanded by the B. M. A. too small and would raise it to about 11s. To meet Mr. Lloyd George's objection he suggested that each insured person should contribute 1 penny per week, the commissioners to give 6s. and 2s. 6d. for medicines to either the chemist or doctor as agreed to in different localities.

There were objections put forward of course. Dr. F. Rees was shocked at syndicalist ideas being promoted in the profession. Members of any industry ought not to have full control of it, for they would do so in their own interests. The state should pay the profession, taking the funds from the well-to-do.

Mr. Ballance described a public medical service established and carried on in Norwich by the local profession. Dr. Wallace described a system lately arranged in Leicester. A number of suggestions were made as to the question of how far state control was necessary or desirable and both in the meetings and outside there was no little difference of opinion evinced.

In the Roman Catholic Pro-cathedral there was a special service at which a short address was given by Father Lucas, who hoped Liverpool would have a Catholic hospital with branches enough to accommodate every Catholic patient in the city. Hospitals have been established on many bases, but a sectarian one does not seem desirable.

There was a meeting of medical members of the Guild of St. Luke, a Catholic body, which made strong protest against the proposals of some eugenists for sterilizing the unfit. They held the human body to be sacred and inviolate. They thought degeneration in some cases admissible. But the causes of mental dificiency they held should be attacked in their relation to defects in our social organization.

The Irish Graduates held their usual convivial meeting—the luncheon or little dinner, according to the one who tells you the tale. They drank two toasts, the B. M. A. and their noble selves. At the first a guest wanted to discuss the policy of the association, but was finally suppressed by the chairman, who declined to allow any speeches beyond proposer and seconder. "I cannot permit any extraneous matter," said he. "But, Mr. Chairman," scornfully retorted the would-be speaker, "this is not a meeting of the British Medical or of the Primrose Dames."

A young man was introduced by Dr. Manson with the rare abnormality of transposed organs, his heart, liver, and stomach being each on the side opposite to the normal. He is not left-handed, is quite healthy, physically well developed, and is a member of the Territorial Force. Some *x*-ray photos of the visitor were taken.

On Monday Prince Arthur of Connaught opened the Health Exhibition of the Royal Sanitary Institute, which is an important feature of the annual meeting. It is held this year at York, the last meeting in that city having been twenty-five years ago. Nearly 600 delegates are expected from the army, navy, lunacy commissioners, and numerous sanitary associations and academical municipal bodies.

The Royal Institute of Public Health have held their annual meeting at Berlin at the invitation of that city. It is pronounced a success both as a scientific and social congress. The council announced that they had awarded the Harben gold medal to Professor Roux of the Pasteur Institute, Paris.

The first installment of statistics of the last census has been issued. It shows that on the census night there were more females than males.

On Tuesday the Lord Mayor presided at the meeting of the Hospital Sunday Fund held at the Mansion House. The distribution committee reported that £52,294 was available and that 257 institutions had applied for grants. It had been reported that one dispensary would participate in kinematograph shows held on Sunday, but it had not done so. They were informed that no grant would be given if it did, a natural decision considering that all the funds came from Sunday collections at places of worship.

The Lord Mayor had visited St. George's Hospital and found the account between the hospital and school was properly kept and the school did not take part of the subscribed fund beyond expense incurred for it. The distribution proposed was agreed to. Seven and a half per cent. was for surgical appliances and 2½ per cent. for district nursing societies.

The Parliamentary Committee on Patent Medicines has had brought before it by the White Cross League a number of objectionable advertisements of drugs and appliances taken mostly from provincial newspapers. Many are open incitements to illegal practices. Some vendors of these things distribute circulars concerning them by post or hand to houses throughout towns and districts. It is to be hoped the committee may see some way of checking this abuse.

The Royal Commission on University Education has issued a report of the evidence taken before it from October last to January, both months inclusive. Among the witnesses were the presidents of the royal colleges of physicians and surgeons and representatives of medical schools. The schools have done their work well, but the University of London too long acted as a mere examining body.

The International Eugenics Congress has been competing this week with the numerous other conferences held at this time of year for the attention of the press, the public, and the profession. As its name implies, it is really international, for France,

Italy, Germany, and Sweden sent its representatives to London, and one of the largest contingents came from the United States. The meetings were held in the University of London and Major L. Darwin presided. He defined eugenics as the practical application of the principle of evolution and declared that the nation which first took in hand the replacement of natural selection by conscious selection would lead in international rivalry. There was much talk on heredity and the effects of epilepsy, feeble mindedness, and mental as well as physical defects on the children of parents affected in these and other ways.

Dr. Raymond Pearl (of Main Experimental Station) contributed the results of investigations as to the fecundity of fowls and its inheritance in a paper which Professor Punnett of Cambridge declared to be the most important submitted to the congress. Professor Punnett himself considered the one point of eugenic importance that could for the present be controlled was feeble mindedness, which he apparently regards as a case of Mendelian inheritance. Dr. Weeks of New Jersey State Village for Epileptics said that sufferers from ordinary epilepsy lacked some element which was essential for complete mental development and the same was the case with the feeble minded. He laid down that if a father and mother were both either epileptic or feeble minded the child would be mentally defective; that epileptics in successive generations tend to become a larger part of the population; that normal parents of epileptics are not in reality quite normal and have descended from tainted ancestors. Professor A. Mooro of Turin limited the period of perfect development to the years from twenty-six to forty, when decadence began. Crimes of personal violence he found committed by the children of aged parents more often than by others. Insanity, too, was more frequent in children of parents too young or too old.

A rather remarkable paper was read by Schiller supporting the position that civilization is actually a degenerating force and that eugenics must be looked to for the counteracting influence.

Extravagant as this may appear, it is no measure of the claims put forward by these enthusiastic congressists for their favorite study, which from some of their statements might be supposed to lie at the base of all the sciences or at least compete with gravitation in the physical and morality in the spiritual sphere. In the papers brought forward the relations to public hygiene, history, militarism, civil and political economy were pointed out as of the greatest importance. As to education it should be under the control of eugenics, for which chairs should at once be provided in all universities to teach the coming generation. As to our art, it is touched in all directions, whether biological or pathological. Special are the relations with epilepsy, neuroses, and neurotic tendencies, degeneracy, alcoholism, mental defects, including insanity—in fact instead of being auxiliary to medicine eugenics would seem to claim to reverse the position.

Primary Carcinoma of the Lung.—A. T. Henrici states that this is a rare affection, occurring approximately once in sixteen hundred autopsies. (2) Probably the majority of so-called cancers of the lung are in reality of bronchial origin. (3) Squamous celled cancers of the lung probably arise in the majority of cases from bronchial epithelium which has undergone a metaplasia. (4) Some of these tumors apparently invade the lung along the alveolar wall, retaining the alveolar septa as stroma.—*Journal of Medical Research.*

OUR LETTER FROM THE PHILIPPINES.

(From Our Regular Correspondent.)

REAPPEARANCE OF THE PLAGUE—AGE OF LEPERS—INCREASE IN GENERAL MORTALITY FOLLOWING CONTAMINATION OF THE WATER SUPPLY—A STUDY OF INFANT MORTALITY.

MANILA, June 28, 1912.

AFTER an absence of seven years among human beings, and six years among rats, plague was again found in the Philippine Islands on June 19th. A Filipino employed in Manila as a watchman at 635 San Jacinto, in the Chinese district, and who resided on Calle Antonio Rivera, was found dead in his home on the date mentioned above. The history of the case showed that he had been ill three days. On post-mortem examination, the typical plague buboes were found in the right groin and right axilla. Smears made from the spleen showed bi-polar staining organisms, and inoculations made into guinea pigs resulted in typical attacks of plague, and the organism which was recovered from the guinea pigs agglutinated with plague serum. The manner in which the infection was contracted is not known. The nearest known focus of plague is at Hongkong, and there is no evidence to show that this man had been out of the country during the past few years. Test examinations of rats are made regularly, at weekly intervals, throughout the year, and the reports on these have always been negative. Examinations of many hundreds of rats caught in the vicinity of the place where the man died, and where he worked, have failed to show any plague-infected rats.

The second case occurred on June 26th, in the person of a Filipino woman, aged 44 years. She was found alive, in her house, and had been ill for three days. At the time she was transferred to the San Lazaro plague hospital she had a temperature of 41° C. and was in a dying condition. The autopsy showed only slightly enlarged glands in the left groin. There was no macroscopical change in the spleen, nor were the other post-mortem findings of plague encountered. Smear preparations made from the glands, and from sections of the spleen, were gram negative, and showed bi-polar staining bacilli. Inoculations from this last case have been made into guinea pigs, but as yet it is too early to know the result thereof. This woman, from reliable evidence, had also not been out of the Philippine Islands during the past few years. In a nearby food store, where the woman is known to have purchased her food supplies, four dead rats were found. These were taken to the Bureau of Science for diagnosis. The post-mortem findings were negative, but material from suspected glands were inoculated into guinea pigs, and the results are being awaited.

In view of the fact that the death rate of the city is rather below normal, for this time of the year, and that the cases have occurred in residents of the city, would seem to indicate that the infection is not serious, and also that it was not introduced by human beings.

Speculating upon the mode of introduction of the disease, it seems most likely that it was introduced by sick rats which came in cargo, like crates of onions, potatoes, baskets of eggs, garlic, and similar food stuffs which arrive almost daily in large quantities from China, Japan, and other plague-infected countries. It seems quite possible that a plague-infected rat may have made its escape

from one of these containers after it arrived in Manila, and thus infected other rats. Three gangs of rat catchers have now been at work one week, and enormous numbers of rats are being caught, but, so far, no plague infection has been found among them.

An analysis of the ages of 2,556 lepers confined at the Culion Leper Colony gives most interesting results. There are three lepers under three years of age. The number gradually increases to the age of 17, at which age there are 63. The incidence, between 17 and 18 years of age, almost doubles itself, the number of lepers 18 years of age being 106. The largest number, 139, occurs at 21 years of age, and after the 24th year, at which there are 102 lepers, the number gradually declines until the 101st year, of which age there is one leper. Briefly, then, in the seven years which intervene between the seventeenth and twenty-fifth year there are 775 lepers, or almost one-third of the entire number that occur between the third and the 101st year, so that leprosy would appear to be a disease that has its greatest danger for early manhood and early womanhood. As to sex, the proportions which were recorded during the early years among the lepers of the Philippine Islands still hold remarkably true. Of the total number of 2,556, 1,629 are males and 927 are females, so that, approximately, one-third of the lepers are women and two-thirds men.

The recent experiences had in Manila with the mortality rates during the time that the water was being used from the Mariquina River affords apparently a striking confirmation of Hayem's theory. It will, perhaps, be remembered that Manila's water supply is derived from the Montalban reservoir, which impounds water from an uninhabited watershed, but owing to the unusually severe drought, the like of which has not occurred in the Philippines for over fifty years, this supply became exhausted, and the old (Spanish) source for water had to be resorted to. The use of the Mariquina water was begun on March 9th, and was discontinued on May 24th. Based upon an average of the deaths for 1909, 1910, and 1911, the normal deaths for March would have been 611; for April, 564, and for May, 585, or a total of 1,760. This year for March it was 814; for April, 767, and for May, 782, or a total of 2,363. This is an increase of 603 above the average rate. The increase in the number of deaths was found principally among the following:

	Increase.
Dysentery	18
Enteric fever	15
Tuberculosis of the lungs	33
Meningitis	15
Bronchitis, acute	114
Bronchitis, chronic	14
Broncho-pneumonia	99
Pneumonia	28
Diarrhea and enteritis	17
	353

It will be noted that over half the increase occurs in the so-called water-borne diseases—bronchitis, acute and chronic, and meningitis, also show a large increase, but, as past investigation has shown, these diseases are generally of a gastrointestinal nature and are misdiagnosed under the above heads, but the remaining 250 deaths occurred among general diseases other than the water-borne, and strikingly confirm Hayem's observations.

The increase in the death rate is also interesting because well-informed observers had concluded that, as the inhabitants that live above the intake do not create any sewage which finds its way into the stream and as there were no rains to carry surface drainage which might cause pollution, no increase in the death rate was to be expected. When it is remembered that the Montalban supply of Manila, which comes from an uninhabited water-shed, is not filtered, and has not been regarded as a very good water from a bacteriological standpoint, it is all the more striking that water taken from an inhabited water-shed, and which from a laboratory standpoint is not very much inferior, should show such a large increase in the death rate. During the period that the Mariquina River water was used a test was made of copper sulphate and of calcium hypochlorite in the Manila water supply, in the proportions of one to three million, in order to determine their value in reducing the number of bacteria present. Apparently, the calcium hypochlorite in the Manila water supply, in the proportions given above, had no marked effect. The copper sulphate showed marked germicidal properties. The average number of bacteria during the time the copper sulphate was used did not exceed, during the first week, 400 per cc. The second week there were, apparently, unusual sources of pollution present, because colon organisms were found three days in succession, and the bacterial count on one day reached the large figures of 4,900. There was then a rapid reduction until the number reached 1,000. Calcium hypochlorite was then used, and the number of bacteria rapidly increased to 4,000 per cc., and with one or two exceptions remained near the 3,000 mark during the entire period of 13 days during which this chemical was used. Copper sulphate was then again used, in the proportion of one to three million, and a rapid reduction in the number of bacteria took place. There were occasionally as many as 1,000, but the average number was about 500. Since May 24 water from Montalban alone has been used, and all chemical germicides have been discontinued, and the bacterial count, with one exception, has remained about at the same figures that obtained during the time that copper sulphate was being used in the Mariquina water.

The last legislature made provision for the appointment of a board to study the question of the high infant mortality, and to make a report to the next legislature upon its conclusions. The Governor-General has just issued an Executive Order naming Dr. W. E. Musgrave, chairman, and Dr. Manuel Guerrero and Dr. Proceso Gabriel, as members.

Progress of Medical Science.

Boston Medical and Surgical Journal.

August 8, 1912.

1. Some Unsolved Problems of Gastro-Enterology. W. B. Cannon.
2. Mexican Scorpions and the Treatment of Scorpion Sting. H. Mills.
3. The Importance of Differentiating Catarrhs of the Large and Small Intestine. A. E. Austin.
4. Traumatic Rupture of the Diaphragm with Other Injuries: Operation; Recovery. F. J. Cotton.
5. Multiple Cramps of Psychogenic Type in a Telegrapher. T. A. Williams.

1. Problems of Gastroenterology.—W. B. Cannon states that observations on lower animals have revealed specially sensitive spots in the back of the mouth, afferent impulses from which liberate the sudden sequence of movements constituting deglutition. According to Kahn the spots are extraordinarily excitable by mechanical stimuli.

Recent investigations have also shown that throughout that part of the alimentary canal which is provided with smooth muscle a reflex is present such that a stimulus at any point provokes contraction above and relaxation below. This "myenteric reflex" is operative at the cardiac sphincter, for acid below, in the stomach, causes contraction at the cardia; it is operative at the pyloric sphincter, for acid in the stomach opens, and acid in the duodenum closes, the pyloric orifice; and the reflex is also manifested in the propulsive peristalsis, or diastalsis as the author prefers to call it, in the small and large intestines. The work of London and his associates indicates also that foodstuffs are absorbed at different rates at different parts of the tube—meat most in the upper part, starch and fat most in the lower part—and that in each portion of the tract, in the case of any particular food, a constant percentage amount is absorbed, quite independent of the amount fed. One of the most important investigations in the domain of gastroenterology is that which has indicated the fundamental importance of tonus for the movements of the alimentary canal. If the tonic state is absent, the movements will not occur; if the tonic state is too great, they will not occur; if there is a proper relation between the tonic state and internal pressure, i. e., if the proper tension is developed, then the various obvious movements naturally result.

2. Scorpion Stings and Their Treatment.—L. H. Mills presents a careful study of the effects of scorpion stings as observed by him in Mexico, and of their treatment. He has found that the sting of a scorpion can cause death in animals and in man. The effects produced by the sting of a scorpion depend upon (1) the species of scorpion, (2) the natural resistance of the victim, (3) his age, (4) his condition of health, (5) the time of year, (6) the degree of exhaustion of the scorpion's poison gland, (7) the time elapsing before treatment is received, (8) the treatment itself. Certain human beings appear to have a natural resistance to scorpion poison. There is no proof that immunity to this poison can be acquired by repeated inoculations. Scorpions' blood contains protective substances which render the scorpion immune to its own poison. These substances, if injected early and in sufficient quanity, aid markedly and promptly in relieving the urgent symptoms in human beings following scorpion sting. At present the use of scorpions' blood in quantity is impractical. It is not yet proven that the injection of the blood or of the extract of the bodies of one species of scorpion will aid in producing resistance to the poison of all other species. The conditions following severe poisoning by a virulent scorpion are, symptomatically and pathologically, those of a grave serous meningitis. The treatment of scorpion sting varies with the severity of the symptoms. In general it consists of: (1) Simple incision and the local use of evaporating lotions. (2) In severe cases, incision, combined with lumbar puncture, which may be repeated if necessary, and the repeated hypodermic injection of scorpion blood to total about 1 c.c. per kilo of body weight. (3) The internal administration of stimulants such as black coffee and aromatic spirit of ammonia, or hypodermic and rectal stimulation if the patient is unconscious.

3. Differentiation of Catarrh of the Large and Small Intestines.—A. E. Austin notes that diarrhea does not always indicate an intestinal catarrh nor does constipation exclude it. Nothnagel's classification is as follows: (1) Constipation with pure colon catarrh, (2) diarrhea with catarrh of the small intestine, (3) alternation of diarrhea and constipation, (4) usual number of stools daily, but these are mushy or pasty. The last two forms are more often associated with a combined catarrh of both divisions of the intestinal tract. The microscope and colon washing have added much to the accuracy of this localization. If mucus is abundant, but no food remnants remain in the stool on microscopic examination, one is assured that the colon only is affected. If both food remnants and abundant mucus are present, one is not so sure of the involvement of the colon in the process. This one can ascertain by attaching a glass funnel to a colon tube which is introduced as far as water will flow through it—if passed too far it will reach the sigmoid and double on itself—and after pouring a pint of water into the funnel, letting it run into the intestine an dby lowering the funnel run out several times; practically no feces will come out, but if there is a colon catarrh, each time the water flows out, it will be found to be more and more filled with shreds of mucus, which float about in it. If one of these shreds be placed upon a slide and a little coloring agent consisting of a mixture of brilliant green, 0.6; neutral red, 0.3, and water, 30, be added, the mucus and the epithelial cells will be distinctly stained, the mucus red, and the cells, green, except the nuclei, if they contain them, which will be red again. This presence of nucleated cells is the best proof of the origin of the cells from the colon, since if they come from the small intestine the nuclei are usually destroyed by digestion.

New York Medical Journal.

August 10, 1912.

1. The Proteins. D. Van Slyke.
2. Comparative Value of Physical Signs and the X-Ray in Determining Chest Conditions. E. A. Miller and A. J. Quimby.
3. Heath's Conservative Mastoid Operation and Its Pathological Foundation. F. A. Leslie.
4. A Sketch of the Cancer Question to Date. E. E. Hubbard.
5. Ten Sex Talks to Girls. III. I. D. Steinhardt.
6. Tuberculous Meningitis. H. Rabinowitsch.
7. Antivaccination and the Medical Profession. I. W. Brewer.
8. Prenatal Influences. L. D. McEvoy.

1. The Proteins.—D. D. Van Slyke notes that the present conception of the structure of the proteins is due essentially to the work of Emil Fischer and of those who were either directed or inspired by him. Stating this conception briefly: the proteins are combinations of the $^{\alpha}$-amino acids which are linked together in chains by condensation between the carboxyl and amino groups of the different acids. That is, the NH_2 group of one amino acid and the COOH group of another combine with elimination of H_2O, and are bound together by a $-CO-NH-$ bridge, or *peptid linking*. Any number of amino acids can be thus, so to say, dovetailed to form chains of unlimited length, and such great molecules as we meet in the proteins. Every known property of the proteins is consistent with this theory, and while the structure of a single protein has not yet been worked out in absolute completeness, yet one may say that the existence of this type of structure in the protein molecule has been definitely proved by the methods of both synthesis and analysis. The first point required to prove Fischer's theory was demonstration of the fact that the proteins actually consist of amino acids in combination. Demonstration of the manner in which the amino acids are bound together forms the second step.

2. Physical Signs and X-Rays in Chest Conditions.—E. A. Miller and S. J. Quimby state that the cases in which radiology is especially valuable in making a diagnosis of pulmonary tuberculosis, before the disease may be determined by physical signs, may be classed as follows: group A, in which there are areas of infiltration; group B, in which scattering glands are infected. Under group A three areas are generally considered by diagnosticians, the apex or subclavicular fossa, the subscapular area or root, and the base. The subscapular area is more commonly the first area affected than has been generally noted. And in this area also the physical signs are more obscured by the chest wall. In some cases an extensive process on one side may be continued for some months with fibrosis, which has escaped notice till a more acute process on the opposite side calls attention to the case, and at such times the more

serious lesion gives no distinguishable signs. The cases in which a few miliary tubercles in various parts of the parenchyma are plainly visible usually give but a few râles and no impairment of resonance, but, as it is possible to show on the radiographic plate tubercles much smaller than a pea, and the appearance is quite characteristic, these cases form a most important part of this group. Several cases have also been encountered in which considerable areas of infiltration near the hilum with overlying normal or emphysematous lung tissue, gave no appreciable signs at the time of the first examination. In other cases conglomerate masses of appreciable size, in which one part was in the stage of infiltration, and other areas in the fibrous stage, so masked the physical signs when the lesion occurred near the base or around the heart border, or in muscular individuals, that the radiograph was the determining factor in diagnosis. Group B: While it has long been known from autopsy findings that a large proportion of the inhabitants of cities have at some time had an unrecognized tuberculous infection of some pulmonary glands, it is now possible not only to determine the extent of such infection, but also to observe an infiltrated area around their sharply defined border at an early stage when breaking down occurs. Another class of incipient cases in which the radiograph is valuable may be divided between groups A and B. In these cases the tuberculous process is secondary to, or superimposed on some other disease, as bronchitis or pneumonia.

4. The Cancer Question.—E. E. Hubbard reviews the various theories that have been advanced to explain the origin of cancer. He notes that in looking over the histories of more than a year's work at the General Hospital of Kansas City, Mo., he has found eosinophilia recorded in every case in which a differential count had been made. This suggests a possible parasitic origin of cancer.

Journal of the American Medical Association.

August 10, 1912.

1. The Problem of the Public Health. R. Blue.
2. Psoriasis Familialis. F. C. Knowles.
3. Lactic Acid and Colonic Irrigation in the Treatment of Psoriasis. J. M. Winfield.
4. The Relation of Aortitis to Syphilis and the Importance of Its Recognition. C. L. Cummer and R. Dexter.
5. Fischer's Theory of Edema and Nephritis. A. R. Moore.
6. The Hospital's Need of a Dental Staff. A. J. Flanagan.
7. Cleft Palates: With Special Reference to the Closing of a Surgical Cleft by the Use of a Dental Appliance. H. S. Haslett.
8. Acute Osteomyelitis of the Jaw. W. W. Babcock.
9. The Duboscq Colorimeter as a Means of Estimating Hemalysis in the Wassermann Reaction. R. H. Ivy.
10. An Operation for Pott's Disease of the Spine. R. H. Hibbs.
11. Physical Injuries as Results of Hydrofluoric Acid. L. H. Branson.
12. Thrombophlebitis of the Left Leg. H. D. Kistler.
13. A New Simple Apparatus for the Intravenous Administration of Salvarsan with Saline Solution Preceeding and Following. O. L. Suggett.
14. A Pocket-Case for Full Blood-Pipets. G. W. Graves.
15. Determination of End-Reaction in Estimation of Glucose. F. Brinton Jacobs.
16. A New Method of Using Fehling's Solution. J. W. Hunter.
17. A Method by Which Living Organisms Can Be Photographed. K. Taylor.
18. A Case of Unsuspected Melanosarcoma of the Chorioid. Clinical Report by C. R. Heed, Pathological Report by S. L. Olsho.
19. Sarcoma of the Cerebellum in a Boy. A. W. Hawley and B. Manning.
20. A Case of Ectopic Gestation at Full Term with Fetus Carried in Abdomen for Thirty-five Years. F. N. Yeager.
21. A Virulent Case of Epidemic Cerebrospinal Meningitis; Four Hundred and Twenty Cubic Centimeters of Serum Administered; Recovery. A. A. Herold.
22. A Disturbing Factor in Lieben's and in Gunning's Test for Acetone in Urine. J. Rosenbloom.
23. Syphilis Complicated with Uncinariasis. T. W. Dorsett.
24. Spirochetes in the Mouth. A. A. Thibaudeau.
25. A Simple Refrigerator for Laboratory Workers. L. O. Thompson.

2. Psoriasis Familialis.—F. C. Knowles concludes that psoriasis is not an hereditary disease. Very seldom is there found more than one case in a family. The author has been able to discover but six instances in hundreds of cases examined. Psoriasis familialis has been very little touched on in dermatological literature. The etiology of psoriasis is as yet to be ascertained, but cumulative evidence points strongly toward a parasitic origin.

3. Treatment of Psoriasis.—Winfield states that while the parasitic theory of psoriasis has much in its support, the belief that this disease is the expression of some disturbance in metabolism seems to be nearer to the solution of the problem. Acting on this supposition he has for some years been treating his patients with lactic acid and colonic irrigation, assuming that the intestinal autointoxication was an etiological factor of the disease. Lactic acid disinfects the alimentary canal by its antiseptic action; colonic irrigation washes out decomposing matters, stimulates peristalsis, improves the intestinal circulation, relieves passive inflammatory conditions, and increases the skin resistance by improving general health. Analysis of his cases, forty in number, is given by the author. In twenty-three cases the attack was cured and in sixteen there was improvement. Thirty of the cases had only lactic acid and irrigations; in the other ten chrysarobin ointment was also used. The general results were far better than when the other well-known measures were employed.

4. Relation of Aortitis to Syphilis.—By C. L. Cummer and R. Dexter. (See MEDICAL RECORD, June 8, 1912, page 1115.)

8. Acute Osteomyelitis of the Jaw.—W. W. Babcock states that osteomyelitis in the young occurs in the lower jaw as well as in the long bones of the extremities, although at a somewhat later age. Its early diagnosis is to be based on the early severe, systemic disturbance, and the widespread involvement of the bone. The prophylactic treatment consists in drilling the bone under aseptic precautions. After the formation of pus, free drainage should be employed which should be external if there be much necrosis. No teeth should be extracted nor should teeth which merely hang from attached mucous membrane be removed. Dead portions of bone should not be removed until entirely detached or until new bone capable of maintaining the contour of the jaw is formed. Separated and loosened teeth with gum attachment usually become reimbedded and serviceable.

10. Operative Treatment of Pott's Disease.—By R. A. Hibbs. (See MEDICAL RECORD, June 29, 1912, page 1250.)

12. Thrombophlebitis of the Left Leg.—By H. D. Kistler. (See MEDICAL RECORD, June 29, 1912, page 1250.)

18. Melanosarcoma of the Chorioid.—C. R. Heed and S. L. Olsho report a case of melanosarcoma of the chloroid, in which the condition was unsuspected by the patient for the time and unrecognized by the physician, the symptoms being those of iritis with diminished intraocular tension, whereas one would expect those of glaucoma with increased tension. The patient became blind in one eye from a blow by the fist, without suffering any ocular pain, except for a short time, until a year later. The onset of ocular pain was sudden, extending from the temporal side of the blind eye to the back of the head and rapidly grew worse. The correct diagnosis was made on pathological examination of the enucleated eye. The case emphasizes the necessity of enucleating blind eyes which are giving pain.

20. Full-Term Ectopic Gestation with Fetus Carried in Abdomen for Thirty-five Years.—F. N. Yeager reports the case of a woman, aged 72, from whom a fetus of a female child at full term was taken at autopsy. It was enveloped by a very tough calcified membrane, too hard to be cut with a knife, attached to the right ovary. The history of the case showed that the patient had expected confinement in August, 1877, and had evidently had an extrauterine pregnancy which then had come to term but was not operated on. The atrophied uterus was found firmly attached to the lower part of the cyst containing the fetus. The placenta, which was probably attached to the intestines, had evidently been absorbed, as no remnants of it could be discovered.

The Lancet.

August 3, 1912.

1. The Integration of the "Social Organism." Sir T. Clifford Allbutt.
2. Cases Illustrating the Value of an Examination of the Blood. E. H. Shaw.
3. A Municipal Dispensary and Tuberculin Treatment. A. M. Fraser and H. Clark.
4. The Treatment of Habitual Dislocation of the Shoulder Joint. E. D. Telford.
5. Some Observations Concerning Syphilitic Sera. C. Russ.
6. Observations on the Neuron. H. Campbell.

1. Integration of the Social Organism.—Sir T. Clifford Allbutt points out that the modern state is passing away from the dictatorial to the sympathetic stage. In the internal affairs of social bodies the people will no longer be guided by principles of unmitigated individual competition. Competition is now less between individuals than between states, between the several social organisms; and that state will survive which has the strongest internal coherence, the freest play among its units and the readiest sensitiveness to readjustment. Many things are coming about in a few years, by sympathy and the social soul, that by heredity could have been compassed only by the waste of generations. We were told on one hand that only by the slow eliminating process of the ages could persons who craved for alcohol be weeded out; yet what are the facts? In the span of the author's lifetime the social conscience has done more to weed out drunkenness than many a generation of the hereditary plough. For we inherit not form only; we inherit also the law of organic memory, a capacity of making habit; and this capacity in every man by the pressure and conventions of the social hive can be redirected and reinforced in geometrical ratio. How long does it take to convert an English or a German stock into an American? May not the same kind of disinterested motive and of formative memory do more than heredity to deal also with cripples, paupers, culprits, and moral and physical incurables of many sorts, and do it more quickly? Humanity has cared for the weak instead of eliminating them, under the instinct, which reflection is making clearer, that thus it is promoting the social coherence by which the survival of a nation is to be established.

3. A Municipal Dispensary and Tuberculin Treatment.—A. M. Fraser and H. Clark describe the lines of treatment that they have adopted at the Portsmouth municipal tuberculin dispensary. The cases are considered in seven classes: Class 1 ("contact").—Advice is given as to hygiene and safeguards from further infection if the individual is still living with an infective case. In a few cases with bad family history, a short course of tuberculin is given. Class 2 ("probably phthisical").—If symptoms are not relieved by attention to the teeth and hygiene a course of tuberculin is given. This has generally relieved the symptoms and encouraged the patients, and has often led to the discovery of a more urgent case among friends or relations who have applied in order to have similar symptoms relieved. Class 3 ("early, slight").—These cases are treated first at the dispensary, except in an occasional case where, for special reasons, it is inadvisable for the patient to remain at home. The majority are able to work and can be restored to health, and the disease arrested, without any further measures. A few cases fail to respond, and need to be sent to a sanatorium. Class 4 ("early acute").—These cases are generally supposed to need institutional treatment, and for a considerable number this is undoubtedly advisable. It is, however, surprising how many improve sufficiently with a few weeks' rest at home to attend the dispensary, and then do perfectly well without ever going away. Class 5 ("chronic, slight").—These patients do well at dispensary. Class 6 ("chronic, advanced").—This includes a variety of conditions, and it is difficult to generalize about them. Many do surprisingly well at the dispensary, especially if at some period of their treatment they can have a short stay at a sanatorium. Class 7 ("severe").—If hospital accommodation can be provided for these cases and tuberculin used when possible, some will be found to respond. Some of the most striking results are obtained in this class, but it must be remembered that it is in this class that every method of treatment, as also nature unaided, has obtained an occasional miracle.

4. Treatment of Habitual Dislocation of the Shoulder Joint.—E. D. Telford states that in dealing with a condition such as habitual dislocation, dependent as it is upon mechanical alterations in or around the shoulder joint, it is evident that no treatment short of operation will be of any value. Any appliance which may be designed to control the dislocation must involve a limitation of movement so great that the appliance becomes as irksome and intolerable as the disease itself. Assuming that operative treatment offers the only hope of success, the choice will lay between excision of the head of the humerus and the operation of capsulorrhaphy. Excision, although it appears to have given very good results, is a needlessly severe operation, and should not be adopted as the first line of treatment. It may be that some cases, in which the lesion is dependent on gross damage to the humeral head, will require excision, but in general the operation of capsulorrhaphy is the simpler and gives the better result. Capsulorrhaphy was first done by Gerster in 1883, followed by Bardenheuer in 1886, and was fully described by Burrell in 1895. The aim of the operation is to reef the overstretched portion of the capsule or, better, to excise a large oval piece and suture the raw edges together. The excision of a portion of the capsule has the great advantage that it allows of a free exploration of the interior of the joint. A review of the reported cases shows that the operation has given most satisfactory results; it has been done some forty times, and while there has been one instance of recurrence of the dislocation, there is no record of ankylosis or other damage to the joint.

British Medical Journal.

August 3, 1912.

Public Medical Service Under Professional Control.
1. A State Medical Service. R. R. Rentoul.
2. National Organization by the Profession. F. Rees.
3. A Public Medical Service. R. W. Henry.

Reform of Hospital Out-Patient Departments.
4. Hospital Reform. M. Dewar.
5. An Inquiry at Liverpool. W. Grisewood.

Administrative Provisions for the Prevention of Malingering.
6. Medical Training for the Detecting of Malingering. A. G. Gullan and M. Dewar.
7. Malingerers and Eye Cases. E. A. Browne.

Capitation Payment versus Payment per Attendance Under the National Insurance Act.
8. A Capitation System. H. Harvey.
9. Payment for Work Done. P. R. Cooper.
10. The Advantage of a Capitation System. A. Stewart and C. E. S. Flemming.

4. Hospital Reform.—M. Dewar discusses the widespread abuse of the privileges of receiving free treatment at dispensaries. He advocates the following measures of reform: (1) A notice: "This voluntary hospital is for those who are unable to pay for medical or surgical treatment" should be placed in all out-patient rooms, and in the convalescent rooms of all the wards. (2) An official should be appointed to supervise the applicants for advice or treatment. This could be done by examining the lists of outpatients each day. Cases of sudden illness, accident, or emergency would not be inquired into till treated and progressing satisfactorily. No standard of wage or rental is suggested, as each case requires to be separately considered, and much would be left to the judgment of this official, under the advice of the medical officers, especially with regard to medical or surgical eligibility. Experience has shown that doubtful cases do not return when it is known there is an inquiry officer. More is expected from the presence of such an officer as a *moral force* than from any action resulting from his inquiries. (3) Evidence of suitability, except in emergency cases, should be obtained on two points: (*a*) that the patient cannot pay; (*b*) that

the case is suitable for hospital treatment. (4) Urgent cases should be attended on first application, and if eligible should be detained for further treatment, but if ineligible should be referred for treatment elsewhere. (5) Trivial cases, after having been seen to, should be referred elsewhere. (6) On first visit all patients should be seen by a registered medical practitioner. (7) The number of cases to be seen by a medical officer on any one day should be limited. (8) Special hospitals should only treat special cases of their kind. (9) Out-patient departments should be chiefly reserved for consultative purposes, and the cases referred back to the general practitioner with a statement of opinion. (10) Poor Law cases should be referred back to the Poor Law medical officer. (11) There should be co-operation of the hospitals in the same area with each other, and with public medical services and dispensaries, to prevent overlapping. Under the national insurance act this would probably become automatic, as all patients received at the out-patient department would have an explanatory note from the doctor for consultative purposes. (12) Notices should be posted in all out-patient departments calling attention to the public medical service or dispensaries.

6. **The Detection of Malingering.**—By A. G. Gullan.
(See page 358.)

Münchener medizinische Wochenschrift.

July 30, 1912.

Epilepsy as a Clinical Disease Conception.—Weber begins a study of this subject and first considers the individual components—convulsions, psychic crises and progressive deterioration. There are many sorts of convulsive manifestations which agree among themselves in being of brief duration and in being attended with loss of consciousness. Another attribute, of course, is involved, to wit, periodicity. A diagnosis cannot be made from one attack. The disturbances of consciousness also occur periodically, and are often wanting in the earlier years. There is more than a simple clouding of consciousness, for the entire conduct may be affected. The spirits are affected in different ways, patients being irritable or depressed. The mental processes are slowed. The mental state during these periods differs notably from the state before or after the latter. The so-called twilight state, however, is not peculiar to epilepsy. In the course of five to ten years the permanent, progressive mental impairment has become evident. Until this does appear we are not justified in speaking of genuine epilepsy. The disease begins in early life. No genuine cases ever set in after the age of thirty years. Not all early epilepsies are genuine—for example, those which develop in alcoholized young soldiers. Some genuine cases begin in very early childhood, others at the first school years, others about puberty. Evidence increases always of the association of epilepsy with histologic changes in the cortex but these the author regards as wholly secondary in most cases. There are exceptions in which the lesions could not have been secondary, for the disease was too recent of evolution. One is cited of a three-year-old boy with unilateral convulsions followed by paralysis, due to encephalitis. The case became one of typical epilepsy, death taking place from status epilepticus in four years. Throughout the convulsions were more pronounced on the left side. Back of all this, however, is convulsibility. Else why do not all cases of encephalitis, meningitis, etc., become epileptics? The article will be continued.

Toxemia of Pregnancy and the Cause of Labor.—Franz, like others, sees an intimate connection between some principle in the blood of the gravida at term which sets up uterine contractions and another principle or group of principles which causes what is termed gravidity toxicosis. In both cases a disintegration of blood albumin is the cause of the toxemia. Of much interest are the unusual degrees of this toxicosis, the visceral degenerations. But we are unable to state yet which is cause and which effect. Is the toxic albumin derived from the visceral degeneration or is the latter due to the former? The author seeks to show that the blood state precedes the visceral change and cites many parallel figures to prove this sequence. The tables give values for albuminuria, edema, urinary toxicity, etc. If the kidneys are sufficiently crippled the phenomena of retention of urinary toxin are superadded. The element of anaphylaxis must also be reckoned with in connection with the toxic decomposition of blood albumin. This element is believed to determine the onset of normal parturition. The actual agent which causes the anaphylaxis and its blood changes is believed to be the placental albumin.

Deutsche medizinische Wochenschrift.

July 25, 1912.

Thyreosis and Anaphylaxis.—Wolfsohn shows that extensive analogies exist between hyperthyreosis and anaphylaxis. Recent studies are tending to show more and more a correspondence in the blood pictures of the two conditions. At least four points of concordance are noted, viz.: leucopenia, mononucleosis, eosinophilia and delayed coagulability. Other points of resemblance are seen in vasomotor excitability, dermographism, urticaria, and transient edema; outbreaks of sweating; bulimia; vomiting and diarrhea; anxiety, hot flushes, tremor, pareses, convulsions, cardiac palpitation, tachycardia, asthma-like attacks, and hemorrhages of the mucosæ. The conclusion seems inevitable, then, that hyperthyreosis *is* an anaphylaxis. Graves' disease of the thyroid, whatever it is, results in the production of a heterologous albumin. Conversely in anaphylaxis of exogenous origin there should be a hyperfunctioning of the thyroid, and perhaps of other glands of internal secretion. This can be almost mathematically shown in iodine anaphylaxis which results in thyreoses. Iodine anaphylaxis does not result if the thyroid is able to detoxicate this substance. In endogenous anaphylaxis from hyperthyreosis it is probably the iodized albumin which behaves as a heterologous albumin. In Graves' disease this iodized albumin is produced in excess.

Alimentary Galactosuria in Neuroses and Hepatic Diseases.—Hirose of Tokio refers to the fact that galactose is more difficult of assimilation than the other dietetic sugars, and is therefore a good measure of carbohydrate tolerance. The limits of assimilation in the fasting state vary from 20 to 40 gm. daily, while that of cane sugar is nearly tenfold as much. It has long been known that subjects with hepatic cirrhosis and catarrhal icterus show very low tolerance for galactose and as there are many cases of hepatic diseases in the author's clinic, a series of tests was made. After fasting with especial reference to cow's milk 25 gm. chemically pure galactose were given, the urine being submitted to a number of tests for this sugar. Twenty-two patients with some form of hepatic disease were examined. Galactosuria was present in cirrhosis and catarrhal icterus, but also in cancer of the liver, cholelithiasis and passive congestion. Hence this test possesses no specific value, but may be a good measure of hepatic insufficiency. The author also tested the reputed tendency to alimentary glycosuria in neuroses and Graves' disease in another series of twenty-two cases. Tolerance was poor in a series of Graves' disease and in neurasthenics. The point is at once suggested that these hepatic cases may have had neurasthenia, or rather that the sugar phenomenon may have had a nervous mechanism; while conversely, the author holds, those neurasthenics who show marked intolerance may suffer from hepatic insufficiency.

Insurance Medicine.

SUGGESTIONS TO MEDICAL EXAMINERS.

BY THE INSURANCE EDITOR.

THE PHYSICAL EXAMINATION.

THE EYES.—Reference to the pupillary reflexes and nervous affections of the eyes will be found in a previous section on the Nervous System.

A large percentage of applicants have ordinary errors of refraction, usually corrected by glasses, which are not of sufficient consequence to report. Actual blindness of both eyes should be reported, as such risks are rejected. In the case of a recent enucleation, the examiner should ascertain the cause and whether the other eye is in danger through sympathetic affection.

Double cataract will usually call for rejection of the risk until after complete recovery from an operation for extraction and a fairly good restoration of the sight. Unilateral cataract is not commonly considered a bar to insurance, if of long standing, if no recent increase in size, if no operation is contemplated, and if the other eye is normal. A cataract of recent appearance leaves more doubt as to the way it is going to conduct itself and whether or not the other eye will be invaded, than one of longer standing.

Subjects with chronic trachoma are not regarded as satisfactory risks and severe cases may meet with refusal. This condition, therefore, should be fully described.

These are the affections the examiners are liable to meet, and, after making a full report, they would better leave the final decison to the home office.

THE EARS.—Chronic deafness without any discharge during the past one or two years will not be a bar to insurance, though it is customary for most companies to charge a slightly increased premium owing to the greater danger incurred in the streets. Deafness should, therefore, be reported with the following details: If not total, can the applicant hear conversation and ordinary street sounds without the aid of artificial appliances? Is there any existing disease of the ear? Is there any history of discharge? If so, give date of last discharge.

There is a slight difference of opinion among the companies in regard to the acceptance of subjects with present or recent otorrhea. It may be generally stated, however, that these risks are insurable if there is no family taint of tuberculosis and favorable answers are received to the following queries:

Is the disease unilateral?

Is the discharge ever purulent, bloody or foul smelling?

Any pain or tenderness?

Furthermore, as the examination of the middle ear is a difficult matter and only of value when made by one with experience in this line, the applicant will be expected to furnish a certificate from a competent aurist comprising answers to the following questions in the case of present or recent otorrhea:

Size of perforation in the drum?

Site of perforation (upper, middle or lower portion—good drainage of the cavity depends upon the site of the opening)?

Any granulations, polypi, caries or involvement of the mastoid cells?

THE SKIN.—The diseases of the skin usually coming to the notice of the examiner are eczema and psoriasis. These troubles are of no importance unless they are persistent and invade large areas, in which case they are often the outward expression of some considerable dyscrasia or constitutional disturbance that may lead to lesions of the viscera and vessels at some future time. For this reason a company may believe it advisable to limit the applicant to an endowment or rated up policy. The examiner, then, should always give the nature, duration, severity, parts effected and the extent of surface involved.

Whenever a skin lesion presents itself, the examiner is expected to go into the case very carefully for the purpose of excluding syphilis, and he should also state that he has done so in his report, whether there is any suspicion or not, so that there will be no doubt in the minds of the staff at the home office.

Scars.—The origin of scars should always be ascertained and reported. The possibility of tuberculosis, syphilis or wounds received in some fracas should be kept in mind while making this inquiry.

MOUTH, TEETH AND TONGUE.—These parts should be looked at, as some indication of digestive disturbances, syphilis, or disease of the nervous system may be discovered which will suggest the advisability of further investigation. The applicant should always be requested to protrude the tongue, so that any tremor of the organ may be detected.

DEFORMITIES.—The loss of a finger or toe is only worth recording as a mark of identification. In the case of an amputation, the point of amputation, date, cause and present condition of the stump should be noted in the report. Always report the fact if the applicant uses artificial limbs, crutches or a cane on account of an amputation of the lower extremity or any other disability.

Curvature of the Spine.—The insurance value of a risk with spinal curvature depends on two conditions:

1st—Was the cause of deformity tubercular or nontubercular?

2d—Is the deformity sufficiently marked to cause undue pressure upon the viscera?

The antero-posterior spinal curvature (kyphosis) is commonly the result of Pott's disease or tuberculosis of the spine, especially when angular. The angularity is often better felt than seen. These cases should be accurately described, as they will usually be rejected at the home office.

Lateral curvature (simple lordosis and scoliosis) will not cause rejection in most companies unless too marked. The authorities at the home office will not get a clear idea of the amount of deformity unless the examiner gives the amount of deviation from the median line by actual measurement as well as other details. Some form of policy will probably be issued to subjects with lateral curvature if the displacement of the bony structures is not enough to cause excessive pressure upon the vital viscera.

Hip Joint Disease.—Having given a full history, the amount of shortening should be ascertained by actual measurement and, at the same time, an inspection should be made for the presence of scars which would indicate that an abscess formed when the disease was active. When possible to obtain a statement from the physician who treated the disease in its early stage this may have to be furnished in order to find out if there was any suspicion of tuberculosis.

The Medical Section of the American Life Convention will meet at the La Salle Hotel, Chicago, Ills., on Tuesday, September 3, 1912. At the meeting the following papers will be read: "Methods of Uranalysis Applicable to Insurance Examinations," by S. H. Baxter of the Northwestern National Life Insurance Company; "Prognostic Significance of Albuminuria and Casts," by C. Nauman McCloud of the Minnesota Mutual Life Insurance Company; "The Wassermann Reaction and Its Value in the Detection of Syphilis," by Amand Ravold of St. Louis; "The Selecting and Training of the Medical Examiner," by E. A. Babler of the International Life Insurance Company. The secretary of the Section is Dr. F. L. B. Jenney, 168 North Michigan avenue, Chicago.

The Detection of Malingering.—A. G. Gullam states that one cannot overestimate the difficulty and importance of making a diagnosis of malingering. Just as the physician should never diagnose hysteria until he has excluded by most careful examinations all forms of organic disease, so should all possible injury and its effects be excluded before the diagnosis of malingering is made. The difficulty of the detection of this condition is greatly enhanced at the present day by the modern press describing in detail ailments and their effect, and by the workingman being often well coached in the symptoms of some brother workman who has been disabled. For the sake of convenience the author divides malingering into three distinct groups, with the following definitions: (1) Feigned sickness or pretended disablement in order to avoid duty and obtain pecuniary benefit. (2) Sickness or disablement produced or prolonged by the individual in order to avoid duty and obtain pecuniary benefit. (3) Sickness or disablement in which the cause is feigned (that is, a false cause is given) in order to obtain pecuniary benefit. Undoubtedly the most difficult cases to eliminate from malingering are those of true traumatic neurasthenia or nervous shock, and it is sometimes very difficult to draw the line of demarcation between these two conditions. The utmost care should be taken in making the diagnosis of either of these conditions, in order that justice may be done. In traumatic neurasthenia definite symptoms of neurasthenia or hysteria are to be found; and there is usually a definite history of direct trauma often causing cerebral or spinal concussion; though sometimes this condition follows a psychical disturbance, such as serious fright. Moreover, not infrequently the patient has a neurotic diathesis, or is an alcoholic subject, or is over 50 years of age. In many of these cases there is some definitely localized hyperesthetic spot, which is quite fixed at the time of examination, and other distinctive manifestations of neurasthenia or hysteria will be found—such as patches of hyperesthesia or anesthesia, paralysis or paresis not limited to nerve distribution, tremor of eyelids or hands, hyperesthesia of the scalp, absence of corneal or conjunctival reflexes, psychical disturbances, etc. In malingering there is one feature which is invariably present—that is, the man is most emphatic as to his "inability to work."—*British Medical Journal*, August 3, 1912.

The Medical Examiner and the Company.—Mr. T. W. Blackburn, Secretary American Life Convention, in discussing the relation of the medical examiner to the contract criticised the ordinary medical examiner somewhat severely. He had observed that the ordinary examiner does no more than the blank makes necessary and that he often guesses at the information which is required to prevent the blank from being returned for correction. It is this personal knowledge of the carelessness and indifference of many physicians which leads some well informed solicitors and some skilled executives to say that if they could remove from the agent the incentive to put through a risk to earn a commission they would rather have the opinion of a live insurance agent upon the insurability of the average applicant than to rely upon the carefully billed medical blank even after it has been approved by the home office medical department. In visiting the companies Mr. Blackburn said that he had constantly met the inquiries, "How are we to improve the grade of medical examiners? How are we to escape the moral hazard of the family physician? What can we do to make the local examiner appreciate his responsibility? How are we to guard against collusion of physician and applicant? What system of inspection can be devised which shall detect the frauds perpetrated through the carelessness, ignorance, indifference, cupidity, and lack of moral courage of the local physician?"

The answer is as follows: Impress upon the examiner the nature of the contract as a commercial proposition; teach him in the schools first and in occasional conferences that the ethics of a noble profession require absolute frankness and unswerving honesty to the company; information by frequent communications from the home office that the life insurance contract is not a stipulation for a donation to the widow and orphan but a legal obligation between insurer and insured with terms equally binding upon all parties and privies; show him the importance of his relation to the contract from the standpoint of the principal obligors thereunder and educate him in the details, so that he shall give to the preparation of his application blank that same intelligent, painstaking consideration and attention which he knows he must give to diagonsis and prescription; emphasize always the incidental fact that the company pays him a larger fee for the professional service he is called upon to render than his average patient.—*Second Mid-Year Meeting of the Medical Section of the American Life Convention*, February 28, 29, March 1, 1912.

German Pension Hysteria.—Professor Bernhard delivered a lecture a short time ago before the Association of Iron Founders at Berlin in which he pointed out that in the minds of the masses the idea had been formed that every illness, every accident, must lead to a pension. In consequence people's attention was becoming morbidly concentrated on the processes going on in their own bodies. This produced those nervous phenomena which physicians described as "pension hysteria." Professor Bernhard said the disease was now epidemic in all the industrial regions of Germany. This debilitating collateral effect of workmen's insurance had in consequence of the accommodating attitude of the law courts attained dimensions so great that institutions with which it had been hoped to produce vigorous, happy human beings threatened to lead to the degeneration of the nation. Through excess the idea of protecting artisans was actually resulting in injury to them.

National Insurance for Russia.—According to the *Lancet*, Russia, following the example set by its western neighbors, proposes to introduce, at first on a limited scale, a scheme of compulsory insurance against sickness, and a bill to this effect is likely soon to become law.

Book Reviews.

An Index of Treatment by Various Writers. Edited by Robert Hutchison, M.D., F.R.C.P., Physician to the London Hospital, and Assistant Physician to the Hospital for Sick Children, Great Ormond Street; and H. Stansfield Collier, F.R.C.S., Surgeon to St. Mary's Hospital; Joint Lecturer on Surgery in St. Mary's Hospital Medical School; Surgeon to the Hospital for Sick Children, Great Ormond Street. Revised to conform with American usage by Warren Coleman, M.D., Professor of Clinical Medicine and Applied Pharmacology, Cornell University Medical College; Visiting Physician to Bellevue Hospital, New York. Sixth Edition, revised and enlarged. Price $6.00 net. New York: William Wood and Company, 1912.

The six editions that have rapidly followed one another since this work first appeared, less than five years ago, amply testify to the favor with which it has been received. This popularity is to be attributed to its eminently practical nature; to the compactness and ready accessibility of its subject-matter, and to the high standing of its authors. The latter include a large number of the best-known clinicians in the British profession, among whom may be mentioned Sir T. Clifford Allbutt, Bannatyne, Byrom Bramwell, Sir Thomas Smith Clouston, Goodall, Hunter, Hutchison, Morison, Lockhart Mummery, Sir Thomas Oliver, Poynton, Saundby, Sir James Sawyer, Sequeira, Eustace Smith, Purves Stewart, Norman Walker and Samuel West. The entire domains of medical and surgical treatment (with the exception of the more elaborate surgical operation) have been covered and have been included within the remarkably compact compass of 1051 pages. The subject matter, however, is presented in more than a synoptic manner, owing to the fact that only those methods of treatment are described which have been found to be the simplest and most effective. The present edition is a thorough revision, with the inclusion of many new topics, such as puerperal sepsis, hydro-, photo-, and thermotherapy, and treatment by carbonic acid snow. In the American edition the English prescriptions are adapted to the United States Pharmacopœia, and in these instances in which the preparations of the British Pharmacopœia have no exact equivalent in America, the composition of the British preparations is given in an appendix. The latter contains also brief descriptions of preparations commonly used in Great Britain but comparatively unknown in America. The general practitioner will find this work one to which he may turn for guidance in the treatment not only of the rarer conditions such as myoclonus, acromegaly, etc., but also of the common ailments, such as hiccough, insomnia, etc. There are 67 illustrations that admirably supplement the text. The paper, typography, and binding maintain the high character of this work which may be recommended without reserve to the general practitioner and to the student.

A Dictionary of Medical Diagnosis. A Treatise on the Signs and Symptoms Observed in Diseased Conditions. For the use of Medical Practitioners and Students. By Henry Lawrence McKisack, M.D., M.R.C.P. Lond.; Physician to the Royal Victoria Hospital, Belfast. Second Edition. Price $4.25. New York: William Wood & Company, 1912.

It is doubtful whether any one except the author, and possibly the proofreader, has ever read a dictionary from cover to cover. Yet the task is not an insuperable one even for the general reader, and under certain conditions such as the dearth of other literature and the desire to fill in the gaps in one's knowledge of philology this task may be attended with both pleasure and profit. At any rate, "A Dictionary of Medical Diagnosis" is a dictionary only in title and in the alphabetical arrangement of its subject matter. The reader need have no hesitancy in setting out to read this book as he would any other well-arranged treatise, for his interest will be maintained until he has finished the volume. This maintenance of interest is to be attributed to the author's delightful style and to his belief in the value of studying the various morbid phenomena strictly from the observer's point of view. To the student who would approach this subject from a path different from that of the regular textbook in diagnosis, and thus by this very novelty increasing his interest and aiding his memory; to the general practitioner who would gather together the scattered threads of knowledge gleaned from his student studies and subsequent reading; and to the trained clinician, who would fain discover any gaps in his own extensive knowledge of symptoms and physical signs, this book cannot fail to be a valuable one. The present edition includes a description of the newer diagnostic signs, such as Grocco's, Ewart's, Biernacki's, Joffroy's, Quinquand's, Rotch's, Weber's, etc.; and of the newer tests or reactions, such as Salomon's, Cammidge's, Boas's, von Pirquet's, etc. The work is exceptionally well printed, the black-face side headings and important words in the text, and the numerous tables aiding in the use of this book for didactic purposes and for quick reference. The numerous illustrations are particularly helpful. The special articles on the Wassermann reaction, by Houston, and on the radiography of the abdomen, by Rankin, have been rewritten and amplified; and an article by MacIlwaine on the antiformin method of examining for the tubercle bacillus has been introduced. The index has been revised and enlarged. The work is one that will be found most serviceable by both student and practitioner.

Compendium of Diseases of the Skin. Based on an Analysis of Thirty Thousand Consecutive Cases; with a Therapeutic Formulary. By L. Duncan Bulkley, A.M., M.D., Physician to the New York Skin and Cancer Hospital; Consulting Physician to the New York Hospital; Consulting Dermatologist to the Randall's Island Hospital, to the Hospital for Ruptured and Crippled, and to the Manhattan Eye and Ear Hospital, etc. Fifth revised edition of the Manual of Diseases of the Skin. Price $2.00. New York: Paul B. Hoeber, 1912.

This little work has long been known as a most useful guide to the general practitioner. It represents the personal views and experience of the author; and it is to this personal element that the book owes much of its value. The subjects of diagnosis and treatment receive special attention. The therapeutic formulary, at the end of the book, contains a very complete set of prescriptions; in a subsequent edition, however, some of these prescriptions should be altered to conform with modern pharmacopœial nomenclature. Under the treatment of syphilis, salvarsan receives very scant mention; perhaps this is meant as a reaction from the very fulsome notice which this new remedy has received from the lay and medical press. The book is well printed, of convenient size, and contains all that the recent graduate requires on the subject of dermatology.

Gundriss der Biochemie für Studierende und Aerzte. Von Prof. Carl Oppenheimer, Dr. phil. et med., Berlin. Price 9 marks. Leipzig: Georg Thieme, 1912.

The plan followed by the author in this volume of 400 pages is somewhat different from that usually employed in small books on this huge subject. Only the more important topics have been selected, but the discussion of these has been made so full as to be really comprehensive, and an especial effort has been made to emphasize the facts and principles that serve to correlate the various aspects of the subject as a whole. Consequently one does not find the usual mass of analytical data, and all extensive consideration of methods has also been omitted—very wisely in the opinion of the reviewer, for when such information is desired it will always be necessary to refer to the large reference works. Abbreviated descriptions of methods especially are worse than useless, and are much better replaced by more important matter. The first portion of the book is more distinctly chemical and deals with the composition and relationships of the substances making up the body. This section also includes three interesting chapters on the ferments and their biological significance. The second half of the text is physiological in character and contains admirable discussions of the processes of metabolism and nutrition considered from the standpoint of the newest researches. Recent work in physical chemistry as applied to cellular activity, the nature and functions of the internal secretions, etc., is summarized and well presented so as to be easily understood by the ordinary medical reader. The book carries out its author's purpose excellently, and we hope that an edition in English will soon appear.

Zwei Jahre Salvarsantherapie. Herausgegeben von P. Ehrlich, F. Kraus, A. v. Wassermann. Redaktion: Fr. Keysser. Sonderabdruck aus der *Zeitschrift für Chemotherapie und verwandte Gebiete*. Leipsic: Verlag von Georg Thieme, 1912.

This brochure consists of papers by Alt. Schreiber, Benario and Gennerich giving their experiences with salvarsan in the two years since its introduction. In addition Fordyce of New York, Emery of Paris, Iversen of Russia and Ascoli of Italy give a concise review of the literature on salvarsan that has appeared in their respective countries. The brochure should be useful to those who have not been able to follow the current medical literature on salvarsan. Otherwise it contains nothing new

Society Reports.

MEDICAL SOCIETY OF NEW JERSEY.

One Hundred and Forty-Sixth Annual Meeting, Held at Spring Lake, June 11 to 13, 1912.

DR. DANIEL STROCK OF CAMDEN, PRESIDENT, IN THE CHAIR.

Blindness in Children.—Dr. D. E. ENGLISH of Summit reported having examined thirty-one blind children during the past year. The cases had all been blind some time before being seen by him, and most of the histories were furnished by the family physicians. He gave the causes of blindness in the thirty-one cases as follows: Ten were born blind; five were found to be blind three years after birth; two were blind at one year old, following eczema of the face; two gave no previous history; in one blindness followed convulsions at two years old; in one cataract gradually developed after birth; one was found when a few months old and was blind at that time; another was blinded by the thrust of an umbrella when three years old; four became blind after measles; in one ulcer of the cornea produced blindness at six months; one, an epileptic idiot, became blind at six months; another was made blind by infantile paralysis at two years of age; and one became blind soon after birth from gonorrheal ophthalmia. No history of inflamed or discharging eyes could be obtained in any but one case.

Oration in Surgery—Prevention and Unnecessary Surgery Based Upon Investigation of the Early Symptoms of Surgical Diseases and the Comparatively Inferior Results of Late Intervention.—Dr. JOHN COLT BLOODGOOD of Baltimore, Md., stated that by preventive surgery he meant measures which would make later operative interventions unnecessary, or minor operations which would save the patient from the secondary complications for which there was no surgical relief. He felt that the factors in unnecessary surgery were less remote than in preventive surgery; and, were more within the reach of early correction. He believed that late intervention in acute surgical lesions was unnecessary and avoidable. In this group, he classed delayed surgery as unnecessary surgery. He advised the education of the public in seeking advice of physicians early, and demanding that methods of precision be employed in diagnosis. Dr Bloodgood felt that physicians should become better diagnosticians, and said that surgeons should be trained to do their part, to operate when such a course was indicated.

Vaccine Therapy.—Dr. GORDON K. DICKINSON of Jersey City asserted that in order to have success in vaccine treatment, three conditions should obtain: First, the germs inducing the lesions should be discovered in the patient, and an autogenous vaccine be made from them; second, there should be sufficient arterial and lymph supply to the affected tissue, in order that the serum might reach it; and third, the lesion must be so localized, without complicating bacteriemia, as not to have exhausted the antibody-forming organs. Without a proper combination of the three factors mentioned, and rational application, vaccine therapy would fail and be discredited. Dr. Dickinson emphasized the necessity for accurately measuring the doses and properly spacing the time, and stated that if the dose were too great or too small, the results would prove unsatisfactory, and often dangerous.

The Doctor and Eugenics.—Dr. THOMAS W. HARVEY of Orange felt that the study of eugenics was of great importance to the doctor, because of its value as a scientific study, and because of the necessity for skilled technicians in the application of the principles to every day life. He considered the study of heredity important in that connection, and the effects of environment on hereditary tendencies. He thought special attention should be paid to the sterilization of the unfit, the granting of certificates of health to those about to marry, education in sex hygiene, matters of improvement of the race, and the removing of the ban of professional secrecy regarding social diseases.

Dr. D. F. WEEKS of Skillman spoke of the efforts institutional physicians were making to collect data bearing on the subject of defectiveness, and asked the help of all toward that end. It was his opinion that New Jersey was at the head of all the States in that important movement. He stated that a law had been passed requiring physicians to report all cases of feeblemindedness and epilepsy, the same as contagious diseases, and that the State would give the assistance of an expert in deciding the important question of who was feebleminded, when needed. He believed that the foundation was being laid for good citizens in New Jersey; but stated that Austria had the best system, so far as marriage was concerned. Persons there contemplating marriage had to go before a board and pass an examination, similar to one for insurance in this country.

Dr. F. D. GRAY of Jersey City did not believe there was a chance to do much for this generation in the way of bettering the human race, and that such improvement as we wanted would have to be worked for in future generations. While he favored a Sterlization Board, yet he felt that the children should be educated in the home to know what led to pure and clean progeny, and said that the physician was the person to test this out.

Dr. W. M. LESZYNSKY of New York City mentioned the method of teaching sex hygiene as conducted in the New York City schools, and said that a large portion of the population of our country were incapable of teaching their children hygiene; that such instruction should be in the hands of skilled physicians only; and that neither children nor adults should be taught on a biological basis. He felt that in the sterilization of criminals, there was danger of establishing a class of male public prostitutes.

Dr. CHAS. A. ROSENWASSER of Newark said that this was one of the problems that would never be solved, because when we said that by prohibiting the marriage of the unfit, we would improve the race, we were mistaken, for marriage was not absolutely necessary for propagation. He felt that this would not be stopped as long as the sexual instinct was the most powerful possessed by the human race. Education sounded well, but what would you teach the people? he asked. The best scholars disagreed on that subject. While one said that we must limit our offspring, yet the law said that we must not. Dr. Rosenwasser said that if we knew just what to teach, we should gain nothing, and he gave as an example the fact that no one knew better than doctors and nurses the danger of the drug habit, yet the larger number of such drug fiends to-day were from those two professions. He advised the solving of the problem of what normal sexuality was, before attempting to teach the families and children about it; and suggested that too much enthusiasm should be avoided.

Dr. GEO. H. BALLERAY of Paterson was inclined to look upon heredity as the important factor, and said that there was much less attention paid to the breeding of the human race than to that of hogs; that a man showed more prudence in buying a horse than in selecting a wife; and that a woman exhibited more discretion in buying a hat than in the choosing of a husband. He advised that marriages should be based on the principle that no one but the fit should be allowed to propagate the species, and did not favor especially the teaching of sex hygiene. What was wanted was a sound mind in a sound body, he said, and that could be obtained only by proper selection. He advocated the New Jersey State Medical Society's putting itself on record as opposed to the Government's opening her doors to the importation of the rabble and scum of Europe, and said that there was no reason why America should be the breeding ground for the mentally and physically unfit. If that were prohibited, a great deal would have been accomplished.

Dr. HARVEY mentioned that he had been told that there were laws covering the production of illegitimate offspring, but that they were not very well enforced.

An Analysis of the Refracting Optician Evil: An Appeal to the General Practitioner.—Dr. LINN EMERSON of Orange said that the refracting optician, despite his claims to the contrary, was grossly incompetent, though he was making a strenuous fight for legal recognition. Dr. Emerson felt that the general practitioner who permitted his patients to go to the refracting optician was guilty of great folly. He advocated the use of drops by the general practitioner, and said that glasses could not be properly fitted in the young without them. It was his opinion that the fitting of glasses was as much a branch of general medicine as minor surgery was.

Cyclic Vomiting in Children.—Dr. FRANK R. SANDT of Paterson, through his long experience with such cases, was convinced that cyclic vomiting was a disorder found only in children of the so-called nervous temperment, and in those who had inherited the neurotic tendency from their parents. He felt that cyclic vomiting was primarily due to the effect of certain exhausting or depressing influences exerted on the nervous mechanism of the digestion; that intestinal toxemia was secondary; and that the best lines of treatment were followed when attention was directed to the general physical well-being of the patient, rather than to the alimentary tract, exclusively.

Dr. HENRY CHAVANNE of Salem had had several cases of cyclic vomiting which he had handled successfully, and said that he had used a tablet of codeine in a specific quan-

tity of water, giving a teaspoonful every hour until the effect of the codeine was evident and the child rested.

Dr. SANDT observed that the general effect obtained from the use of bicarbonate of soda was that the child's system became accustomed to it after a few attacks, when it was only good as a stimulant. He favored the idea of the specific history, and said that his cases had been among the more highly cultivated people, in whom there had been a nervous strain at some time. The cases seemed to be limited to the age before puberty, he stated

Diagnostic Pitfalls.—Dr. RICHARD C. CABOT of Boston, Mass., spoke of his experience during the past ten years at the Massachusetts General Hospital, and of his work there in studying some three thousand autopsies, which gave a basis of knowledge that was very secure, though not wide. The work was done in the clinic; those who attended received history sheets, containing the results of the physical and laboratory examinations, as well as the history proper of each case. Dr. Cabot, himself, did not know the outcome of a case. He read the record aloud, discussed it with those present, and then committed himself as to what he thought had probably been found at autopsy. All those present expressed their opinion, and finally the pathologist demonstrated what had actually been found at autopsy. Dr. Cabot handed to each physician present at the New Jersey Society's meeting a diagram showing the percentage of successes and failures in the diagnosis of certain typical conditions contained in the three thousand autopsies. He stated that the pitfalls came at the end, and the safe ground at the beginning. The percentages were as follows: Diabetes mellitus, 95 per cent.; typhoid, 92 per cent.; aortic regurgitation, 84 per cent; cancer of colon, 74 per cent.; lobar pneumonia, 74 per cent.; chronic glonerulonephritis, 74 per cent; cerebral tumor, 72 4-5 per cent.; tuberculous meningitis, 72 per cent.; gastric cancer, 72 per cent.; mitral stenosis, 69 per cent.; brain hemorrhage, 67 per cent.; septic meningitis, 64 per cent.; aortic stenosis, 61 per cent.; phthisis, active, 59 per cent.; miliary tuberculosis, 52 per cent.; chronic intestinal nephritis, 50 per cent.; thoracic aneurysm, 50 per cent.; hepatic cirrhosis, 30 per cent.; acute endocarditis, 39 per cent.; peptic ulcer, 36 per cent.; suppurative nephritis, 35 per cent.; renal tuberculosis, 33 1-3 per cent.; bronchopneumonia, 33 per cent.; vertebral tuberculosis, 23 per cent.; chronic myocarditis, 22 per cent.; hepatic abscess, 20 per cent.; acute pericarditis, 20 per cent.; acute nephritis, 16 per cent; Dr. Cabot advocated blood pressure examinations as being of the greatest value of any of the methods of diagnosis.

Annual Address by the President.—Dr DANIEL STROCK of Camden delivered an address and said that he felt the President of that society should be selected without having necessarily served as Vice-President, though nothing should be considered as preventing the Vice-President to the Presidency. He also advocated the creation of the office of Assistant Secretary.

Moving Picture Illustrations of Nervous Diseases.—Dr. T. H. WEISENBURG of Philadelphia presented a series of very interesting moving pictures, which represented the first systematic attempt ever made to show by moving pictures, not only the gait, reflexes, and tremors common to nervous diseases, but also examples of the diseases themselves. Dr. Weisenburg advocated the method for teaching diseases of the nervous system, and for scientific investigations, asserting that many of the fleeting symptoms which could not be detected by the eye were fully illustrated by such photographs.

Embryological and Antenatal Faults as the Cause of Certain Tumors.—Dr. HARRISON S. MARTLAND of Newark said that the occurrence of mixed tumors in various parts of the body was much more frequent than most internists believed. He felt that embryology was of great importance in explaining the formation of tumors, cysts, and anomalies. His study had been based on specimens examined at the City Hospital in Newark. He showed some lantern slides illustrating his experiments.

Colored Microphotographs Showing Some Abnormal Conditions of the Cortex.—Dr. HENRY A. COTTON of Trenton showed some colored plates which were made by the Lumière process, and stated that they were the first of that kind shown in the United States. He said they had been made in the Trenton Laboratory by Dr. Hammond. The price at the present time was such that the colored pictures would not be used generally, though it was likely that they would be reduced later.

The Relation of the Physician to the Philanthropic and Sociological Work of the Community in Child Life.—Dr. HENRY L. COIT of Newark said that the physician's relation to poverty and crime was fundamental and that he should be the logical leader and director in most of the sociological work of a community, as he was better fitted by experience and education to handle constructive and philanthropic problems.

Dr. ALEXANDER MARCY, JR., of Riverton was of the opinion that no one person in a community gave of his time, his energy, or of his substance, as did the physician to every phase of philanthropic and sociological work. Dr. Marcy believed that the medical profession should be the leaders of thought and action, never followers; and that some restrictions should be placed on the kind of men and women who were allowed to enter that profession, so that those graduating from the medical colleges would be of the caliber to take their proper place in the philanthropic and sociological life of a community.

The State's Responsibility for Its School Children.—Dr. WILLIAM G. SCHAUFFLER of Lakewood stated that New Jersey stood foremost in its care for children of school age, that it led in its wise laws providing for their education and their physical care and well-being. He praised the Medical Inspection Law, which was passed three years ago, and said that it was worthy of being a model for the entire English-speaking world. Dr. Schauffler told of how the educational affairs of New Jersey were cared for, and mentioned several problems of interest to medical men that were engaging the attention of the school authorities at the present time, *i.e.* the compulsory establishment of special classes for backward children, and some very creditable changes in the present building code. Inasmuch as these two improvements were meeting with opposition on the part of the public, Dr. Schauffler suggested that the members of the society should lend their influence to make clear to their communities the importance and necessity of these provisions of the law.

The Relation of the Municipality to the Child.—Dr. ANDRES F. MCBRIDE of Paterson thought that children were entitled to the fullest opportunity for personal development, which included moral, mental, and physical development. Moral development was considered to be largely within the province of the parents, the mental development was a great obligation placed upon the municipality, while the physical development was also a matter of public concern, he said; and most cities recognized the duty resting upon them and were taking up the problems and meeting them with the latest municipal conceptions.

Dr. FRANCIS H. TODD of Paterson thought that the laws brought out by the State Tenement House Commission would, in time, do a great deal to prevent the mortality in young children; and that the Compulsory Education Law, which compelled the attendance at school of pupils until they were sixteen, would do much toward allowing a proper physical development of the child before he was put out to work. That the State of New Jersey was attending splendidly to her responsibilities to the child, was the opinion of Dr. Todd.

Dr. J. FINLEY BELL of Englewood very strongly advocated the exclusive use of the Metric System of weights and measures for our public schools, claiming that eight months' time out of the school life of a child, which were put in on figures, would thus be saved. He told how in France and Germany, where the Metric System was taught exclusively, the pupils took up the study of algebra one year earlier than in England and America, where the students' minds were befogged by many different tables

Educational Hygiene and Prophylaxis.—Dr. GEORGE J. HOLMES of Newark said that the duties of medical inspectors of schools ten years ago consisted of inspecting the children to discover whether they had any contagious diseases. He felt that medical inspection of school pupils today was passing through an evolutionary stage; and that while it had many faults and weaknesses, yet many improvements had been made, chief among which, was the backing up of the doctor's efforts by trained nurses, engaged by boards of education for that purpose. He deplored the lack of cooperation on the part of the medical profession at large with the medical inspectors.

The Object and Intent of Medical Inspection of School Children.—Dr. JOSEPH MACDONALD, JR., of East Orange gave as the basic reasons for medical school inspection the following: The school is the only Governmental department that directly assumes control over children's lives, and nine out of every ten American children are subject to that control during the critical years between seven and fourteen. He said that the object of the Medical Inspection Law could be accomplished by the appointment of a State Medical Inspector, as a member of the State Board of Education; by the preparation of uniform blanks, covering individual record cards for yearly examinations, cards for treatment and exclusion, and cards for infectious or communicable diseases, and by having reports sent by the School Inspectors to

the school boards that they were serving, and to the State Board at Trenton also.

Dr. Edward A. Ayers of Branchville spoke on Dr. Holmes' and Dr. MacDonald's papers, and said that one thing badly needed was a crystallization of the whole subject of uniform State laws, for the adjustment, for co-operation, and for standardization. He mentioned the fact that very few boards employed medical inspectors for the schools until it was made compulsory, and that even now they did it on the most parsimonious system possible, calling for contract bids, and awarding the contract to the lowest bidder. He thought a State Medical Superintendent of Inspectors was needed, one whose business it would be to see that the best results possible were being obtained throughout the State. Such a man would have a great work to do, and it would require a physician who was broadly educated. What was wanted was the most efficiency with the least cost, he said; and the public must be brought to realize that funds were necessary for these purposes.

Dr. Charles A. Rosenwasser of Newark stated that in the city of Newark the salaries of the medical inspectors had been reduced, while at the same time additional work had been given them. He asked who was to tell the doctors what they should do. He told of how, in New York City, nurses had been tried out to do the work of the doctors, but without success, and advanced as the solution of the problem that a man be paid a living wage, and asked to devote his whole time to the work. It was his idea that an inspector should not be allowed to send school children to his especial friends for treatment.

Dr. Gordan K. Dickinson of Jersey City mentioned two things which held the Board of Health from appointing a State Inspector; one was the cost, and the other the people. On the one hand was lack of money, and on the other politics.

Dr. D. C. English of New Brunswick declared that outside the cities medical inspection was a farce, and that there should be a head for the entire work.

Dr. Thomas A. Gray of Paterson stated that he was a medical inspector, that he had associated with him six other medical inspectors, and that they all referred every case to the family physician and never treated or advised about the treatment. He felt that the school nurse was a necessity and improved the inspection 100 per cent. Dr. Gray approved of forming an association of School Medical Inspectors of the State in order that all might study the subject together.

Dr. William G. Schauffler of Lakewood felt that the medical inspectors were poorly paid, because of the wishes of the voters, and on account of their not realizing the importance of such work. It was his opinion that country or rural inspection was much better than many thought, and that although it was done under adverse conditions yet in most instances good work was the result.

Dr. Carl E. Sutphen of Newark entered a severe protest against establishing a new clinic run by medical inspectors of schools for the care of school children, and said that the amount of time a child would lose in going to a public clinic was a mere trifle.

Dr. E. S. Sherman of Newark told how he had outlined the work in Newark, and said that while the salary of the medical inspector had been cut down at one time, it had been put back again. He stated that of necessity work of any character would grow, whether the salary grew or not. It was his idea that no professional man could hold the position of school inspector for long; for after a time his private work would become so great that he would have to choose between it and the school work, and since boards of education could never afford to pay a sufficient sum to warrant medical inspectors ignoring private practice, there would be more or less changing. He said that Newark had the best of the younger doctors doing excellent work for a mere pittance; that if they were paid many times the amount, he doubted whether better work would be had, and that the department would be greatly handicapped without the assistance of the school nurses.

The Importance of the Care of the Eye, Ear, Nose, and Throat in School Children.—Dr. Joseph Tomlinson of Bridgeton said that the general medical profession had been rather slow in recognizing the important rôle played by the eye and nasopharynx in producing local and also remote symptoms, and that when it was understood that diseases and defects of those organs rendered the child less capable of performing the tasks imposed, they assumed a special importance. He felt that if diseases of these organs were not eradicated during school life, they would, in many instances, have done irreparable injury by the time adult life was reached. The conditions and environment of school life afforded an opportunity for systematic investigation of these troubles, and also furnished an opportunity for their rational treatment.

Dr. Walter B. Johnston of Paterson advised uniformity in the methods pursued by the different medical inspectors of each community, and felt that there should be no shifting of the work to the shoulders of the visiting or other nurses. He maintained that the inspection of the child as to its physical condition was the business of the doctor, and that nurses should not be allowed to treat a disease, no matter how easy it might be. Young men who were ambitious and anxious to do the work should, he thought, be selected for it; and no inspector—unless he should happen to have been the family physician before he became inspector—should take the case of a child in the school.

Dr. Norton L. Wilson of Elizabeth expressed it as his opinion that nurses were as capable of examining the children's eyes and throats as the doctor, and quite as competent to say that a child should consult a physician as a doctor should be.

Dr. Linn Emerson of Orange said that the medical inspection of the Orange schools was conducted by a woman physician; that the results had been excellent, and that she was earning several times the amount she received. He believed that the public did not realize that the few hundred dollars expended for medical inspection saved them thousands of dollars, and that they should be made to understand that they were getting many times their money's worth. Dr. Emerson favored the inspectors being paid a sufficient salary to warrant their giving their entire time to the work, and thought that this would eventually come. He deplored the feeling of animosity which had grown up between the inspector and the general practitioner.

Dr. Wells P. Eagleton of Newark told of having lived in Newark before the time of medical inspectors, and said that not until nurses were appointed—finding out the details of the cases and following the patients to their homes—was the work properly attended to.

Dr. E. S. Sherman of Newark did not approve of the term "Inspection," as applied to the work, but thought that it should be called medical supervision. He asserted that there would be no cures, no matter how many physicians were employed, unless there were nurses to follow the cases up. He favored free school clinics as a saving of the time of the children.

Dr. Henry H. Davis, Camden, felt that the work would never be a success until there was cooperation on the part of the general practitioners of medicine, and that nurses should be a part of the system of medical inspection.

Skin Affections of Childhood.—Dr. Henry J. F. Wallhauser of Newark said that the skin dunring childhood presented many interesting studies. Some of its diseases were congenital deformities in the histological structure, inherited predisposition, conditions of a perverted functional character, diseases of direct transmission *in utero*, and acute inflammatory and infectious diseases. Under conditions due to the more sensitive nature of the skin during infancy, he grouped inflammations due to mechanical irritations, such as occur from improper clothing, strong soaps, irritating discharges, heat, sunlight, etc.

Some Differences in the Surgery of Children and Adults.—Dr. E. W. Hedges of Plainfield stated that surgery was one of the many agencies for the betterment of child life. He said appendicitis was harder to recognize in children than in adults, and that there was need of earlier operation for that disease in them, because of the swelling of the omentum. There was danger of infection of the Fallopian tubes in young girls, he thought; and in hernia there was a tendency to spontaneous cure in young children. For excessive intraabdominal pressure, he advised treatment by stopping coughs, relieving flatulence, preventing straining at stool or urination, and keeping the patient on his back, with the foot of the bed raised 20°, for six weeks. It was his opinion that operations should be done only in strangulated or irreducible cases, or when the opening was unduly relaxed. He said there was often a tendency to fracture in rachitic children, and that the differences between the structure of the bones of children and of adults was responsible for the lesser tendency to fracture in the young, and to quicker repair. He stated that tuberculous glands were more common in children than in adults.

The Administration of Anesthetics to Children.—Dr. George E. Tuers of Paterson stated that but two anesthetics should be considered—chloroform and ether; and that the least dangerous drug should be administered in the least dangerous way. Chloroform, while the pleasanter, was the more dangerous, though it was indicated in lung, kidney, and brain surgery. Dr. Tuers felt that ether

might be used exclusively in all operations on children, without increasing the death-rate, and he advocated the drop method with a simple inhaler, the operation being done in the early morning, preferably. Care should be taken to prevent the child becoming frightened. He suggested that one begin by giving one drop to three respirations, and gradually increase to one drop to two inspirations, until complete narcosis had been accomplished, then return to the border line. He stated that there was no definite proportion between anesthetic and air, and that great care should be used to keep the patient completely narcotized during the entire operation.

Dr. F. W. Pinneo of Newark asked why a child should be refused an easy induction, because he succumbed readily to a narcotic. He felt that chloroform should be condemned, generally, and that ether should be used entirely, as it was the best means of inducing anesthesia. He spoke of the recent advance in laboratory experiments by Henderson, who had shown the importance of acapnia and of carbon dioxide in the blood as a stimulant to respiration, and said that we had formerly deprived the patient of this, many of the deaths being due to that fact. He emphasized the importance of giving the anesthetic evenly, and not allowing the depth of the anesthesia to vary during the operation.

Dr. Samuel A. Cosgrove of Jersey City observed that whether the toxicity of chloroform was lessened by warming the vapor must remain for a wider use of the method to determine. The important point was that the actual amount absorbed should be constant, and the amounts of the narcotic agent used out of the can had merely an economic, but no physiological importance.

Dr. Philip Marvel of Atlantic City said that there was no such thing as traumatic pneumonia resulting from the irritation of the anesthetic. He asserted that all were proud of the tendency toward having specialists administer the anesthetic, and declared that there had been more serious results caused by drowning the patient through the carelessness of the person giving the anesthetic, whose mind was on what the surgeon was doing, than by any other causes. He advocated the employment of women for that work, those who did not expect to become operators, and whose minds would not be occupied by what the surgeon was doing.

Dr. F. D. Gray of Jersey City mentioned a matter of detail that was new in this connection. It was the combining of essence of orange with ether, in order to mask the odor of the ether and to make it more agreeable to children.

Dr. E. W. Hedges of Plainfield felt that it would take a very long time to induce anesthesia by Dr. Tuers' plan, and said he had never seen a patient got under ether with so small an amount. He told of having given two ounces of sweet oil after every etherization, before the patient had entirely come out, and as soon as they were able to swallow. It had prevented vomiting in almost every instance.

Dr. Tuers stated that he administered the anesthetic one drop to every two or three respirations, in the beginning, because the patient's respirations were rapid, but that as the stage of excitement increased, he increased the anesthetic until he had complete narcosis, and then reduced it to the border line.

Importance of the Care of Children's Teeth.—Dr. J. E. Duffield, DD.S., of Camden gave as the great essentials to health, simple food, fresh air, and exercise, and he placed food as of the greatest importance, and emphasized the fact that plenty of time should be spent in chewing it before it was carried to the stomach. He said that it was very important that people should have clean, sterile teeth, for if foods were infected during the process of mastication they would be absorbed in that condition, and ultimately result in disease. Ninety-six per cent. of school children had decayed teeth, he asserted. The teeth should be brushed at least twice a day, and examined by a dentist at least once a year. He felt that by systematic examinations all serious dental troubles could be avoided.

Dr. William G. Schauffler of Lakewood thought that free dental clinics had done much to help along the cause of conservation in children, and that there could be no question as to their necessity.

Dr. Alexander Marcy, Jr., of Riverton said that if we would have a child do his best, both in and out of school, it was necessary to see to it that he was not handicapped by any removable physical defect, and particularly to see that he had a good set of teeth. He emphasized that it was not only for the good of the teeth themselves that such care was advocated, but that the general well-being of the child depended upon it.

Dr. R. C. Newton of Montclair complained that little children were not made to chew, and that that was the cause of bad teeth. He said if the lower jaw was used, the upper teeth were driven out first and the upper jaw would be spread. On the mandible depended the shape of the upper teeth.

Dr. Alexander McAlister of Camden said that parents were often indifferent to their children's teeth unless they had toothache. Many mouths got into a terrible state, with but little or no complaint on the part of the children. It was his opinion that many pupils stood at the foot of their class because of neglected mouths. Bad teeth caused bolting of food, with infection from many pathogenic bacteria, thereby producing indigestion and intestinal toxemia, which resulted in faulty metabolism and imperfect development in the child.

Dr. Duffield declared that there was no question but that the examination of school children's teeth and the work of the free dental clinic went hand in hand, and were going to accomplish, in the very near future, a great work.

The Evolution of Abdominal Surgery, with Recommendations as to Technique.—Dr. Frank D. Gray of Jersey City read a paper which dealt in a comprehensive manner with the status of abdominal surgery—past and present—covering features of progress in operative procedures of both the upper and lower zones. A forecast was also made as to some probable directions in which improvement of already remarkable achievements might yet be effected. Especial emphasis was laid, too, on certain evolutionary forces, which even though often disregarded as commonplace and obvious, because of their every day application, had yet been most potential and far reaching in practical results. Finally a strong plea was made for a more general employment of the "Maunsell" method of intestinal anastomosis modified by using it in connection with the "Connell" suture—two methods of technique which the writer believed worthy of much more general use than had so far been accorded them, and which he regarded as superior to the usual all-suture plan or any of the various methods that required the use of mechanical devices.

Blood Pressure.—Dr. J. D. Lippincott of Newark made a plea for the more general use of the sphygmomanometer, particularly in diagnosis, prognosis, and the treatment of arteriosclerosis, acute and chronic nephritis, and the toxemias of pregnancy. The routine use of the instrument he had found of inestimable value in his practice. In no other way had he been able to judge the degree of hypertension so accurately. He felt that the blood-pressure readings alone were worth more than any other symptom as a diagnostic aid. The writer had found that a blood pressure in pregnant women of from 125 to 150 mm. needed careful watching and moderate elimination treatment. A pressure of over 150 mm. required unusually active elimination treatment and diet and might require the induction of labor. He recommended the taking of the blood pressure every two weeks in order to save such women from the more prodromal symptoms of toxemia.

Dr. T. N. Gray of East Orange was of the opinion that all arteriosclerotics were, sooner or later, nephritics. In high blood pressure he had found the same degree of symptoms that he had got from the enlargement of the heart, and thought there must be a compensatory relation. One patient with 212 mm. did not have anything like the symptoms of the one with 104 mm. The basal diagnosis should be influenced by the general condition of the patient in connection with the reading of the instrument.

Dr. Francis R. Haussling of Newark praised the sphygmomanometer as an aid to diagnosis, because of its ease of application, its accuracy, and its reasonableness of price. Dr. Haussling had collected 682 readings on 140 pregnant women in apparent good health. In the series the lowest systolic reading was 80 mm., the highest, 150 mm., the average was a trifle over 113 mm. With or without symptoms, in a blood-pressure of 150 mm., active treatment should be given.

Dr. James G. Prendergast of Philadelphia said that in 85 per cent. of the cases in which hemorrhages had occurred after opening the eye, the blood-pressure had shown that arteriosclerosis and nephritis were back of them. Arteriosclerosis always began with toxemia, he said; but what the toxic substance was, no one knew. He recommended that every man, after reaching the age of forty, have a blood-pressure examination made every year from that time on.

Dr. L. F. Bishop of New York City stated that nine-tenths of all cases of arteriosclerosis were due to amino-acid poisoning, or so-called autointoxicative conditions, when one left out of account the high blood-pressure cases due to pregnancy, those due to nephritis of toxic origin, and those due to arteriosclerosis following syphilis.

He believed that arteriosclerosis was the result of the individual damage to the heart, blood, and kidneys from some particular protein amino-acid, which was characteristic of the individual. He considered the use of salines harmful in arteriosclerosis and high blood pressure, as they increased intestinal intoxication. He used castor oil in all his cases of amino-acid poisoning, but said that the best and safest antidote for high blood-pressure was outdoor exercise. He did not believe in the use of nitrites to reduce blood-pressure.

Dr. C. A. Rosenwasser of Newark declared that every man should have a sphygmomanometer; but gave a way of telling the approximate blood-pressure without one. As the normal pulse should be 72 sitting up, and six or eight degrees lower when lying down, if it did not drop when the patient lay down one could be sure something was wrong. If it went up materially there would be high blood-pressure, and if the cause was hard to find he suggested looking for tuberculosis.

Indurative Headache.—Dr. Christopher C. Beling of Newark had studied that particular type of headache for the past five years. He gave heredity as an important predisposing cause, with exposure to cold, damp, and wet, as common exciting causes, while sudden changes in temperature, local injury or strain, and the presence in the circulation of toxins, were also important factors. Treatment should be first with massage, and then with the sinusoidal current. He advised that all physicians, when called upon to treat headaches, look for the presence of an indurative condition before administering sedative drugs, which would, in such a case, only temporarily ameliorate the symptoms.

Dr. William M. Leszynsky of New York City explained that the condition occurred very often in a large mass of fibrous tissue that came forward to the forehead. He said that such patients not only had hypertonias or some rigidity, but also some other evidences of rheumatic diathesis, or some history of some form of toxemia. He considered the use of the sinusoidal current a more rapid method of treatment.

Dr. Sarah R. Mead of Newark mentioned that her patients had received benefit from massage treatment first. Later she had used the vibratory method, and care by internal medicine.

Dr. Beling said he had found the sinusoidal current the best physical exercise there was, because it would grasp the muscle, stimulating it, and would get down deeper to the tissues. That treatment should be combined with massage.

Ivory Exostosis of the Skull.—Dr. Richard C. Newton of Montclair stated that ivory exostoses arose from membrane bone and were particularly prone to grow from the walls of the orbit and skull. They were slow-growing, usually sessile, hard, and painless. The symptoms in children were usually persistent headache in the frontal region, sanguineous and purulent discharges from nostrils, and the formation of symmetrical swellings, the size of an almond, in the region of the nasal process of the superior maxillary bone. The only treatment was operation in Dr. Newton's opinion. He praised the *x*-ray for use in confirming the diagnosis.

Dr. F. D. Gray of Jersey City thought that unless the growths were producing serious symptoms they should be left alone, because operation was dangerous, and sometimes fractured the skull, though the modern use of the electric burr and saw had made operation more practicable than formerly.

Dr. Thomas W. Harvey of Orange expressed the idea that ivory exostosis might be caused through a loss of the inhibition of the production of building material. Such inhibition usually resulted in the growth of bony tumors, and might be found to be due to disease in the pituitary, adrenal, thyroid, etc.

Opportunities.—Dr. Wm. A. Westcott of Berlin, N. J., spoke of how widely the medical profession differed from all others. He said there was no such thing as co-operation among doctors. Their task was always serious and often terrible; yet no work in life spoke so little for itself as the medical. The very nature of the calling made a doctor's interests secondary to the needs of others. Dr. Westcott deplored the fact that the State bound physicians to maintain rules for sanitation, but permitted competition against them, greater than that against any other class of men, as evidenced by the fact that 1,100 drug stores in New Jersey were doing an irregular business (selling patent medicines) amounting to $13,325 a day. He gave as a remedy for this danger to the work of the physician and the general health of the citizens, better organization on the part of the doctors, without regard to party lines, and the establishment of a standard for the sale of patent medicine (which is the practice of medicine) that would conform to the same high standard as was required of the physician.

Public Conservation of Human Lives.—Dr. Harry W. Kice of Wharton stated that it was the duty of every citizen, who was acquainted with the facts bearing on the subject of the conservation of human lives to see that the Government became interested in that question also. He declared that the medical profession should create a public sentiment that would demand of the Government the adoption of such measures as would best conserve the lives of its people. He said we needed protection from disease more than from invading armies, and that our infant children needed protection more than our infant industries.

The Alcohol Inebriate: What Can We Do for Him Under Existing Conditions in New Jersey?—Dr. C. A. Rosenwasser of Newark gave a series of five groups or classes of inebriates and the treatment for each group. Group one included persons who were daily consuming a small amount of alcohol while attending to their duties. The remedy at this stage was for the individual to let alcohol in every form alone. Group two comprised persons who had gradually developed from what is generally called moderate drinkers to heavy drinkers. The remedy was plain, but difficult to apply, because the patient did not realize that he was doing himself an injury; but he should place himself under the charge of a reputable physician for treatment. Group three was composed of inebriates, subject to periodical sprees, and who between the attacks were usually sober citizens. Restraint in an institution was often required for these. Group four consisted of inebriates who had become unable to manage their own affairs, and who were a menace to society. They should be placed under restraint, for their own protection as well as for that of others. Group five was made up of inebriates who failed to provide for their families, beat their wives and otherwise violated the law. They should be examined by a physician, and, if mentally defective, sent to an asylum; or, if not irresponsible, they should be sent to jail. Dr. Rosenwasser declared that no victim of the drink habit could be cured against his will, and that there was nothing that could be given him secretly that would cure him. The results of the treatment of the drink habit were as follows: Some patients were cured; some were improved; and some were incurable. For the inebriate who wished to remain sober there was but one road, the writer said, and that was total abstinence. The drink habit was like other chronic diseases, prone to relapse, and such relapses called for treatment, not condemnation. He stated that in several States—of which New Jersey was not one—there were hospitals and farm colonies for the treatment of inebriates.

Dr. Alexander Marcy, Jr., of Riverton was strongly of the opinion that the State should provide an institution for the study and care of that class of cases. He felt many could be cured and that such an institution could be made, in time, self-supporting. He suggested that the liquor interests should be taxed to support institutions which it made necessary.

Dr. E. B. Rogers of Collingswood favored prevention as the cure for inebriates. He did not believe in classing them as insane, and said that the State should provide private wards in the insane hospitals for inebriates, inasmuch as it admitted them to such institutions as private patients. He objected to the State's taking their money and then putting them in with the insane people.

Dr. Norton L. Wilson of Elizabeth related having once known a man who scorned the idea of entering an ordinary saloon, but who intoxicated himself every week on two bottles of bitters.

Premature Arterial Senility.—Dr. W. Blair Stewart of Atlantic City said that various irritants increased the activity of the heart and blood-vessels and would have to be eliminated by the kidneys, skin, and liver. Every increase in rate and pressure upon the vessels caused a hypertrophy of the heart, followed by hypertrophy of the muscular arterial coats. In time these coats would give way to degeneration and deposits of calcareous matter, and atheroma would be produced. He recommended the careful watching of the blood-pressure, and said that in early cases the removal of the cause would suffice. He stated that many patients with atheroma lived for years with little or no discomfort, provided rational methods were exercised. It was his belief that if the physicians could regulate dietetics and exercise, and break up the sedentary, lazy habits of their patients, there would be less atheroma, greater longevity, and increased happiness.

Dr. L. F. Bishop of New York City suggested that a distinction be made between atheroma and arteriosclerosis, the former being a senile hardening of the arteries, and the latter a compensatory process.

The Absolute Prevention of Lockjaw.—Dr. Dowling Benjamin of Camden presented a paper which dealt with prevention as the only satisfactory cure for lockjaw, giving as the mortality after the disease had developed, 95 per cent. A description of the method of prevention was gone into by Dr. Benjamin, and was as follows: One should have on hand a set of six screws, of different sizes (prepared by an instrument maker if possible), ranging from the size of a small probe to 5/16 of an inch in diameter, and about 3 inches long. The field of injury should be sterilized, and large open wounds irrigated. Insert a few drops of alcohol solution of cocaine. Dip the screw, which should be the size to follow the track of the wound, into an antiseptic solution; insert in the wound, and keep turning, holding back somewhat, so that by the time it has reached the bottom it will have been turned enough to have carried it more than twice as far. Give it a few more turns so as to lift or screw out the foreign substances or microbes. Remove the instrument; wash in antiseptic solution; dip in iodine; force down to the bottom of the wound again; give a few turns backward; remove the screw; dip into carbolized oil, and push gradually to the bottom of the wound, turning backward, and then unscrewing out. Dress the wound in the usual antiseptic manner. No germs will live in the wound.

The following officers were elected for the ensuing year: *President*, Norton L. Wilson, Elizabeth; *First Vice-President*, Enoch Holingshead, Pemberton; *Second Vice-President*, F. D Gray, Jersey City; *Third Vice-President*, N. J. Chandler, South Orange; *Recording Secretary*, T. N. Gray, East Orange; *Corresponding Secretary*, H. A. Stout, Wenonah; *Treasurer*, Archibald Mercer, Newark.

The next meeting will take place at Spring Lake, N. J., on June 17 to 19, 1913.

BRITISH MEDICAL ASSOCIATION.

Annual Meeting, Held in Liverpool, July 23-26, 1912

(*Concluded from page 313.*)

SECTION ON SURGERY.

Third Day—Friday, July 26.

The Treatment of Gastric Ulcer by Excision and Partial Gastrectomy.—Dr. J. F. Dobson of Leeds read a paper on this subject, of which the following is an abstract:

Operation of gastroenterostomy was most satisfactory, he said, for the majority of cases of chronic ulceration of the stomach and duodenum. There was a small residue of cases for which the operation was not of such value. These were mostly examples of ulceration of the lesser curvature or of the body of the stomach. The author had practised excision in some of these cases, and the results were such that publication was desirable. Excision of the ulcer would seem to be the ideal procedure, for by this the lesion was cleanly removed; the possibility of secondary malignant disease was avoided; no risk of contraction producing stenosis of stomach. Nevertheless the author had seen some deplorable results of excision, and he lately practised a modified form of partial gastrectomy on two patients, both of whom made satisfactory recoveries. The advantages of the modified partial gastrectomy were: Clean excision of ulcerated area of stomach; no possibility of malignant disease in ulcer or of perforation or contraction; it was easier than wedge-shaped excision of stomach. But there was some risk of jejunal ulcer and it was a much more formidable operation than a simple gastroenterostomy.

Mr. Wheeler of Dublin thought gastrectomy was too severe an operation for the treatment of gastric ulcer: in view of the rate of immediate mortality it was unacceptable as an alternative to gastroenterostomy. When the posterior wall of the stomach was fixed by firm adhesions, a surgeon was not justified in distributing the parts to the extent necessary for partial resection.

Mr. Hey Groves of Bristol contrasted the high mortality of 15 to 20 per cent. after gastrectomy with the much lower rate of 5 per cent. incident to gastroenterostomy. He thought it best to operate in two stages—first anastomosing the stomach and jejunum; and then, after an interval excising the ulcer, if that step is indicated by the symptoms. The second stage was thus rendered both safer and easier, because of the improved nutrition of the patient and the lessened inflammation in the region of the ulcer.

Surgery of the Sacroiliac Joint.—Mr. W. I. de C. Wheeler of Dublin said the diagnosis of sacroiliac disease was difficult and uncertain in the early stage, the treatment as a rule unsatisfactory and often unscientific and the prognosis was bad. Very feeble attempts had been made to recognize and treat this disease in the early stage notwithstanding the fact that after suppuration had been established it was extremely fatal. The textbook signs and symptoms appeared when there was extensive destruction of the joint and presented an unmistakable picture, but at a time when surgical treatment was generally futile. Sciatica was often the earliest symptom, and this was not to be wondered at, seeing the intimate relation of the lumbosacral cord to the anterior part of the joint. The skiagraphs gave clear and valuable information and should always be resorted to in cases with sciatica or vague lumbosacral pains which resisted ordinary treatment. The joint was not inaccessible and its anatomical relations were most encouraging from an operative point of view. The joint should not be approached from behind, the posterior sacroiliac ligaments offered a barrier which if broken down interfered immeasurably with the suspension of the sacrum and superimposed trunk on the iliac bones. Injury to these structures could be repaired only after bony ankylosis which required prolonged rest. The attachment of the gluteus maximus and the very powerful formation of bone in this region also made the posterior an unfavorable route for approach to the joint. A trephine or gouge or burr applied in the middle of the fossa occupied by the gluteus medius muscle midway between the crest of the ilium and the sciatic notch would reach the upper and anterior part of the joint without difficulty. The position of the incision below the junction of the anterior two-thirds with the posterior two-thirds of the crest of the ilium was an admirable one, lying as it did between two sets of blood vessels, the segmental above and those for the limb below. The author's conclusions were as follows: "(1) The disease once well established is a very fatal one. (2) Radical treatment in the early stage offers a good chance of recovery. (3) The signs and symptoms usually described do not exist in the stages of the disease in which treatment promise most. (4) Vague and persistent pains in the lumbosacral region especially when referred down the sciatic nerve should arouse suspicions of sacroiliac disease no matter what the age of the patient. (5) An *x*-ray photo is a valuable aid. (6) Early operation to remove the focus of the disease is indicated in this joint as in others; the joint is not inaccessible and is easily reached with the least possible anatomical disturbance."

Successful Ligature of the First Part of the Left Subluvian Artery in a Woman.—Dr. Newbolt of Liverpool related the case of a middle-aged woman on whom he had performed this operation for aneurysm, and showed the patient in good health. There were various lesions in the cornea and elsewhere which indicated syphilis, but iodides in the form of KI and NaI quickly produced a rash and could not be tolerated. The artery was reached by resecting a piece of the sternal end of the clavicle, for which purpose a Gigli saw was used. Two silk ligatures were applied half an inch apart, and merely drawn tightly enough to occlude the vessel. The wound was closed without drainage, and complete cure of the aneurism resulted. The author thought silk twist preferable to catgut or kangaroo tendon for ligating a large artery.

Prof. Rushton Parker, president of the Section, referred to Lister's success with catgut ligatures.

Mr. Fullerton of Belfast and Mr. C. H. Fagge of London said they had found catgut quite satisfactory for tying large arteries in continuity.

One Thousand Cases of Total Enucleation of the Enlarged Prostate.—Mr. P. J. Freyer of London set out in this paper his experience of prostotectomy since the date of his first paper eleven years ago. The average age of his patients was 69, and the extremes 49 and 90. The weight of the gland removed varied between ½ ounce and 17 ounces. He has succeeded in reducing the mortality from 10 per cent. in the first 100 cases to 3 per cent. in the last 100. In nearly all the fatal cases the kidneys were seriously diseased as a consequence of many years' obstruction. Vesical calculus, mostly phosphatic, was present in 180 cases, and the mortality of such patients was higher than the average. He operated by the suprapubic route, a rapid enucleation occupying only two minutes sufficing when the enlargement was mainly glandulous, while a tough fibrous prostate might require nearly one-half an hour. Why the organ enlarged and what were its necessary functions were questions to which he was not prepared to give an adequate answer. His patients were derived from all social and physical types, and from many nationalities; and the usual results were complete control

over the bladder and the restoration or maintenance of sexual power, together with remarkable recovery of health. So marked an improvement, amounting to rejuvenescence suggested the theory that an enlarged prostate is the source of a malign internal secretion.

Mr. C. A. Morton of Bristol asked the author if it was his practice to enucleate the cancerous prostate; and if so what had been the ultimate result.

Mr. Fullerton of Belfast spoke of the great difficulty encountered in removing a fibrous gland, as contrasted with the easy enucleation of the adenoid variety. He had met with patients in whom the symptoms began soon after 40 years of age. His personal experience extended to 55 cases of prostotectomy with four deaths.

Mr. Ballance of Norwich pointed out the advantage of operating in two stages when pyelitis was a complication. He had lost cases owing to infection of the area of raw tissue caused by enucleation, and he thought a perineal drain would be of service.

Mr. Hey Groves of Bristol said the average results of prostotectomy obtained by hospital surgeons in general were very disappointing. A few years ago on compiling the statistics of a number of large hospitals he found the recorded mortality to be 40 per cent. So unjustifiable a death rate demanded a stricter selection of cases and a more frequent resort to preliminary drainage of the bladder for some days before removal of the prostate.

Mr. Newbolt of Liverpool commented on the force that had to be exerted in shelling out a hard, fibrous organ; and on the lower mortality in private than in public practice. He invited Mr. Freyer to give details of his operative technic.

Mr. Freyer closed the discussion. He thought Mr. Hey Groves' figures fallacious: last year in St. Peter's Hospital there were 98 cases with only 5 deaths. He agreed that operation in two stages was advisable in some cases. A perineal drain was needless; he used a suprapubic tube 1 inch in diameter, and the bladder was irrigated twice a day. A malignant prostate should never be removed unless it were free and mobile.

A Series of 100 Consecutive Cases of Acute Appendicitis; Immediate and Remote Results.—Mr. H. J. Paterson of London submitted a tabulated summary of his operations for acute appendicitis in the last three years. The number of cases was 95, of whom 90 recovered, leaving a death rate of 5.2 per cent. Every case was operated on as soon as possible after the diagnosis was made. Those who opposed early operation were challenged to show better results from delay. His own settled conviction was that immediate operation is the treatment of choice; and he adopted Murphy's dictum that "there should be no deaths from appendicitis."

Sir George Bealson of Glasgow denied that immediate operation is the best treatment available for many cases when first seen; though he would not apply this assertion to cases coming under observation within a few hours of the onset of appendicitis. There is a large intermediate group divisible into two classes, (a) with general peritonitis already present, and (b) with localized abscess. Cases in class a require prompt appendicectomy and drainage; whereas such treatment is dangerous and disastrous for class b, the right course here being expectomy, and in the meantime the administration of suitable medicines and diet. For 14 years he has followed this course in 273 cases of appendicitis with local abscess, 264 of whom survived the attack and were subsequently cured by appendicectomy with the exception of 8 who refused operation. The diagnostic test of local suppuration is leucocytosis associated with a normal relationship between the temperature and pulse. As to treatment he advised opium in the form of Dover's powder, bismuth, a dietary reduced almost to starvation point, a simple enema every second day, and local poulticing to promote the immigration of leucocytes.

Mr. C. H. Fagge of London said Sir George Bealson's doctrine of delay was pernicious and if acted upon it would inevitably increase the mortality of acute appendicitis. In practice it was impossible to discriminate serious cases from the benign. Exploration constantly revealed conditions that could only be guessed at beforehand.

Mr. H. Stiles of Edinburgh said his experience did not accord with the views of Sir George Bealson. As a means of reducing the mortality he urged the adoption of the following rules: (1) Never give chloroform in these cases: the patient is already toxic and chloroform increases the danger in every form of acute toxemia; ether is the preferable anesthetic. (2) Always remove the diseased appendix; a large wound may be required but there need be no hesitation in opening the peritoneum freely. (3) Wash out the stomach; foul vomit indicated stasis in the small intestine and in this condition repeated lavage of the stomach was of the utmost value. (4) Do not wash out the peritoneum, but rely on adequate provision for drainage.

Prof. Cameron of Toronto also advocated lavage of the stomach. On the question of operation he was in general agreement with Sir George Bealson. Doubtful cases were those seen for the first time on the second or third day of the disease. If he was called in on the fifth day as a rule he advised expectant treatment.

Mr. Paterson closed the discussion. He said time limits in this disease are now out of date, and the modern resources of surgery enable us to operate at any stage. Contrasting the rival methods he pointed to hepatic infection, subphrenic abscess, and septicemia as incidental risks of delay; and reminded the advocates of expectomy that their surviving patients still retained morbid appendixes for future operation; nor could they say positively, on clinical evidence, what were the exact local conditions in any case of acute appendicitis.

The Preoperative Diagnosis of Appendicitis.—Dr. William Ewart of London read a paper on this subject and gave a demonstration of a dorsal method of examination by percussion with the aid of a pleximeter. This method provides normal "standard" physical signs for the healthy state, and abnormal "localizing physical signs" for the retrocecal lesions and for some of the central and of the pelvic lesions, whereas abdominal palpation could reach only the anterior lesions, added considerably to the range of our objective preoperative diagnosis (both positive and negative) by demonstrable physical signs. It was simple and rapid, painless and harmless, and, within its own competence, singularly accurate and reliable. The practical conclusions claimed to have been established by an extensive clinical investigation, and by confirmatory surgical test cases were as follows: "It is the only available test (1) for the normality of appendical district; and (2) for the post-operative results of surgical interference, whether completely successful, or sometimes calling for a secondary operation. (3) It is unique in supplying direct localizing evidence in the large group of retrocecal lesions, which are inaccessible to preoperative diagnosis even by *x*-rays; often also in the pelvic and sometimes in the central lesions. (4) Except in the anterior group of appendicitis, hitherto the only group of physical signs, it is the only objective evidence for deciding at once the urgency of operations which at present are undertaken for existing symptoms; and (in their absence) the expediency of operations now justified by nothing else than the plea of safety. (5) It has a direct bearing in all cases upon the modus operandi: not only in the deep-seated and posterior ones; but particularly in the anterior ones, where it is capable of settling any doubts as to the management of the retrocecal field. (6) It is indispensable for certificates of appendical soundness, and of a perfectly normal result after operation; (7) for the decision as to an operation in all subacute, latent, or doubtful cases; and (8) for the most satisfactory operative management of severe cases. With exceptional reservation a dorsal examination should never be omitted as an essential part of the routine of surgical preoperation diagnosis."

Mr. J. T. J. Morrison of Birmingham expressed the thanks of the Section for the demonstration. He thought Dr. Ewart had proved his thesis, and he welcomed the sacroiliac percussion test as a distinct advance in clinical knowledge, and as an addition to the recognized means of diagnosing the state of the appendix.

Gastric Ulcer: Its Pathology, Diagnosis and Treatment.—Sir B. Dawson spoke of mucous ulcer as a subacute affection which usually healed quickly though occasionally it went on to perforate or in other cases became chronic. This last condition usually involved all the coats of the stomach. Duodenal ulcer is closely related. On the two sides of the pylorus there were the same conditions. Ulcers could be produced by lowered vitality or damage by various agents, by infection, toxic or bacterial. But hydrochloric acid played a part as ulcers were confined to the region where it existed. Experimental damage alone did not lead to ulceration but when combined with acid juice did so. This was important in connection with operative proceedings. But in human beings attacked by ulcer there was almost always bacterial infection. Chronic ulcer suggested irritation of considerable duration. Pathology indicated an origin in the mucous form spreading to the submucous coat but if the case was acute perforation might occur instead of the chronic ulcer of less rapid formation. The speaker

contrasted cases diagnosed as ulcer in preoperative days with those seen on the operating table. In the former a case of perforation or hemorrhage now and then was seen at autopsy and it was thought the others were ulcers which healed by first intention, assisted by treatment. The main diagnostic symptoms were pain, tenderness, and acidity, but motility was sometimes increased which might be shown by *x*-rays. These symptoms as also vomiting and hemorrhage might exist in other conditions. Diet must have the first place in treatment and should be most carefully regulated and assisted by rest in bed. Drug treatment was summarized as directed to meet the hyperacidity, which should be completely neutralized. If this could not be done, and if return to usual diet or to work brought on relapse, operation might be required as it would if stenosis was present. He would not recommend surgical measures until medical treatment had been fairly tried for two months.

Dr. Saundby said there was often no little difficulty in diagnosis and in such cases it was better to presume that there was ulceration and treat accordingly. He agreed that rest in bed was of prime importance and disagreed with the old plan of low diet. For years he had taught that mouth feeding could be carried on in bed throughout. He did not think drugs could do much and the use of *x*-rays must be of little, if any, value.

Dr. Michell Clarke commented on the importance of diagnosis from cancer.

Dr. William Hunter considered staphylococcal and streptococcal infections through the mouth as the cause of the ulcers.

Dr. Vaughan Hanley looked as confidently to a chemical cause. Hyperchlorhydria was constant, and increased when the pylorus was affected by spasm or stenosis. Pepsin was usually present in great excess. He believed in medicine. Bismuth subnitrate was a most valuable remedy and in uncomplicated cases he would not recommend a resort to surgery.

SECTION OF OBSTETRICS AND GYNECOLOGY.

Second Day—Thursday, July 25.

Eclampsia.—Dr. J. W. Ballantyne of Edinburgh opened a joint discussion with the Section of Pathology on Eclampsia. He discussed the etiology and said that it was now generally agreed that pregnancy was the cause of eclampsia, but it was not a normal pregnancy. Eclampsia was more common in primiparæ and with twins, also in cases of illegitimacy. He thought that its occurrence was favored by atmospheric conditions and that it was more prevalent in cold, foggy or warm, muggy weather. It was extraordinarily difficult to state emphatically any single fact in its etiology. It may be regarded as a toxemia; some have supposed that it was of microbic origin, but he was opposed to that view. A characteristic feature was evidence of renal inadequacy shown by diminished excretion, albuminuria and the presence of blood and tube casts in the urine. There could be no question of the importance of albuminuria as a danger signal. There were signs of inadequacy in the liver and great constipation. There was also evidence of inadequacy of the thyroid and parathyroid glands. Some had also incriminated the suprarenal and pituitary glands. He referred to Selheim's mammary theory which had led some to advocate and practice removal of the breasts. The corpus luteum had been looked on as a causative element and others had tried to find the cause in poisons generated in the fetus and placenta. As regarded treatment: at one time he practised active interference and found the mortality 20 per cent. During the last four years he had left the uterus alone and the mortality had fallen to 10 per cent. His treatment included the administration of six ounces magnesium sulphate with sufficient water to dissolve it, by stomach tube. He seldom gave morphine. He used saline infusions, but with chloride of calcium instead of sodium chloride; 30 grains in one pint. Later he gave the same salt by the mouth, 30 grams three times daily. He drew the following conclusions: The chief factors were pregnancy, and renal and hepatic inadequacy. The disease was a pathogenic toxemia and antitoxemic measures in some cases succeeding in arresting the fits without interfering with the pregnancy, the patient subsequently being delivered of a living child.

Dr. Teacher of Glasgow opened the discussion from the point of view of the morbid anatomy. He said that postmortem investigations showed that the most striking changes were in the liver, there being fatty degeneration and cloudy swelling with the presence of hemorrhagic foci. In some cases there was cerebral hemorrhage; there was no relation between the degree of pathological change and the severity of the symptoms. The general opinion was that the symptoms were due to a toxemia resembling uremia on one side and septicemia on the other. The characters of the lesions were due partly to the high clotting power of the blood and to the action of the toxin on the walls of the vessels. There was necrosis around the portal tract, whereas in acute yellow atrophy the necrosis affected the center of the lobules. The changes in the liver cells were shriveling and vacuolation. In the kidney the tubules showed necrosis and this was accompanied by hemorrhage between and into the tubules. A rare lesion which he had found and of which he showed pictures on the screen was symmetrical necrosis around the outer edge of the cortex of the kidney. This necrotic band was marked off from the rest of the kidney by a band of hemorrhage. In the cases in which he had discovered this lesion there had been complete suppression of urine and the fits had ceased, the patients dying after five or six days of suppression.

Sir William Smyly of Dublin said that the treatment was influenced by three considerations: (1) Efforts to prevent the formation of toxins. (2) Neutralizing the results of the toxin. (3) Elimination of the toxins from the system. When obstetricians were influenced by the first consideration they used a forcible rapid means of emptying the uterus. Dührssen recommended rapid emptying of the uterus after the first fit and reported good results. Some considered that the cause lay in the placenta and when fits continued after delivery they advised curetting the uterus. He referred to Tweedy's theory that the intestinal tract was the main source of origin of the poison and his plan of washing out stomach and bowel and withholding all food, including milk, allowing water only. Pinard had stated that he had never seen a case of eclampsia in a patient who had been on prophylactic treatment for 8 days or more. The elimination of the toxin was encouraged by the action of the kidneys, bowels, and skin, though personally he did not believe in diaphoresis. He advocated saline infusion but there was danger from chlorides and he suggested sugar as a substitute. Bleeding was coming into favor again. Lumbar puncture had been tried but had not much support. One of the latest theories was that the disease was due to spasm of the arterioles and on this account chloral was advocated. Symptomatic treatment is considered in guarding the patient from injury—mop out the throat and turn patient on side with head over edge of bed; give oxygen after each fit; if high arterial tension use phlebotomy and veratrum viride. The important point was to determine whether to procure immediate delivery. Vaginal cesarean section was impossible out of hospital. The general practitioner generally used accouchement forcé. In his opinion this was the worst form of treatment possible. The best results so far reported were those of Stroganoff, who, using a non-operative plan, had in 600 cases reported a maternal mortality of 8 per cent. and a fetal mortality of 21 per cent.

Dr. Walker Hall of Bristol said that physiological chemistry showed that there was something in the blood of pregnant women which had the power of splitting up the amino-acids in the early months of gestation. The organism was coping with overwork by overstrain, and if the balance was disturbed then we got eclampsia as one result. He thought that all the present methods of treatment acted by "shocking" the nervous cells into a state of insensibility, from which they recovered without again acquiring their bad habit.

Dr. Leith Murray of Liverpool was entirely against the view that anaphylaxis was a cause of eclampsia. He thought that the changes in the liver were due to the hemoagglutinative action of the corpus luteum secretion. Many cases died of cerebral hemorrhage. The toxin resembled snake venom poison in its effects, but except for that resemblance it was unique. All venom products were obtained from glands and he thought it possible that eclamptic toxin was formed by the syncytial cells of the placenta.

Dr. Haultain of Edinburgh believed that the liver was the main source of the toxin. The disease was very prevalent in Edinburgh, but rare in Dublin, and he believed the Edinburgh prevalence was due to the cold easterly winds of that city. He used blood-letting but not salines. He had given up morphia and chloroform entirely; gave bromide and chloral 60 grams and 30 grains respectively by enema. He believed in emptying the uterus; in most cases one found that labor had already begun; but even in pregnancy he emptied the uterus, using cesarean section if necessary.

Sir John Byers of Belfast believed that the weather

had nothing to do with causation. He had given up diaphoresis and was not in favor of blood-letting. He used saline solution, but advocated the Ringer-Locke solution, which was based on an analysis of the salts in normal blood. He gave morphine freely and was entirely opposed to emptying uterus.

Dr. SCHARLIEB of London spoke of her experiences in Madras forty years ago, where eclampsia was very prevalent, though the climatic conditions were entirely opposite to those of Edinburgh, and the people ate no meat.

Dr. SHOLTO DOUGLAS of Birmingham said that experiments showed that, when blood was drawn from an animal, the antibodies remaining in the blood were increased and later fell. He thought this explained the good effect of bleeding rather than the idea that the poison was actually removed from the blood.

PROFESSOR CHIPMAN of Montreal, vice-president of the section, said that he was present at a discussion on eclampsia at Baltimore in May and he compared the opinions with those now expressed. The one fact which emerged was the amount still unknown on this subject. The cases might be grouped clinically into: (1) Those in which the liver was most affected; (2) those in which the kidney was most affected. The liver cases were the more severe and had fewer prodromi. In these cases he advised early delivery.

Third Day—Friday, July 26.

Chorio-Angioma of Placenta.—Dr. R. W. JOHNSTONE of Edinburgh read a paper on this subject. He said that his was the seventy-first case of genuine placental tumor, excluding cysts, which had been recorded, but they were probably more common, as all the reported cases were from institutions. In his case there was marked hydramnios. Examination of the tumor showed that it occupied about one-fourth of the total area and was composed of pedunculated lobules, varying in size from a pea to a plum. Each lobule was covered with chorionic epithelium, both layers being recognizable, and being reflected on to the pedicle of each lobule. There was no true capsule to the tumor but a layer of degenerated villi and fibrin which formed a sort of false capsule. The mass of the tumor consisted of capillaries engorged with blood and supported by a delicate connective tissue and he regarded it as a capillary angioma. Most of the previously described cases had been called myxomata.

Rupture of Uterus in a Case of Concealed Accidental Hemorrhage.—Dr. SHANNON of Glasgow described a case of this nature. The patient, a 10-para, was seized with acute abdominal pain and syncope. The uterus was found to be hard, tender and larger than normal. Cesarean section with supravaginal hysterectomy was done but patient died of shock. The uterus was found to present multiple ruptures, many involving peritoneal coat only, some extending into muscle, but none invading mucous membrane. He said that in all cases of concealed accidental hemorrhage the uterine wall was diseased and he attributed the ruptures to sudden distention of this wall.

The Excretion of Creatin in Pregnancy and the Toxemias of Pregnancy.—Dr. J. P. HEDLEY of London said that normally no creatin was excreted, but, in pregnancy, a considerable quantity was excreted from the third month onward, and the same was the case in dogs and rabbits. It had been shown that there was a greater excretion in toxemia, but his own investigations proved that the reverse was the case. The normal amount in pregnancy was below 1 milligram in 10 c.c. of urine. The subject required further investigation.

Rashes Occurring During the Puerperium.—Sir JOHN BYERS of Belfast read this paper. He described the following: Iodoform rash, lysol rash, urticaria, sweat rash, and erysipelatous, and scarlatiniform rashes. With reference to the erysipelatous he said that the prognosis was much worse when it originated in the genitals, as from a torn perineum, than when it originated elsewhere. He went extensively into the etiology of the scarlatiniform rashes and concluded that most of these were septic in origin and that true scarlatina in the puerperium was rare.

Developmental Errors of Puberty.—Dr. FOTHERGILL of Manchester read this paper. Under this heading he included: (1) Infantilism, (2) hypertrophy of the cervix, (3) menorrhagia of puberty. Under (2) he said that, clinically, the most striking instances of this were protrusion and ulceration of the cervix without cystocele. Under (3) he said that curetting of the uterus showed hypertrophy of the mucous membrane and he attributed the bleeding to insufficiently developed muscle in the wall of the uterus. He said that these cases were not influenced by drugs, and if treatment by rest in bed did not cure, it was necessary to perform curetting.

Medical Items.

Health Reports.—The following cases of and deaths from smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine Hospital Service, during the week ended Aug. 16, 1912:

CHOLERA.

Places.	Date.	Cases.	Deaths.
China: Amoy	June 16-29	9	..
Swatow	July 13	..	*..
Dutch East Indies: Sumatra—			
Tapanoeli, province	July 11	..	Present
India: Bassein	June 2-15	6	4
Bombay	July 1-6	94	69
Calcutta	June 9-29	..	89
Madras	July 1-6	3	†2
Maulmain	June 9-15	2	2
Rangoon	May 1-31	9	7
Indo-China: Saigon	June 11-17	45	36
Japan: Formosa—Kelung	June 27	..	*..
Java: Batavia	June 16-22	1	1
Russian Empire: Astrakhan	July 19	..	Present
Straits Settlements: Singapore	June 16-22	1	1
Turkey in Asia: Provinces—Adana—			
Adana	May 28-June 15	4	3
Ak Keupru	Apr. 8-14	2	..
Ak Keupru	May 28-June 13	10	6
Ayas	June 11-15	2	2
Bor	May 28-June 15	6	4
Djihan	May 28-June 15	11	1
Dorach Bache	May 28-June 15	4	5
Oula Kichla	May 28-July 6	5	10
Sis	May 28-June 15	5	5
Tarsus	May 28-June 17	4	..
Aleppo—			
Alexandretta	June 16-23	4	2
Amk	July 1-6	5	4
Anitab	July 1-6	1	1
Antioch	Apr. 17	2	1
	June 1-29	8	4
	July 1-6	7	12
Arka	July 1-6	10	4
Gisser	July 7-13	13	6
Harem	June 23-29	18	7
	July 6-14	15	20
Hersem	July 1-6	5	4
Idlib	June 23-29	4	3
Keudige	June 23-29	4	..
Killis	June 16-29	11	5
	July 1-13	3	1
Marach	June 15-29	39	20
	July 1-13	107	42
Sarenda	July 1-6	7	6
Talaerin	July 1-6	3	3
Mersina	June 9-15	1	1
	July 1-14	32	25
Zanzibar	Aug. 10	..	Present

*Epidemic.

†Madras presidency, May 1-31. Cases, 7,066; deaths 3,983. June 1-30. Cases, 8,792; deaths 5,121.

YELLOW FEVER.

Brazil: Manaos	July 7-13	..	4
Pernambuco	July 1-15	..	3
Colombia: Barranquilla	July 14-20	..	*1
Ecuador: Bucay	June 1-15	1	..
Chobo	June 15-30	2	1
Duran	June 15-30	1	..
Guayaquil	June 1-30	8	6
Milagro	June 1-30	5	4
Naranjito	June 15-30	2	2
Yaguachi	June 1-30	1	††1
Mexico: Metaa	Jan. 14-20	1	‡..
San Juan Bautista	July 9-11	..	**3
	July 27-Aug. 9	7	..
Peru: Iquitos	Jan. 1-31	..	††22
	Feb. 1-29	..	10
	Mar. 1-31	..	4
	Apr. 1-30	..	3
Venezuela: Caracas	July 22	4	‡‡..
Cua	July 20	..	***..
La Victoria		..	†††..

*From up Magdalena River.

†From Motul, 29 miles distant.

‡Reported out of date.

**Resulting from previously reported cases.

††Endemic. Year 1908, deaths, 11; 1910, 1; 1911, 76.

‡‡3 cases from El Valle, 1 case from Villa de Cura, about 29 miles distant.

***President.

†††Endemic. July 20 present.

PLAGUE.

Algeria: Algiers	July 12	..	*1
Le Ruisseau	July 9-13	..	†5
Arabia: Aden	July 1	..	‡1
China: Canton	May 18-July 7	..	Present
Eng Chhun	July 6	..	**..
Egypt: Alexandria	June 27-July 12a	2	..
Port Said	June 15-July 16	3	..
Provinces—Fayoum	July 2-14	1	..
Girgeh	July 3-6	1	..
Minieh	July 3-14	1	..
India: Bombay	July 1-6	28	19
Calcutta	June 9-29	..	72
Rangoon	May 1-31	30	23
Indo-China: Saigon	June 11-17	2	..
Java	June 16-29	..	††..
Mauritius	Apr. 6-18	9a	1
	May 3-23	9	2
	June 9-16	2	..
Porto Rico		..	‡‡
Philippine Islands: Manila	June 23-29	1	1
Venezuela: Caracas	July 17-22	..	2

*In Hospital El Kettar in vicinity.

†4 miles from Algiers.

‡From s. s. India.

**Present. 100 miles inland from Amoy, and prevalent in the surrounding country.

Medical Record

A Weekly Journal of Medicine and Surgery

Vol. 82, No. 9.
Whole No. 2182.

NEW YORK, AUGUST 31, 1912.

$5.00 Per Annum.
Single Copies, 15c.

Original Articles.

A PRACTICAL METHOD OF PROPHYLACTIC IMMUNIZATION AGAINST TUBERCULOSIS.

WITH SPECIAL REFERENCE TO ITS APPLICATION IN CHILDREN.*

BY KARL VON RUCK, M.D.,

ASHEVILLE, N. C.

My studies of the subject indicated by the title of this communication were first undertaken eight years ago, believing then, as I do now, that the available preventive methods by the care of tuberculous execretions and by endeavors to increase the general resistance through improvement in nutrition and in hygienic environment, while greatly desirable, would not prove as effective as is necessary and as we had hoped them to become when the causative relation of a specific microorganism was demonstrated by Robert Koch thirty years ago. My hope of finding a method of protecting the human organism specifically in a similar manner as we have been able to do against smallpox, found some support in the more or less effective protective effect from vaccination of lower animals, especially young cattle which had been shown by von Behring and others, and in the demonstration of specific antibodies in the sera of tuberculous patients after more or less prolonged treatment with products of the specific bacillus, made possible by the labors of Koch, Bordet and Gengou, Wright, Wassermann, and others.

I am not aware that any actual attempt has heretofore been made public to apply the principles of active immunization as a prophylactic measure against tuberculosis in the human subject, although we find occasional suggestions and recommendations of certain methods to this end in tuberculosis literature. Thus Heubner recommended the prophylactic application of tuberculin in young children soon after its discovery; von Behring in 1903 expressed the hope that the feeding to nurslings of milk from immunized cows would afford them protection against later infection. Calmette in 1904 proposed the oral administration of dead tubercle bacilli and again recently of non-virulent living bacilli of bovine origin, and in 1906 a similar proposition came again from von Behring, he then advocating the oral administration of a tubercle bacillus emulsion which he called Tulase, for prophylactic immunization of infants. Other writers have made similar suggestions. The report of Webb and Williams made last year upon the supposed immunization of two children of tuberculous parentage by repeatedly inoculating them with increasing numbers of living virulent tubercle bacilli needs no consideration here, as no proof of induced immunization was supplied and would not, even if they had shown the accomplishment of their object, inasmuch as their mode of procedure could not come within the limits of a practical method. The requirements of such a method I formulated in the beginning of my studies to be an available preparation or vaccine absolutely free from real or supposed danger, powerful enough to act by one or two applications, uniform in action by producing the desired immunity in all cases, simple enough in its technique to make it available for use of the general practitioner, without the necessity of elaborate investigations in selecting suitable cases.

Believing that the evidence I now propose to adduce justifies my claim that I have found a method complying with the requirements stated, I omit the details of my various investigations and experiments prior to its application in July of last year in children, the number of which up to April 1 has reached a total of 339, and proceed at once to the description of the preparation and then give the results shown in the immunized children by serum tests before and after each dose and at periods of from two to eight months thereafter; the observed action of their immune serum upon virulent tubercle bacilli *in vitro* and of my observations upon laboratory animals immunized with the preparation to a slighter degree as shown for the children by the study of Pfeiffer's phenomenon and of the protection afforded against intraperitoneal and other modes of virulent infection which in the number of tubercle bacilli used represented from one thousand to a hundred thousand and more times that necessary for the uniform production of a fatal result.

The vaccine ready for use contains per cubic centimeter 10 milligrams of proteins of tubercle bacilli and a small amount of their fatty extractives, proportioned quantitatively as follows: Protein No. 1, 0.25 milligram; protein No. 2, 2.75 milligrams; protein No. 3, 1 milligram; protein No. 4, 6 milligrams; fatty extractives, 0.01 milligram. In the adoption of the amounts of the several constituents present in the preparation I was governed by the study of their action when employed separately in the animal experiment as well as in some of the children. Finding that with the same doses but little effect was noted in the production of specific antibodies in the use of protein No. 1, this is present in the smallest amount, whereas protein No. 2, and especially the nucleoprotein designated as No. 4, appearing most effective, they are quantitatively in excess. The addition of the fatty extractives may eventually be found unnecessary, it appearing in my studies of complement fixation with the several constituents of the tubercle bacillus as antigens, that such fixation occurs with all of them inclusive of the fatty extractives with the sera of non-tuber-

*A summary giving the general results of the studies recorded in this paper was read before the Chicago Medical Society May 1, 1912, and appeared in the *Journal of the American Medical Association* May 18, 1912.

culous children after their vaccination with protein Nos. 2, 3, and 4, irrespective of the presence of one or the other of the fatty extractives in the preparation. In my preliminary animal experiments I have never been able to fully protect against virulent infection with the fatty acids, or the neutral fats, or with both of them combined, not even with large and often repeated doses, which were well borne by the animals; I also found that in the human subject any material increase of fatty extractives in the preparation over the amount present as given in the foregoing formula is liable to be followed after four to six weeks by local necrosis and abscess at the site of injection, and that its presence even in the very small amount retained is still responsible for the occasional occurrence of more or less circumscribed inflammation at the point where the injection is made. The reason why the fatty extractives are still retained is because I have observed my quantitative averages in complement fixation, with the fatty acids and the neutral fats present in the preparation to be slightly higher, as compared with averages when they have been omitted, but this difference can easily be a coincidence and depend upon the naturally present variability of the acme of the positive phase, the curve for which appears to be more or less independent for the different antigens, as will be shown in the tables which appear further on in this paper.

The chemical characteristics of the several proteins and the details of the production of the preparation sufficiently explicit to enable others to make an identical product appear in the foot notes below.*

My earlier precautions in endeavoring to exclude children already subjects of tuberculous infection proved unnecessary, as did also those of adopting very small doses in instances in which their examination justified the suspicion or the positive assumption, that a latent tuberculous process was actually present; having since found that like normal children they show neither severe reactions nor any other symptoms to the dose necessary to produce the desired amount of antibodies as shown in serum tests. I have, however, excluded from the rapid method such children as have evidence of active and progressive disease or have reached the stage of open phthisis, and in these treatment with small and repeated increasing doses was thought necessary in order to avoid accidents. The rapid method was also applied in ten adults varying in their respective ages from twenty-five to forty years, and though not included here, I may state that they responded in the same way as did the children. In the studies of the necessary dose, single or repeated, in the light of the age of the child, the presence or absence of tuberculosis, and the state of general nutrition, it was found that the smallest dose given of 0.1 c.c. of a 10 per cent. dilution caused the prompt development of the several antibodies, and an increase of the blood alkalinity, after a single administration. With larger doses, varying from 0.1 to 0.6 c.c. of the full strength, the quantitative determination of amboceptor after the first dose was the same as was shown thereafter when the dose was repeated with or without its further increase. The degree of serum agglutination was, however, in apparent relation to the size of the dose, and it increased with every subsequent dose. The blood alkalinity likewise increased on giving one or two additional doses, but not thereafter.

As regards the immediate effect of a given dose, irritation and inflammatory swelling at the point of injection occurred rarely. As a rule there was no other effect than a slight tenderness on pressure noted for twenty-four to forty-eight hours. No temperature rises were noted in normal children regardless of the dose given. In children suspected or positively determined to have previously acquired a tuberculous infection sore arms were noted more frequently but by no means uniformly, occasionally there was marked and diffused redness and swelling, which was then also attended with a moderate rise of temperature. Cold compresses to the arm controlled both symptoms, which subsided on the day following. In trials with the preparation containing no fatty extractives sore arms did not occur.

Focal reactions sufficiently marked to cause an increase of physical signs, in children who had

*The culture of tubercle bacilli used is of human origin, grown on bouillon, and has been perpetuated in my laboratory for the last ten years; it was apparently avirulent when first tested upon guinea pigs and has continued so to the present time. In the manufacture of the preparation heat has been avoided and the chemical effect of light excluded. No chemicals have been introduced in kind or concentrations that could injure, split, reduce, or alter the several constituents. The cultures having reached their maximum growth are collected upon a filter and washed free of adhering culture fluid until the filtrate gives no further biurette reaction. The bacillary mass is then transferred to a glass container immersed in distilled water containing 0.4 per cent. phenol, and with frequent stirring and shaking it is macerated for several days, when the filtrate obtained contains the protein designated as No. 1; chemically examined, it shows primary proteose, 25 per cent.; secondary proteose, 70 per cent.; peptone, small amount; reaction acid. After further washing with distilled water, the bacilli are dried and powdered, when their fat extraction follows; after drying they are again powdered and then partially extracted in distilled water yielding protein No. 2, this showing coagulable protein, 0.03 per cent. (estimated by nitrogen); primary proteose and deuterproteose in about equal amounts, total about 48 per cent., secondary proteose 50 per cent., peptone trace, phosphorus content 0.1 per cent., reaction alkaline.

The bacillary mass is again dried and powdered and suspended in 0.4 per cent. carbolized distilled water and then ground wet in glass capsules with agate marble, until repeated microscopic examinations no longer show a fragment or formed substance of the bacilli. Filtration through porcelain gives protein No. 3, in solution, differing from No. 2 by absence of coagulable protein, the relatively small amount of primary and increased amount of secondary proteose (75 per cent.) peptone is shown in small amount. The phosphorus content is 0.5 per cent., the reaction acid. Protein No. 4 passes the filter after the addition of an 0.4 per cent. solution of sodic hydrate and gives all reactions for nucleoprotein. The remaining bacillary residue amounting to about 5 per cent. weight of fat-free tubercle bacilli, is free from proteins (nitrogen determination), may contain traces of fats, and is probably cellulose. The secondary proteoses give reaction for sugar.

The fatty extractives of tubercle bacilli may be obtained separately as neutral fats and fatty acids by their saponification and subsequent extraction of the acid precipitate with alcohol and with ether, or in order to avoid undesirable chemical changes by saponification, the alcohol fats and ether fats may be obtained respectively by first complete extraction with ether, followed with alcohol, and vice versa, which to me appears preferable. When in solution they can be shaken out with distilled water, the latter holding about 0.5 per cent. in free suspension, which is opalescent in appearance in that concentration, the opalescence disappears in the concentration employed by me. The several proteins and fatty extractives having been obtained separately and having each been standardized, any free alkali in protein No. 4 having been neutralized by addition of a weak solution of HCl, just short of causing precipitation, the several constituents are assembled to represent the formula given in the text.

The precautions employed in preventing injury or undesirable modifications of the several bacillary products have not all been demonstrated as absolutely requisite for their highest efficiency, my purpose in their adoption having been to take no chances of an inferior preparation by their omission.

shown such in their lungs on a preliminary examination, could be accepted as present in several cases without being attended by fever excepting in one instance in which the coexisting inflammatory swelling of the arm could also have accounted for it. None of these immediate effects were in any sense troublesome, and, as stated, were exceptional in occurrence, and without any apparent relation to the size of the dose. Little influence if any has appeared to be caused by age, and while I have given no larger doses than 0.1 c.c., and as a rule only 0.05 c.c. to nurslings, the majority of all other children received 0.2 c.c. and from this amount to 0.6 c.c., the larger doses being given as a rule to children between ten and eighteen years of age. The subject of dosage requires further study; my immediate object having been to find that quantity which caused no serious disturbance and yet was effective. Having determined this, I adopted doses of one-twentieth or one-tenth of a cubic centimeter for nurslings, according to their ages, and of two-tenths to four-tenths of a cubic centimeter for older children for a single dose, while when two doses were given the first was one-half and the second dose was slightly less or the same as the single dose.

The satisfactory results observed in twenty consecutive children first immunized in Asheville made it desirable to study the method in a greater number in order to preserve me from erroneous conclusions. This I was enabled to do through the interest and courtesy of Dr. C. A. Julian of Thomasville, N. C., who is in medical charge of the children of the Baptist Orphanage at that place. Early in October of last year my studies were extended to them, and having fitted up a temporary laboratory, with the aid of Dr. Julian and of my assistant, Dr. A. E. von Tobel, preliminary examinations were made and recorded, including general appearance, present state of health, enlargement of lymph glands, physical signs in the lungs, the several tuberculin tests, blood examinations in case of apparent anemia, and for alkalinity and serum tests for specific antibodies, these examinations resulting in the selection of 262 cases for immunization. Adding to these 77 children immunized previously and since in Asheville, I have a total of 339, of which the results in the production of specific antibodies after the first dose and after each subsequent dose (when such was given) were determined; and in 300 children examinations were again made after periods of three to eight months, including this time physical examination of the chest in 118, for comparison with the records made prior to their immunization. When the taking of the blood specimen coincided with the so-called negative phase the examinations were repeated daily until the positive phase was in evidence, but it was not feasible to continue the examinations in all cases to obtain the results at the acme of the positive phase.

I have elsewhere called attention to the relation of the precipitin curve, to the opsonic index, and to amboceptor as shown by complement fixation, these giving, as a rule, the greatest value, when the precipitin curve is at the lowest point and vice versa, but it should be stated that this relation is not absolute in the sense that an immune serum of a certain case gives necessarily the same quantitative result on subsequent examinations, at a certain stage of the precipitin curve, or of the opsonic index. The quantitative variations in this respect seem to depend upon coincidence or otherwise of complement fixation with other constituents of tubercle bacilli, especially the fats, fixation with which in time of appearance, increase and subsidence appear to have a more or less independent curve, not necessarily corresponding with that of the opsonic index, or of the precipitins, suggesting a multiplicity of amboceptor. It may thus be shown that in the absence of complement fixation with tubercle bacilli emulsion and in the so-called negative phase, fixation can still occur with one or the other fatty constituents or with both, or more rarely with only one or the other of the several proteins; and my studies of these interesting phenomena, though by no means completed, show that serum specimens are occasionally taken from an immunized individual at the opportune time, when complement fixation shows the maximum for all constituents of the tubercle bacillus, in which case complement fixation with tubercle bacilli emulsion is liable to occur in higher serum dilutions than it does when such coincidence is less complete or absent.*

*Since the appearance of my preliminary report I have been in receipt of requests from several interested students for technical details for the determination of precipitins which they appeared to believe should quantitatively correspond with agglutinins, the latter being identical. Inasmuch as the technique followed in my laboratory does not differ essentially from that which all students in immunity appear to follow, I did not deem it necessary to encumber this, and much less the preliminary report with details, which may be learned in any of the standard works on immunity, and which would be unnecessary for those capable of controlling my observations if they felt so inclined. To answer such and others who desire more technical details, I wish to add them sufficiently explicit as to show that I have not departed from the usual methods. For the determination of the precipitins, a series of small test tubes is prepared corresponding in number to that of the serum dilutions, and into each is measured 1 c.c. of a solution of either one of the tubercle bacilli proteins No. 2, 3 or 4. To each tube is added an equal quantity of the particular serum dilution to be tested, and after shaking and capping the tubes they are placed in a thermostat and kept there at a temperature of 37° C. for five or more hours (precipitation occurs also at a room temperature in 12 to 24 hours), when the tubes are ready for reading the results. The precipitate is visible in the bottom of the test tube and slight agitation of the tube raises it into the clear fluid above and thus makes it still more apparent. The percentage of protein in the solution makes no difference, the precipitate coming from the serum and not from the antigen. We use either an 0.1 per cent. or an 0.01 per cent. solution; the stronger one gives a larger amount of the precipitate in the tubes containing serum in the lower dilutions. All blood sera give positive tests for precipitins. In studies of normal human serum, especially of specimens of new-born children, I found that, as a rule, a precipitate does not occur in dilutions higher than 1:200, and but rarely as high as 1:400.

Sera of tuberculous patients and of vaccinated children give precipitates in much higher dilutions, sometimes of 1:2000, 1:3000, or even 1:5000; the highest values were noted most frequently in active progressive cases of tuberculosis and after diagnostic or therapeutic doses of tuberculin preparations. Finding that complement fixation is negative, or but rarely positive, with sera that gives a precipitate in dilutions as high as 1:1600, and that at this point the opsonic index is, as a rule, below normal, we do not as a rule make tests with higher dilutions, and finding, further, that the serum dilutions in which precipitin is shown correspond inversely with the opsonic index of Wright and with quantitative determinations of complement fixation, I have for several years used the precipitin curve instead of the opsonic index for a guide, as an equally reliable and much quicker method. Its advantage I believe will be appreciated by others, especially when the daily examination of 50 or more blood specimens is contemplated. In reference to the technique used in my laboratory in the quantitative determination of specific amboceptor by complement fixation, I take it for granted that the reader needs no explanation of the theories and principles involved and refer in this respect to text books on immunity in general and to the studies of Bordet and Gengou, or of Wassermann and Bruck in particular. I

The following tables are copies of individual records which illustrate the relation and variability of complement fixation with the different antigens more fully.

TABLE I.

OBSERVATIONS PRECEDING AND SUBSEQUENT TO IMMUNIZATION WITH A SINGLE DOSE. CHILD AGE 10, PROBABLY TUBERCULOSIS. RED CELL COUNT, HEMOGLOBIN AND COLOR INDEX NORMAL

Dates	White Cell Count	Polynuclear Per Cent	Mononuclear Per Cent	Lymphocytes Per Cent	Eosinoph. Per Cent	Blood Alkalinity, Per Cent of Normal	Complete Ser. Agglutination Dilutions of	Precipitins in Serum Dilution	Opsonic Index.	Complement Fixation With T. B. Emuls	Remarks
Oct. 31, 1911.	6,000	67	8	24	1	095	20	1,600	0.6	0	Preliminary observation
Nov. 1, 1911	7,400	66	14	20	0	095	20	800	0.5	0	Preliminary observation
" 2, 1911	4,890	64	14	20	2	095	20	400	0.8	0	Preliminary observation
" 3, 1911	7,936	65	13	21	1	095	20	800	0.7	0	Preliminary observation
" 4, 1911	6,105	68	12	19	1	095	20	800	0.6	0	Immunizing dose 0.2 C.C. at 10 A.M
" 4, 1911	12,718	58	8	34	0	095	20	200	0.5	0	Obs. 6 hours after the dose
" 5, 1911	11,497	80	7	13	0	095	20	400	0.6	0	
" 6, 1911.	8,343	69	15	15	1	100	40	400	1.1	8	
" 7, 1911	8,914	74	13	13	0	100	50	100	1.1	8	
" 8, 1911	7,690	70	15	14	1	100	75	800	1.0	Trace	
" 9, 1911	8,760	68	14	16	2	105	100	400	1.4	20	
" 10, 1911	8,852	66	15	17	2	110	125	400	1.2	10	
" 11, 1911	6,001	67	16	16	1	120	125	400	1.1	10	

SUBSEQUENT EXAMINATIONS FOR COMPLEMENT FIXATION WITH ALL ANTIGENS

Antigens	T. B. Emuls. Human	T. B. Emuls. Bovine	Protein 1	Protein 2	Protein 3	Protein 4	Fatty Acid	Neutral Fats	Precipitins	Opsonic Index Wright	Immun. Opsonins in Serum Dilutions	Remarks
Mch. 8, 1912	Trace	4	0	0	0	4	0	4	1,600	1.30	200	
Apr. 12, 1912	0	0	0	0	0	0	0	0	1,600	0.92	30	
" 16, 1912	0	0	0	8	8	4	0	0	800	1.12	100	
" 17, 1912	4	8	8	20	20	20	8	4	400	1.32	500	Serum is lytic for T. B in Vitro (complete)
" 18, 1912	8	8	8	20	20	20	8	8	400	1.42	500	Serum is lytic for T.B in Vitro (complete)

The records of the children under consideration were studied collectively by tabulations in separate groups, according to age, sex, and general nutrition, absence or presence of tuberculin reactions and of serum agglutination, presence of enlarged lymph glands, and of physical signs in the lungs, in order to show whether or not any difference was apparent in their response to vaccination after one or more doses, immediately or on subsequent examinations, without, however, enabling me to show enough with the present number of children, to justify a positive conclusion that one or the other groups showed different results. The 339 immunized children represent all ages from 2 months to 18 years. Their preliminary examinations justified the following grouping as regards the presence or absence of tuberculosis: Normal (*i. e.* apparently free from tuberculosis), 85; suspects (in which the evidence of existing infection was incomplete), 94; tuberculous (in which the evidence of existing latent tuber-

may, however, say that in conformity with the common practice and the need of precautions, all antigens are standardized and frequently controlled, and that, like other observers, we used half the amount of the particular antigen which caused self checking; our hemolytic system is rabbit serum lytic for calf cells, each of them used fresh, and with the hemolytic power determined from day to day, and again controlled with each series of experiments. I may further add that the number of blood specimens examined in my laboratory for precipitins and for complement fixation amounts now to tens of thousands, and that in our clinical and experimental studies we did not omit to regularly control our technique in regard to the antigens and the hemolytic system and by occasionally checking our observations by duplicate tests made with the same serum specimens and read by the same and by independent observers, and that no results were accepted when anything was at all suggestive of error. Slight differences in readings have occasionally occurred with the same serum specimen when these were made by two or more of our staff independently of each other. Such occasional differences must be expected, depending as they do upon individual judgment, as, for instance, accepting a trace or none of a precipitate, partial or complete checking of hemolysis, complete or only partial agglutination, etc., in a particular tube. Like slight differences may occur, as is well known, in thus controlling the results of differential counts of white blood cells, in arriving at the opsonic index by counting the number of phagocyting cells, without detracting from the practicability and value of the method.

In a duplicate test of hourly examinations for complement fixation, as shown in Table 3, each observer prepared and examined independently 360 tubes. In only four of them did such a difference occur; in reading all others the observations tallied. Real errors in observations can as a rule be avoided by sufficient vigilance, and especially by the absolute rule never to make such tests without proper control tubes. This may be illustrated by an observation made in my laboratory on the day of this writing, of an unexpected and so far unaccounted for failure in the hemolytic system which, without proper control, could have caused the acceptance of complement fixation and of its coincidence with all antigens in a high degree, when the immune serum should also have been lytic *in vitro;* while the precipitin curve stood at 1200, indicating that the blood specimen was taken in the negative phase, whereas, in fact, the serum had no power to fix complement at all. The hemolytic action of the fresh serum of a rabbit upon fresh well washed calf cells had just been tested, and the hemolysis was complete in 15 minutes. With the tubes prepared for the complement fixation test was incubated a control tube which contained the rabbit serum alone and when, after two hours' incubation at 37° C., the calf cells were added, the rabbit serum failed to cause complete hemolysis as had been expected, and of course complete hemolysis also failed to occur in the tubes prepared for testing the immune serum. Additional trials gave the same results with the serum from this particular rabbit; it still caused complete hemolysis in 15 minutes without prior incubation and failed to do this after the serum remained in the thermostat at 37° C. for one or two hours.

The serum of another rabbit tested with the same calf cells acted normally regardless of its prior incubation. Why incubation for two hours at 37° C. should cause the partial loss of the specific amboceptor or of the complement in the serum of this particular animal remains to be explained; the observation is, however, suggestive of the vigilance required to prevent error.

TABLE II.

VARIATIONS IN COMPLEMENT FIXATION ON SUCCESSIVE DAYS IN A CHILD AGED 10. IMMUNIZED EIGHT YEARS AGO WITH PROTEIN NO. 2. FIGURES INDICATE SERUM DILUTIONS IN WHICH FIXATION WAS COMPLETE. TR.—INCOMPLETE. O—ABSENT IN DILUTION 1 4

Days	Precipitins Serum Dil.	ANTIGENS							OPSONINS			Remarks
		T. B. Emuls. Human	T. B. Emuls. Borine	Protein 1	Protein 2	Protein 3	Protein 4	Fatty Acid	Neutral Fats	Tuber-culin	Index Wright	Immune Serum Dil.	
1912 Apr. 1.	400	20	8	0	0	0	20	4	4	0	1.15	100	Serum is lytic for T.B. in vitro (partial)
" 2	1,600	0	0	0	0	0	0	0	0	0	.66	30	
" 3.	800	4	4	0	Trace	Trace	20	Trace	Trace	0	1.02	100	
" 4.	400	8	8	0	0	Trace	0	8	20	0	1.50	300	Serum is lytic for T.B. in vitro (partial)
" 5.	800	0	0	0	0	0	0	0	0	0	.75	30	
" 6.	1,600	0	0	0	0	0	0	0	0	0	.82	30	
" 7.	100	40	40	8	20	20	20	4	4	4	1.42	1,000	Serum is lytic for T.B. in vitro (complete)
" 8.	800	4	4	0	0	0	0	0	4	0	1.20	300	
" 11.	1,600	0	0	0	0	0	0	0	0	0	.92	30	
" 12.	400	20	20	0	20	4	20	8	20	4	1.56	500	Serum is lytic for T.B. in vitro (complete)
" 13.	1,600	0	0	0	Trace	0	Trace	0	0	0	.88	30	
" 14.	1,600	Trace	Trace	0	0	0	0	0	0	0	.84	30	
" 15.	1,600	0	0	0	0	0	0	0	0	0	.92	30	
" 16.	1,600	0	0	0	Trace	Trace	Trace	0	0	0	.98	30	
" 18.	1,600	Trace	Trace	0	0	0	0	0	0	0	.74	30	
" 19.	400	8	Trace	4	4	Trace	4	Trace	4	4	1.23	300	

TABLE III.

VARIATION IN COMPLEMENT FIXATION ON SUCCESSIVE HOURS AND DAYS WITH IMMUNE SERUM OF AN ADULT. FIGURES INDICATE SERUM DILUTIONS WITH WHICH FIXATION WAS COMPLETE. TR.—INCOMPLETE. O—ABSENT ON DILUTION 1 4

Time	Precipi-tins	ANTIGENS								Remarks
		T. B. Emulsion Human	Fatty Acids	Neutral Fats	Protein No. 3	Protein No. 4	T. B Emulsion Borine	Protein No. 1	Old Tuber-culin	
8 A.M.	800	4	0	Trace	0	0	Not used	Not used	Not used	Before breakfast
9 "	1,600	0	0	0	0	0	"	"	"	
10 "	800	4	Trace	Trace	Trace	0	"	"	"	
11 "	400	4	0	Trace	4	0	"	"	"	
12 M	400	8	Trace	Trace	0	Trace	"	"	"	
1 P.M.	400	8	0	Trace	0	0	"	"	"	
2 "	800	Trace	0	Trace	0	0	"	"	"	After dinner
3 "	1,600	0	0	0	0	0	"	"	"	
4 "	800	Trace	0	4	0	0	"	"		
5 "	400	4	Trace	4	0	Trace	"	"		
6 "	400	4	Trace	4	4	0	"	"		
7 "	400	4	4	4	4	4	"	"		
1st day	400	8	0	Trace	0	0	0	0	0	
2nd "	800	4	0	Trace	0	0	0	0	0	
3rd "	400	8	0	0	0	0	4	0	0	
4th "	1,600	0	0	0	0	0	0	0	0	
5th "	100	40	20	8	8	20	40	8	4	Serum is lytic for T.B. in Vitro (complete)

culosis was thought to be conclusive), 160. More or less deficiency in general appearance and especially in nutrition was noted in most of the tuberculous, and not infrequently in those classed as suspects, while the normal children did not, as a rule, lack in this respect. Of those classed as tuberculous physical signs could be shown in chest examinations in 118, slight and confined to one side in some, more marked or on both sides in others—mostly girls belonging to ages between 10 and 18. Physical signs were absent in suspects; instead, the finding of enlargement of lymph glands was the rule, more frequently of the cervical and axillary groups, often both, sometimes the inguinals were also enlarged. Enlarged faucial tonsils were frequently noted. No marked deviations from normal were observed in cell counts or hemoglobin determinations in instances where these were made. The determinations in blood examinations, including alkalinity, amboceptor, and opsonins before and after each dose in the 339 children immunized and in the 300 children re-examined represent a total of over 3000 individual examinations.

Tabulations of the results give the following averages:

BLOOD ALKALINITY.*

	Average	Minimum	Maximum
Preliminary examinations	0.85	0.60	1.00
Examination after first dose	1.05	0.90	1.20
Examination after second dose	1.20	1.05	1.30
Examination 3 to 8 months later	1.20	1.10	1.30

SERUM AGGLUTINATION†

	Average	Minimum	Maximum
Preliminary examination	1 4	0	1 40
Examination after first dose	1 50	1 25	1 125
Examination after second dose	1 112	1 25	1 200
Examination 3 to 8 months later	1 100	1 25	1 150

SPECIFIC AMBOCEPTOR AS SHOWN BY COMPLEMENT FIXATION WITH T. B. EMULSION AS ANTIGEN.‡

Serum Precipitation Positive in Dilutions of 100 or 200 Average	Serum Precipitation Positive in Dilutions of 400 Negative at 800. Average	Serum Precipitation Positive in Dilutions of 800 Negative at 1600. Average
Examination after first dose 1 24	1 10	1 8
Examination after second dose 1 20	1 15	1 7
Examination 3 to 8 months later 1 22	1 12	1 8

*The blood alkalinity was estimated by Dare's method, which is based on a normal of 266 milligrams sodio hydrate per 100 cubic centimeters of blood. We have repeatedly controlled the results obtained by Dare's with trituration methods and found no material difference. Appreciating that no method is absolutely accurate, that of Dare has the advantage of rapidity and appears to serve for comparative studies as well as any other.

†The minimum of 1:25 occurred in normal children who had received only one dose.

‡Preliminary examinations in complement fixation were made in 110 children, most of them suspected or believed to be tuberculous. In 25 of the normal children, and in the study of complement fixation of serum specimens from

In eighty children and several adults the amboceptor studies included observations with other bacillary constituents as antigens, namely, the neutral fats and fatty acids, and several of the proteins in addition to emulsion of tubercle bacilli of human and of bovine origin. The preceding tables 1, 2 and 3 are illustrative of the results obtained.

Precipitins.—The observations of the power of the sera in dilutions of 1:100-200-400-800-1600 to precipitate a 1/100 of 1 per cent. solution of tubercle bacilli protein were useful chiefly as a guide to the negative and positive phases. In the study of my tabulated results it appears that the precipitin curve in the tuberculous is, as a rule, higher, more variable, does not reach the low point as frequently and in some instances not at all until several months after immunization.

The Opsonic Index.—The opsonic index in cases in which it also was studied in the preliminary examination, was practically normal for normal children. For tuberculous children and suspects the average was 0.85, with a minimum of 0.50. Studies of so-called immune opsonins with normal salt solution as a control show that the specific opsonic power of the serum likewise varies inversely with the precipitin curve and runs nearly parallel with the degree of complement fixation of a particular specimen. The normal salt level was reached most often with serum dilutions of 1:500 to 1:1000 or over when complement fixation occurred in serum dilutions between 1:20 and 1:40. With positive fixation in dilutions of 1:8 or 1:4 the salt level was reached sooner, as a rule in dilutions of 1:100 to 1:300, while in the absence of complement fixation the salt level was reached in serum dilutions of 1:30 to 1:100. The influence of immunization upon children classed as suspects, or as apparently tuberculous in their examinations three to eight months later, was particularly shown by improvement in their general appearance when this had been found impaired on their preliminary examination, not only as observed by comparing the records but also as observed by those in immediate charge. Gain in weight occurred almost uniformly, amounting in many instances to ten to forty pounds, and therefore in excess of the normal increase of a growing child. In regard to the effect upon enlarged lymph glands, while diffi-

100 newborn children, for other purposes, complete fixation was never observed in serum dilutions of 1:4, a trace only being shown in two instances. In the groups of children probably tuberculous and accepted as such, the 85 determinations made showed complete fixation with a low precipitin curve and with serum dilutions 1:4 in six, and a trace in 14 cases.

EXPLANATION OF PLATE.

A and B represent tubercle bacilli, from control tubes after incubation for 24 hours: A with normal salt solution, B with normal human serum. The bacilli are unchanged.

No. 1 shows the result obtained with immune serum from a child vaccinated six months ago; the blood specimens taken in the negative phase; serum precipitation in dilutions 1 1000; complement fixation negative with all antigens. A slight lytic effect is shown by the beaded and faintly stained appearance of some of the bacilli seen among others, which appear unchanged. A few fragments and granules are also present.

No. 2 (a). Result with immune serum from a child vaccinated six months ago. Precipitins 1:800, complement fixation complete with T. B. Emuls. as antigen 1:4, and only a trace or negative with all other antigens. To the right of the field may be noted a dark mass which in the stained slide is of deep red color, which is acid fast and represents free fat, dissolved out of the bacilli as indicated by the faintness of their stain in most of the remaining rods and in the more numerous fragments and granules. Some of the rods are beaded. No. 2 (b). Result with the same specimen of immune serum used in obtaining Field 2 (a) renewing it twice during incubation. The field shows entire disappearance of whole rods, unless hidden by several clumps of deeply stained free fats. There are many fragments, all more or less beaded, and numerous free granules, neither of which retained the stain, as well as did the clumps of fat and the fragments which they enclose.

No. 3. Immune serum from a child vaccinated eight months ago. Precipitins 1:800. Complement fixation complete with T. B. Emuls. 1:4, fatty acids 1:4, neutral fats 1:4, negative or only a trace with other antigens. This field shows to the left a deeply stained mass of free fats which is diffused through the other parts in a thin layer appearing in light pink in the stained slide. No whole rods are present, beading of the fragments is well marked, free granules are numerous. The beading of fragments is most distinct in those which retained the stain indifferently.

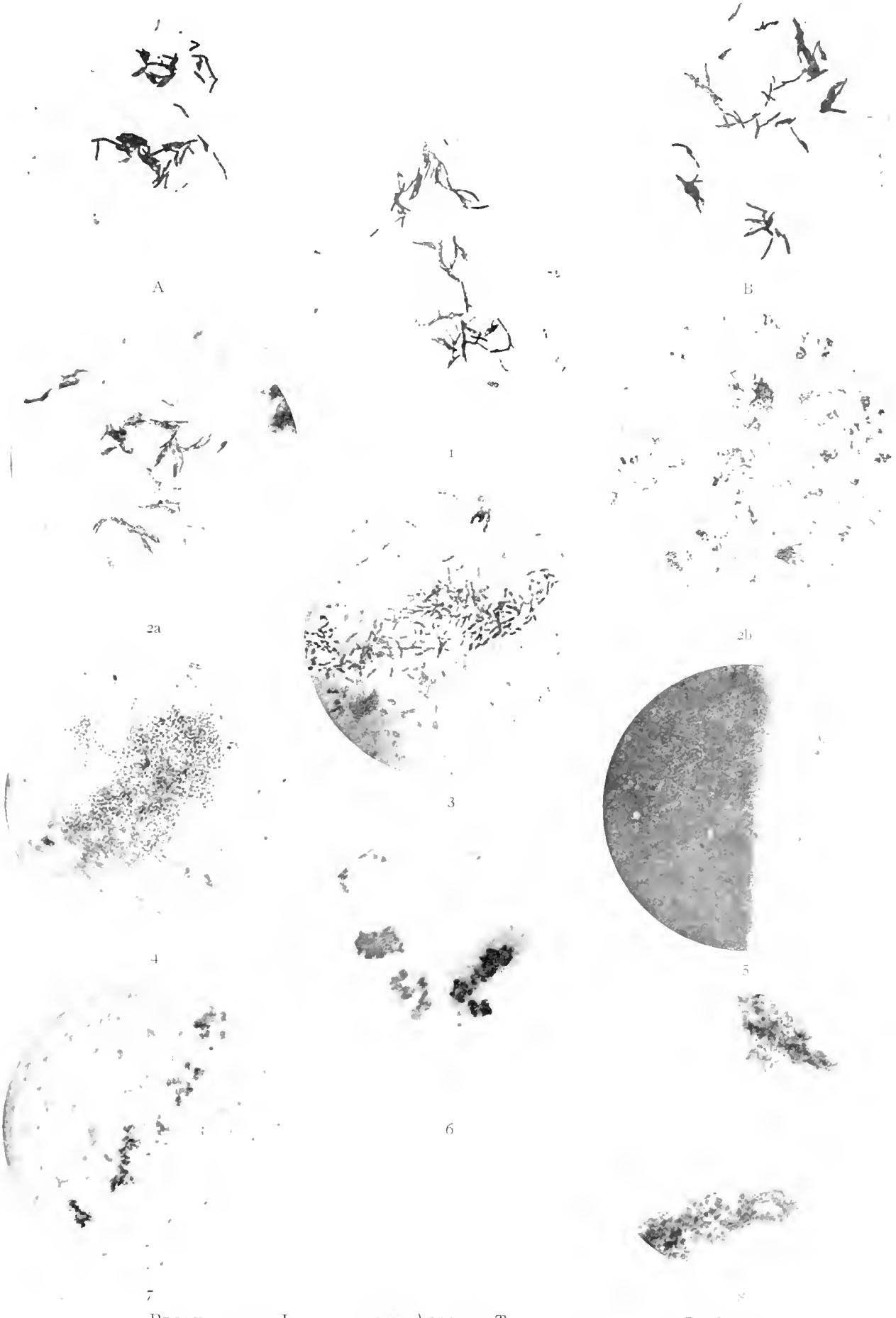
No. 4. Immune serum from a child vaccinated eight months ago. Preciptins 1:400, coinciding complement fixation with all antigens. (T. B. Emuls. 1:8, fatty acids 1:4, neutral fats 1:4, Protein No. 2 1:8, Protein No. 4 1:8.) The field shows free fats diffused and in a thin layer throughout; in the center is a mass of fine acid fast granules, and other fields like the present were found in this slide. No bacilli were found, either in cocci chains, or in larger fragments than those present.

No. 5. Immune serum from child vaccinated eight months ago. Precipitins 1:100, maximum coincidence of complement fixation in high degrees. (T. B. Emuls. 1:40, fatty acids 1:20, neutral fats 1:8, Protein No. 2 1:20, Protein No. 4 1:20.) The result shown was obtained after incubation for one hour. The left portion of the field shows a thick mass of deeply stained fats; the right portion shows a thin, diffused layer in which a few very fine, isolated granules were shown with the microscope, but are not as clearly apparent in the microphotograph. This field was selected as it was the only one showing a trace of a formed element; all other fields showed nothing, excepting more or less deeply stained fat.

No. 6. Immune serum from a child vaccinated seven months ago with Protein No. 4. Precipitins 1:400. Complement fixation with T. B. Emuls. 1:8, fatty acids 1:4, neutral fats 1:8, Protein No. 2 1:8, Protein No. 4 0. The field shows several dark masses of deeply stained fats, within which are fragments of bacilli and granules; the latter are not well shown by the microphotograph, nor are others which the mounted slide shows in the pinkish diffused fat in the rest of the field. The field is reproduced to show that the nucleoprotein alone, the same as Protein No. 2, is effective for immunization, and that though no fatty extractives were used in the children from whom this and the serum specimen of the following field No. 7 were obtained, their sera acquired the power to fix complement with the fats and have lytic power also.

No. 7. Immune serum from a child vaccinated seven months ago. The result shown is of interest inasmuch as complete complement fixation was absent in serum dilutions 1:4, with all other antigens excepting the fats, being complete with fatty acids 1:8, neutral fats 1:4. Of further interest is that, like in the preceding field, the child was vaccinated with a single one of the proteins (No. 2) without addition of fatty extractives. Diagonally across the field are seen fragments and granules of tubercle bacilli more or less embedded and surrounded by free fats, which are likewise diffused through the entire field. A few cocci-like chains may be observed; there are many free granules faintly stained. No whole bacilli were found in other fields, and the degree of lytic action appears to correspond with No. 4.

No. 8. Immune serum from child vaccinated eight years ago with Protein No. 2. The serum taken at a maximum coincidence of complement fixation with all antigens shown in observation of April 7 in Table No. 2 (T. B. Emuls. 1:40, fatty acids 1:4, neutral fats 1:4, Protein No. 1 1:8, No. 2 1:20, No. 3 1:20, No. 4 1:20.) The field shows two heaps of fine granules in deeply stained free fats, which cannot be discolorized with acids. These and other free granules were but faintly stained with fuchsin and took the counterstain. Similar fields were found in this and other slides. The lytic action of this serum specimen is of interest, inasmuch as the immunization of this child dates back eight years.



PROPHYLACTIC IMMUNIZATION AGAINST TUBERCULOSIS.—*von Ruck.*

cult to compare, I can state that in numerous instances none were found when their presence had been recorded, or only one or a few were found when the records showed many. More accurate comparison was possible in regard to physical signs, especially when these had been recorded upon a special chart. Frequently they had entirely disappeared, and there was not a single instance in which a comparison did not indicate unmistakable improvement. The inclusion of the children suspected or accepted as being tuberculous in this study appeared desirable in order to show the possible necessity of excluding them from the rapid method of immunization with a single dose. I consider it particularly fortunate and important that it was not found necessary to proceed in such with greater caution by using very small, repeated and increasing doses in order to avoid severe alarming and possibly dangerous reactions, since such a necessity would have required all our diagnostic resources, and would thus have greatly limited the employment of the rapid method in the hands of the general practitioner.

Having shown the prompt and uniform development of all specific antibodies after a single dose of the preparation, by the method described and the induced immunity being still evident in like degree in every case re-examined three to eight months later and after a lapse of eight years in the one case in which I made the first trial, and having further confirmation in regard to the endurance of the induced immunity by the fact that I have in numerous instances been able to show the same permanency in therapeutic immunization with one of the constituent proteins after periods of two to fourteen years, I proceed now to the relation of experimental studies designed to show that the method is ample to protect against virulent infection. My bacteriolytic studies with immune serum designed to show this were not immediately successful in results, and not until I had learned to select the serum specimens at the right time of complement fixation with the several antigens, as indicated in the preceding tables, and until instead of inactivating and adding fresh complement, the immune serum was used active and in the fresh state. Since then I have had no difficulty in obtaining a lytic effect of a greater or less degree, this corresponding practically to the amount of free amboceptor for the different antigens shown in the serum specimen; after numerous observations in vaccinated children and in clinical cases I find that the degree of lysis can serve as an index for the presence and coincidence of specific amboceptor. I have for the present adopted a scale of 0 to 5; the zero which corresponds to a negative result is shown in my control slides and is illustrated in the two fields marked A and B, in which the bacilli appear unchanged and are normally stained. Fields No. 1 to 5 show an increasing lytic effect to the complete absence of any formed elements, fragments, or granules, nothing remaining but the free fat liberated by the lytic serum, which still retains the stain. The morphological changes of the bacilli, shown by faintness of stain, tendency to take the counterstain, beading, breaking up into fragments and granules free or simulating short chains of cocci, are of interest in connection with the meaning of such forms, when found in tuberculous lesions, sputum, urine, and pus, and support the opinion of those who believe that they represent evidence of degeneration. All these forms may be observed in the accompanying reproductions of microphotographs made from my mounted slides intended to show the various degrees of lysis obtained with immune sera, according to the amount of free amboceptor present at the time the blood specimens were taken from vaccinated children.

The technique for the experiment is the usual one.*

The accompanying plate shows reproductions of microphotographs with magnifications of 1000 diameters of fields from mounted slides prepared as heretofore described.

Examinations of the lytic effect of immune sera were also made in the hanging drop, the tubercle bacilli having first been faintly stained with methy-

*A suspension of virulent tubercle bacilli from a rapidly growing culture is prepared with normal salt solution, of which two drops from a small pipette represent 0.01 milligram of tubercle bacilli which have been pressed as dry as possible between clean sterile filter paper. Excessive grinding must be avoided to prevent the presence of fragments, and yet freedom of clumps of bacilli, as shown by microscopic examination, must be secured by frequent use of the centrifuge, separation of the clear fluid and regrinding of the residue. It is, however, preferable to leave a few adherent bacilli, rather than to produce fragments, inasmuch as some clumping is likely to occur anyway, on the addition of the immune serum which causes more or less agglutination; and the greater the latter is, the morer rapidly will clumping occur, and the more will it interfere with the disintegration of the bacilli, as the clumping prevents the free access and contact of the serum. I find that with an immune serum of low agglutinating power, in serum dilutions 1:25 to 1:50, little or no clumping occurs. This was the case with serum specimens from children who received only one dose of the vaccine. After preparing one or more control slides of the emulsion, two drops each of the emulsion and of the active fresh, immune serum are placed in each of two small, narrow test tubes, with or without two drops of additional complement which we find has little if any influence. A control tube is prepared in which the immune serum is omitted and normal salt solution is substituted, and if normal human serum (*i.e.* from an untreated non-tuberculous subject) is available, another control tube is made with normal serum, known to be so, by repeated previous tests for complement fixation, having been negative in results, when the precipitin curve is not over 200. The little tubes are now well agitated and capped or corked to prevent evaporation; they are placed in the thermostat at a temperature of 37° C., where they remain for 24 hours. When the serum shows a high degree of coinciding complement fixation, complete lysis excepting of large clumps may be noted already after an hour or two, and even the clumps may have given place to an extremely fine mass of granules in the course of the first three hours of incubation. With lower powers of complement fixation, the lytic effect *in vitro* may be more or less enhanced by repeated addition of fresh active immune serum, during the time of incubation. Addition of more fresh complement from animals has no material influence. After incubation, the tube contents are agitated with a sterile looped platinum wire, and by shaking, and with this wire specimens are removed and prepared for microscopic examination. We think that Spengler's picric acid stain gives as good, if not better, results than does the Ziehl stain, and that staining after Gram is not more effective in demonstrating the bacillary residue. Two or more specimens prepared with the same immune serum show, as a rule, the same degree of lysis; it may, however, happen that one shows slightly more or less, which I believe depends then on the degree of agglutination and clumping. The control tubes show no morphological change of bacilli and do not differ from the control slide prepared from the emulsion before the test is made.

If the virulence of the tube contents is to be tested and compared they are drawn up with the needle of the hypodermic syringe to be used for infection, and after rinsing the empty tube with several drops of normal salt solution and adding them to the content of the syringe; the fluid is injected into the peritoneal cavity of a normal guinea pig, weighing about 400 grams. Very small animals are liable to die of anaphylactic shock and even full grown animals may thus be lost, when the lytic effect of the immune serum has been complete, as will be noted in my experiments to be described further on.

lene blue. The several tests varied with the degree of complement fixation, and in an observation with a serum specimen in which this was complete with all antigens the result was as follows: After 15 minutes, no change; after 30 minutes, slight changes; after 45 minutes, bacilli appear broken up, an occasional rod is still visible; after 60 minutes, the field has the appearance of being composed of cocci.

Animal Experiments.—Normal animals were infected intraperitoneally with the contents of tubes used for bacteriolytic studies *in vitro*, and to save repetitions I may mention that unless otherwise stated, each tube contained 0.01 milligram of living virulent tubercle bacilli in suspension, plus the fresh active immune serum to be tested, with normal fresh complement added when the tube was prepared, while in control animals normal human serum or normal salt solution was substituted for the immune serum, incubated as were the other tubes.

Group I.—Control animals. Guinea Pig. No. 1: Infected with contents of a normal serum tube; weight, 570 grams. Death occurred 41 days after infection; weight, 500 grams. Autopsy: Tuberculosis of liver, spleen, kidneys, and lungs. Tuberculous peritonitis, mesenteric, retroperitoneal and bronchial glands enlarged, and tuberculous, many of them caseous, all showing well stained tubercle bacilli in smears. Guinea Pig No. 2: Infected same as No. 1. Weight 660 grams. Death occurred 41 days after infection, weight 520 grams. Autopsy: Generalized tuberculosis, practically the same findings as in Guinea Pig No. 1. Guinea Pig No. 3: Infected same as Nos. 1 and 2. Weight 470 grams. Death occurred 42 days after infection; weight, 320 grams. Autopsy: Generalized tuberculosis, same findings as in No. 1; in addition the inguinal glands are also tuberculous. Guinea Pig No. 4: Infected with contents of tube, in which the normal serum was substituted by normal salt solution; weight 540 grams. Death occurred 32 days after infection. Weight 440 grams. Autopsy: Generalized tuberculosis, practically same findings as in other control animals. Circumscribed abscess at peritoneal point of infection puncture.

Group II.—Experiments with immune serum: Two normal animals infected with tube contents, the immune serum taken in the positive phase but having been inactivated and normal rabbit complement added, without, however, any lytic action having been demonstrable *in vitro*. Guinea Pig No. 1: Weight 650 grams. Death occurred 80 days after infection. Weight 500 grams. Autopsy: Cold abscess at site of infection; tuberculous peritonitis slight in degree, fine adhesions; inguinal lymph glands caseous; bronchial glands enlarged and tuberculous; few tubercles are found in omentum, mesentery, liver, and lungs; acute pneumonia of both lower lobes non-tuberculous in nature, which caused death. Guinea Pig No. 2: Weight 800 grams. Death occurred 76 days after infection. Weight 605 grams. Autopsy: Inguinal and axillary glands enlarged and caseous, caseation at site of infection, local tubercle of peritoneum adjacent. Scattered tubercle in spleen and liver, one tubercle upon peritoneal surface of left kidney; mesenteric, retroperitoneal, bronchial and mediastinal glands enlarged. Scattered tubercle in both lungs.*

*A third animal belonging to this group is still living, three months after infection; the animal is, however, losing in weight and shows otherwise that it is tuberculous and that death will occur in the near future.

Group III.—Ten animals belonging to this group were infected intraperitoneally each with the contents of a tube which, after incubating a suspension of 0.01 mgr. virulent tubercle bacilli with fresh active immune serum from vaccinated children and normal rabbit complement, showed on microscopic examination degrees of lytic action corresponding to the numbers 1 to 5 of the accompanying plate. Five of the animals were killed and the result of their autopsies follows. Five of the animals are still living and in perfect condition. Guinea Pig No. 1: Weight 510 grams. Killed 84 days after infection. Weight 700 grams. Autopsy: A firm nodule, size of half pea, in fat near the attachment of the mesentery is all that is found. The nodule shows fibrous structure, a few round cells between fibers, no giant cells, no tubercle, no tubercle bacilli or granules. Guinea Pig. No. 2: Weight 550 grams. Killed 84 days after infection. Weight 745 grams. Autopsy: Two small hard nodules in omentum, with adhesion to diaphragm; the larger one has a fibrous capsule and a minute caseous center, smears from which show very few acid fast granules; the other nodule is fibrous in structure throughout. Guinea Pig No. 3: Weight 505 grams. Killed 84 days after infection. Weight 725 grams. Autopsy: Nothing found but one small nodule (pin point in size) in the mesentery, which is of fibrous structure throughout. Guinea Pig No. 4: Weight 820 grams. Killed 86 days after infection. Weight 770 grams. Autopsy: Three fibroid nodules in omentum; two similar ones the size of pin's head in the liver, one same size in the left lung. The omental nodules have a fibrous capsule with small caseous centers, traversed by tissue fibers, a few leucocytes, but no tubercle bacilli or granules can be found. The nodules from the liver and left lung are calcified. Guinea Pig No. 5; Weight 530 grams. The immune serum in the tube used was taken in the negative phase; no complement fixation occurred in 1:4 serum dilution with any of the antigens, only traces or incomplete fixation. The tubercle bacilli were scarcely changed at all. The object of the experiment was to show if tubercle bacilli would nevertheless become sensitized, and if this could be demonstrated by observation in the study of Pfeiffer's phenomenon. After 1 hour, numerous free bacilli in the exudate and but few in the leucocytes; after 3 hours, few free bacilli, numerous bacilli in the leucocytes; after 24 hours, occasionally a free bacillus; few bacilli, more granules in leucocytes. Killed 70 days after infection. Weight 680 grams. Autopsy: Only one enlarged bronchial gland was found; this showed round cell infiltration, no tubercle, no giant cells; smears from gland residue after dissolving in antiformin, negative.

Group IV.—This group includes 10 guinea pigs which were infected same as those of the preceding group, but the lytic action of the immune serum *in vitro* being complete, or nearly so, as shown in numbers 6, 7, 8 of the plate. Of these 10 pigs 5 were found dead 12 hours after infection; their autopsies showed the heart distended with blood, the lungs congested and a small amount of serous exudate in the peritoneal cavity, smears from which showed neither tubercle bacilli nor granules. The sixth pig died under rapid loss of weight (100 grams) on the sixth day; its autopsy showed exudative peritonitis, smears from the exudate were negative as to finding of tubercle bacilli or granules. The other four pigs are living, and are gaining in

weight, three months after their infection. The five pigs which were found dead 12 hours after infection were quite cold and stiff, suggesting that death had occurred a few hours only after the contents of the tubes had been injected into the peritoneal cavity, a result which can be best explained by bacterial anaphylaxis, against which I thought that I had guarded, by the small dose of 0.01 milligram of tubercle bacilli used in the experiment, Aronson in a recent contribution giving 10 to 20 milligrams as the minimum for such results. The fatal effect of the comparatively extremely small number of tubercle bacilli having undergone complete lysis, appears to confirm those who consider the presence of specific amboceptor of material influence in the production of the phenomenon.

Group V.—This group comprises 5 rabbits infected intraperitoneally with the content of tubes after incubation for 24 hours with immune serum of 1/10 milligram of virulent tubercle bacilli of bovine origin, the experiment being designed to show the effect upon tubercle bacilli of bovine origin. Rabbit No. 1: Control. Weight 1980 grams. (Normal salt solution was substituted for immune serum.) Death occurred 47 days after infection. Weight 1850 grams. Autopsy: Generalized tuberculosis involving both lungs, liver, and kidneys, axillary, inguinal and bronchial glands enlarged and tuberculous. Rabbit No. 2: Control. Weight 2050 grams. (Normal human serum from a new-born child was substituted for immune serum.) Death occurred 48 days after infection. Weight 1900 grams. Autopsy: Generalized tuberculosis of all organs, practically the same as found in Rabbit No. 1. Rabbit No. 3: Control. Weight 1660 grams. (Normal human serum from an adult was substituted for immune serum.) The animal lost 90 grams in weight in the first week, then gained. Killed 111 days after infection. Weight 1860 grams. Autopsy: Abdominal organs normal, no lymph gland enlargement, excepting one bronchial gland; in lower lobe of the left lung are found numerous nodules, showing epitheliod and giant cells; they are well encapsulated, in some of them bands of fibrous tissue are interspersed between the cells. No caseation was found in any of them, nor could tubercle bacilli be demonstrated in sections. After dissolving a portion of the involved lung tissue in antiformin examinations of smears made from the residue gave negative results. The enlarged bronchial gland was found to be fibrous in structure but still showing round cells between the tissue fibers, no tubercle or giant cells and no tubercle bacilli were found in sections, and smears from antiformin residue gave negative results. The animal was evidently recovering from the infection. Rabbit No. 4: Weight 2270 grams. Infected with tube containing 1/10 milligram virulent tubercle bacilli of bovine origin, after having been incubated 24 hours with serum from an immunized child showing complement fixation 1:10 with Tubercle Bacilli Emulsion (no other antigens employed). Killed 80 days after infection, weight 2320 grams, after a loss of 100 grams during the preceding week. Autopsy: Nothing found; all organs and lymph glands normal; the liver showed numerous cysts of coccidium cuniculi, which account for recent loss of weight. Rabbit No. 5: Weight 1960 grams. Infected same as rabbit No. 4; the human serum used was obtained from an immunized adult and showed complement fixation 1:20 with tubercle bacilli emulsion (no other antigens employed). Killed 111 days after infection. Weight 1600 grams. Autopsy: Same result as in rabbit No. 4, the liver showing likewise coccidium cysts, only more numerous. These experiments I hope to repeat with a larger number of animals, in a contemplated study of the relation of bovine infection to human tuberculosis, and especially in regard to the comparative resistance of infants and adults. *Experiments with immunized animals:* In the immunization of guinea pigs and of rabbits we failed to demonstrate specific amboceptor after a single dose. Repeated doses of from 0.1 to 1.0 c.c. were given during six weeks before complement fixation in serum dilutions of 1:4 and in one or two animals of 1:8 could be shown. There was, however, a steady increase of agglutinins, and the precipitins varied, as observed in the human subject. Complement fixation with other antigens was not tried in all of them, because of the difficulty to get enough serum from such small animals. The immunization of rabbits appears to require still larger doses. Under a gradual increase to 1.0 c.c. we had in only one of thirty animals obtained complement fixation with its serum, and at that time the whole number was lost by an epidemic of pneumonia.

Group VI.—This group was designed for the study of Pfeiffer's phenomenon and comprises eight guinea pigs, six of them immunized, and two normal animals used for controls. The observations made and the autopsies of the controls and of five immunized animals follows below. The sixth animal, having then a litter of young, was allowed to live, and is still living and in good condition after giving birth to another litter of young. It will be noted that the disintegration of the tubercle bacilli occurred after phagocytosis, within the leucocytes. Guinea Pig. No. 1: Control. Infected intraperitoneally with 10 mgr. virulent T. B. Weight 560 grams. Pfeiffer's phenomenon: After 1 hour, many tubercle bacilli free, few in leucocytes; after 3 hours, many tubercle bacilli free, few in leucocytes; after 24 hours, many tubercle bacilli free, more numerous in leucocytes, no granular disintegration. Death occurred 30 days after infection. Weight 380 grams. Autopsy: Generalized tuberculosis, involving the peritoneum, omentum and mesentery, the abdominal organs being involved to a greater degree than the lungs. Guinea Pig No. 2: Control. Infected with 5 milligrams of tubercle bacilli, same culture. Weight 580 grams. Pfeiffer's phenomenon: After 1 hour, many tubercle bacilli free, few in leucocytes; after 3 hours, many tubercle bacilli free, few in leucocytes; after 24 hours, many tubercle bacilli free, many in leucocytes; no granular disintegration. Death occurred 41 days after infection. Weight 480 grams. Autopsy: Generalized tuberculosis, same as in animal No. 1, but with greater involvement of the lungs. Guinea Pig No. 3: Immunized. (The serum of the animal shows complement fixation complete with T. B. Emulsion 1:8, with fatty acids 1:8, with neutral fats 1:8, serum agglutination 1:150, precipitins 1:400.) Infected intraperitoneally with 10 milligrams tubercle bacilli, same culture as used in controls. Weight 630 grams. Pfeiffer's phenomenon: After 1 hour, few tubercle bacilli free, many granules and few T. B. in leucocytes; after 3 hours, no tubercle bacilli free, many granules, no bacilli in leucocytes; after 24 hours, no free bacilli nor granules; nothing in leucocytes. Killed 70 days after infection. Weight 750 grams. Autopsy: A small fibrous nodule in mesentery; one upon free e 'ge of the liver; one enlarged hard bronchial gland. The nodules and the lymph gland show

only fibrous structure. No evidence of tubercle or caseation; no tubercle bacilli. Guinea Pig No. 4: Immunized. (The serum of the animal shows complement fixation complete with T. B. Emulsion, 1:4; no other antigens used; precipitins 1:800; serum agglutinution 1:150.) Infected same as No. 3. Weight 420 grams. Pfeiffer's phenomenon: After 1 hour, few tubercle bacilli free, few in leucocytes; after 3 hours, few tubercle bacilli free, few T. B., many granules in leucocytes; after 24 hours, nothing free, few granules in leucocytes. Killed 90 days after infection. Weight 550 grams. Autopsy: At point of infection puncture a small adhesion to a loop in intestine. Two small firm nodules in omentum, with adhesion to stomach and liver. Nodules show a thick, fibrous capsule, one is centrally caseated; caseous material showing few acid fast granules; the other nodule is fibrous in structure throughout. Guinea Pig No. 5: Immunized. (The animal's serum shows complement fixation with T. B. Emuls. 1:8; no other antigens used; precipitins 1:800; agglutinins 1:150.) Infected same as No. 3. Weight 560 grams. Pfeiffer's phenomenon: After 1 hour, few T. B. free, few T. B., many granules in leucocytes; after 3 hours, No T. B. free, only granules in leucocytes; after 24 hours, nothing free, very few granules in leucocytes. Killed 90 days after infection. Weight 635 grams. Autopsy: One small nodule in peritoneum at point of infection puncture, with adhesion to tip of right seminal vesicle. One small nodule in omentum, another upon lower surface of diaphragm, with adhesion to liver. All three nodules have a thick fibroid capsule, with caseous center showing acid fast granules. Guinea Pig No. 6: Immunized. (The animal's serum shows complement fixation complete with T. B. Emulsion 1:8; no other antigens used; precipitins 1:400; agglutinins 1:100.) Infected same as Control No. 2. Weight 740 grams. Pfeiffer's phenomenon: After 1 hour, few T. B. free, many in leucocytes; after 3 hours, no T. B. free, few T. B. and many granules in leucocytes; after 24 hours, no T. B. free, few granules in leucocytes. Killed 70 days after infection. Weight 735 grams. Autopsy: One nodule in mesentery is all that can be found; it shows fibrous structure with few round cells, no tubercle, no giant cells. Antiformin residue shows one clump fine acid fast granules. Guinea Pig No. 7: Immunized. (The animal's serum shows complement fixation complete with T. B. Emulsion 1:8; neutral fats 1:8; fatty acids 1:8; precipitins 1:400; agglutinins 1:150.) Infected same as Control No. 2. Weight 860 grams. Pfeiffer's phenomenon: After 1 hour, few tubercle bacilli free, many in leucocytes; after 3 hours, no tubercle bacilli free, few T. B. and many granules in leucocytes; after 24 hours, nothing found free, nothing in leucocytes. Killed 70 days after infection. Weight 940 grams. Autopsy: Two small firm nodules in omentum are all that can be found. The slightly larger one shows a fibrous capsule with minute caseous center; smears from this show a few acid fast granules. The other nodule shows fibrous structure throughout.

GROUP VII.—Fifteen guinea pigs, 14 immunized, 1 normal for control, were infected uniformly with a suspension containing 0.01 milligram of virulent tubercle bacilli by injection with a hypodermic syringe into the lumen of the trachea. Guinea Pig No. 1: Control. Weight 480 grams. Death occurred 23 days after infection. Weight 360 grams. Autopsy: Tuberculosis of axillary and inguinal glands, of peritoneum, liver, spleen, mesenteric and retroperitoneal glands, bronchial glands much enlarged, few tubercle in the lungs. Enlargement and pressure of bronchial glands caused interference with respiration during several days preceding, and no doubt was the cause of comparatively early death. Guinea Pig No. 2: Immunized. Weight 720 grams. (The animal's serum shows complement fixation with T. B. Emulsion 1:4; no other antigens used; precipitins 1:400; agglutinins 1:150.) Killed 8 weeks after infection. Weight 830 grams. Autopsy: Normal findings in all respects, excepting one large gland at bifurcation of trachea. The gland showed a thick, fibrous capsule, centrally round cell, infiltration and a few giant cells. No tubercle bacilli or granules in smears from antiformin residue. Guinea Pig No. 3: Immunized. Weight 820 grams. (The animal's serum shows complement fixation with T. B. Emulsion 1:4; no other antigens used; precipitins 1:400; agglutinins 1:150.) Killed 8 weeks after infection. Weight 850 grams. Autopsy: One enlarged tracheal and one enlarged bronchial gland found to have a fibrous capsule. Caseous centers contain numerous acid fast granules.* Guinea Pig No. 4: Immunized. Weight 900 grams. (The animal's serum shows complement fixation with T. B. Emulsion 1:4; no other antigens used; precipitins 1:800; agglutinins 1:150.) Killed 8 weeks after infection. Weight 880 grams. Autopsy: Nothing found internally. Two enlarged axillary glands show round cell infiltration; no tubercle or giant cells. Smears from antiformin residue show no bacilli, no granules. Guinea Pig No. 5: Immunized. Weight 700 grams. (The animal's serum shows complement fixation with tubercle bacilli emulsion 1:4; no other antigens used; precipitins 1:800; agglutinins 1:150.) Killed 8 weeks after infection. Weight 760 grams. Autopsy: Three enlarged tracheal glands showing round cell infiltration; no tubercle or giant cells. Smears from antiformin residue show few clumps of very fine acid fast granules. Guinea Pig No. 6: Immunized. Weight 640 grams. (The animal's serum shows complement fixation with tubercle bacilli emulsion 1:8; no other antigens used; precipitins 1:400; agglutinins 1:150.) Killed 8 weeks after infection. Weight 760 grams. Autopsy: A slightly enlarged tracheal and a cervical lymph gland, which show round cell infiltration; no tubercle or giant cells. No tubercle bacilli or granules in smears from antiformin residue. Pigs No. 7 to 14 showed complement fixation of 1:4 or 1:8 prior to their infection; they were allowed to live for further observation, as were some others of preceding series, all of which continue in a good state of nutrition and are apparently well.† About thirty rabbits immunized to show results from infection with tubercle bacilli of bovine origin were lost before they were infected in an epidemic of pneumonia.

More numerous experiments with immunized animals would have been made had my efforts to obtain more animals been successful. To compensate for a greater number I have taken extra pains and pre-

*The caseous material was used for subcutaneous infection of a young guinea pig. The animal is living and is growing and increasing in weight ten weeks later. There has been no ulceration of the skin or abscess at the site of infection.

†At the time of proof-reading, August 5, all these animals are still in perfect condition. In other animal experiments completed since May 1 the same results as recorded in this report have been obtained. The serum tests in about sixty additional vaccinations of children and of adults conform in results to those of the present series.

cautions in critical control of their infections and autopsies, and in the maintenance of a maximum degree of virulence of the cultures of tubercle bacilli which were used, which latter is amply shown in the autopsy records of the ten control animals which appear at the head of the several groups of experiments. I may also state in this connection that this present series of animal experiments includes only those made since July, 1911, and that a much greater number of such experiments were made in my preliminary studies of the separate constituents of the preparation during preceding years, the results of which justified me in extending my observations to the human subject for prophylactic purposes. The fact, however, that the blood tests for antibodies, the bacteriolytic action of the immune sera, and the several groups of animal experiments confirm one another and are uniform in correspondence throughout is suggestive that additional animal experiments will not show materially different results. In regard to the preparation itself, I make no claim to the one I have used as being the only one that will cause the results which I have shown. On the contrary, I believe I have made it apparent that any of the constituents of the bodies of tubercle bacilli are more or less effective for the purpose of immunization. What I claim for my own preparation is its safety and its prompt and efficient action to make a single dose effective.

The fact that latent infections are no contraindications to vaccination with a single dose would make a beginning in children having a tuberculous environment particularly feasible and most desirable, since in such families objections to vaccination are not likely to be raised, while the great majority of childhood infections originate among them. The simplicity of the method of giving a hypodermic injection of the liquid without other preparation or examination being required than the exclusion of manifest tuberculous disease and the proper cleansing of the part where the injection is made, makes it particularly available to the busy practitioner, and the inexpensiveness of the necessary dose should bring it within the reach of the poor, for whom, if it be necessary, I shall always be glad to supply it without cost, as far as my laboratory facilities will enable me to comply with such requests.

The employment of this vaccine for therapeutic purposes naturally suggested itself. My studies in this direction indicate that the doses in specific treatment, as practised heretofore, have probably been given too frequently, and that with a preparation like the one under consideration they need not be repeated oftener than once in five days or a week, and that the treatment need not be continued as long as has been the practice heretofore. I likewise find that in early stage cases, especially such in which active symptoms are not present, the initial dose may be much larger without causing marked systemic reactions, and that after three or four doses of 0.05, 0.1, 0.2, and 0.4 c.c. given a week apart an ample degree of immunity can be shown by complement fixation and by the lytic action of the patient's serum upon tubercle bacilli *in vitro*. In more advanced cases longer specific treatment appears necessary, even though ample immunity may be demonstrable, chiefly, I believe, because of the value of focal reactions which cause increased vascular turgescence and permeation of the tuberculous lesions by the patient's own immune serum.

The advanced stages of phthisis do not as a rule offer the best prospects for specific treatment by reason of the caseous and fibro-caseous lesions and suppuration of open surfaces, already present, which are not accessible to the germicidal action of the immune serum. In the more favorable chronic cases in which fever is slight or absent, and the nutrition is still good, I find frequently a fair degree of immunity having developed spontaneously in the course of their disease, and believe that the benefit from further specific treatment in such is then chiefly due to greater vascularity induced by the local reaction after a given dose. This local reaction need not necessarily be dependent upon the use of the specific product of tubercle bacilli, and can be induced by other agents, especially hetol, and this action observed by me for many years during my connection with the Winyah Sanatorium appears to be the true explanation for the favorable observations of Landerer and of others.

Whether or not synthetic chemistry, which has given us material aid in the treatment of syphilis, and is being extended to preparations to be used for carcinoma and tuberculosis, will do more than specific immunization can accomplish the future must decide; but however germicidal such a preparation may prove to be it must depend for its action upon conveyance through the circulation to the point where needed, and must be limited the same as is the bacteriolytic action of the patient's own immune serum, in which the advantage would be in favor of the latter, as if once the patient is immunized the action of his immune serum would be continuous and available for a long period of time, while, as in syphilis, the chemical agent would require more or less frequent repetitions of administration and would leave the door open for reinfection unless the patient has acquired immunity spontaneously or by specific treatment. If, however, the chemical agent would also prove germicidal for other pathogenic organisms, it would be a most valuable aid in treating cases of advanced phthisis with co-existing secondary infection.

These considerations appear to justify all the more my efforts for an effective method of protective vaccination which I believe is the true legitimate field for the employment of the specific products obtainable from the tubercle bacillus, and I venture to claim without fear of successful contradiction that my observations will stand the scrutiny and control of others who are able and have the necessary facilities and to whom I am ready to supply the preparation and any desired further details of technique which I have employed.

The results shown in my bacteriolytic studies *in vitro*, and the evident harmlessness of infections with tube contents in which the tubercle bacilli were more or less disintegrated, would alone establish the fact that the immunity shown in the vaccinated children is of a high degree without further confirmation by the observations of Pfeiffer's phenomenon and the evident protection of immunized animals in that series, against degrees of infection which are never reached under any kind of exposure of the human subject, the changes found in their autopsies, as also those shown after intratracheal infection being similar but much less in extent which I and others have found when dead tubercle bacilli were used in the experiments. I am, however, not unmindful of the advantages that may develop from further studies of the method or of the preparation to be used, which I am myself continuing and in which I hope others will join me. Such co-operation is especially desirable in regard

to the determination of the uniformity of results, when tested upon a much greater number of children, and in their re-examinations from year to year by which it may eventually be shown whether or not latent tuberculous processes are completely eradicated, if revaccination is necessary and when this should be resorted to.

MODERN MEANS OF INVESTIGATING MENTAL PROCESSES.

By WILLIAM J. M. A. MALONEY, M.D., F.R.S., Edin.

NEW YORK.

PROFESSOR OF NERVOUS DISEASES, FORDHAM UNIVERSITY; ADJUNCT PROFESSOR OF NERVOUS DISEASES, POST-GRADUATE MEDICAL SCHOOL; PHYSICIAN IN CHIEF, NEUROLOGICAL HOSPITAL.

A FEW decades ago people were mad only when they were officially committed to institutions for the insane. A man's sanity depended upon his harmlessness to society, and upon the tolerance of his family. Even in those halcyon days the profane convicted our Blessed Lord of paranoia; labeled Julius Cæsar, St. Paul, Mohammed, and Napoleon as epileptics, and therefore, as degenerates; dissected the mind of saint and of genius, and found it perverted, debased, and disordered; unceremoniously hustled the great over the borderland; but left the mediocre complacent that the mad were not they, but the others. Then the comprehensive derogatory terms, neuropath and psychopath, were invented to vex and disturb this serenity. And now, zealous sleuth-like field workers track stigmata so keenly that degeneracy is found to be nearly as prevalent as original sin.

The cause of all the pother is the absence of a standard of sanity. We have no adequate definition of a normal mind. Amongst individuals vast differences of capacity and temperament exist. To the same mental stimulus no two minds yield identical reactions. To the same mental stimulus even the same person never responds twice in exactly the same way. Every mind varies from hour to hour, and this mental change continues always. When stimulated to greater effort, to loquacity, irritability, restlessness, or excitement, we pass through a maniacal phase of mental activity. When weary or listless, dull or sad, we pass through a period of mental depression. In our daily moods we thus enact mildly the cycle of what, when marked, is called manic-depressive insanity. Or if we are inconstant in energy, or fickle of purpose; if in commerce we sigh for journalism; if medicine beckons us from priesthood; if art lures us from law; if we are unsettled and migratory as regards domicile; if we are pedantic in speech, faddists for food, eccentric in dress, precise in manner, or mystical in religion—if we indulge in a chequered career, or a sentimental journey, or Shakespeare's English, or vegetarianism, or non-fashionable attire, or punctilious politeness, or in Buddhism, we show affinities with dementia præcox. Or, again, if we cherish—as we all do in our secret hearts—the conviction of our direct descent from an Irish king, or a pilgrim father, or a Dutch settler; if we fondly imagine we could bankrupt a Morgan, outbuild a McKim, rule a Roosevelt, outsail a Nelson or outmaneuver a Grant; our folly veers toward paranoia. All the morbid phases which we recognize under the magnification of insanity we can detect, as through a reversed telescope, in states of mind which we accept as normal.

Where does the normal end and the morbid begin? Can we determine where idiosyncrasy merges into madness, where eccentricity becomes irrationality, where individualism lapses into lunacy, where pedantry ripens into dementia, or where fanaticism matures to mania? We may regard the average as the normal mental state but we may not regard those who are either above or below the average as necessarily abnormal. Psychologists are still struggling to fix the standards of the average normal mentality of various ages. When these standards are definitely settled, we shall be able to interpret facts concerning an individual's mental processes only upon a basis of personal opinion, and not of knowledge. We shall be able to compare an aberrant individual with the general average, but we shall not know what was that individual's normal mental state, nor what was the amplitude of his normal intellectual variation. We cannot detect slight abnormal changes: and when severe changes occur, we cannot tell how far removed from former behavior the new morbid attitude is. In cases of pronounced aberration our difficulties are merely scientific. Even a jury suspects the sanity of one who seriously claims identity with Cleopatra, a poached egg, or the Prophet Elijah. But upon less bizarre conditions, a Solomon would often need to sit in judgment. Murder has been urgently committed by those who, suspected and confined in institutions for the insane, had just gained a judgment of sanity and freedom from an expert and prejudiced examiner.

The question of the delimination of sanity from insanity, of competency from incompetency, of responsibility from irresponsibility, daily agitates our courts, bewilders our jurists, confuses medical testimony, and embarrasses the expert alienist, as if he were a professional witness. When we are confronted with an individual can we tell about his mental state anything that is not evident to the layman's common sense? What can we do beyond adducing scraps of evidence of the person's intellectual capacity, and offering a comparison with more or less unverified average standards which are alleged to prevail among the citizens of some European town or country? Can we bring forward nothing positive, nothing conclusive, nothing of absolute value?

We have two methods by which absolute knowledge may be gained. The first, the psychoanalytic method, endeavors to resolve the mental state into its fundamental constituents, to disintegrate the existing mental structure. The necessary data for the analysis are obtained from the dreams, reveries, reminiscences, and thoughts of the investigated person together with his reactions to stimulus words. These data are analyzed, correlated, and synthetized. What is obscure is deemed symbolic of erotic imagery. The prevailing content of the person's mind is thus ascertained.

Then by certain postulated mechanisms such as suppression, repression, and conversion, the origin of the content is explained, and its development outlined. The integral portions of the content are neatly labeled according to accepted nomenclature as complexes, and all is now ready for "sublimation" or the proper affective reaction to heal the mental trauma.

The apostle of this alluring method is Sigmund Freud of Vienna. Breuer came before, but he was merely "as the voice of one crying in the wilderness." There is no Freud but Freud. The faithful follow him as the wise men followed the stars.

Freud has taught us that the key to mental processes lies in the study of the evidences of these processes. He has emphasized these evidences, and has given us a method by which to study them. Psychoanalysis may not be a perfect method, but it is the most perfect that we possess. It is indeed our only method, but when we use it in the ancient, stereotyped, slipshod fashion we fortunately do not call it psychoanalysis. Freud sifts the results of his thorough and scientific analysis, and discovers psychic traumata. Doubtless many psychic traumata have a sexual basis. But that all should so arise; that special mechanisms should be invoked so as to procure an inevitable sexual end product; and that every non-organic morbid mental state should evolve from the sphere only of the sexual instinct and not from the other ruling passions—such as gain, self-preservation, etc.—naturally deter many physicians from closely scrutinizing Freud's tenets. Some among these conservatives realize the value of the method, admire the ingenuity, and half believe the truth of a few of Freud's mechanisms. But the disgusting and wild interpretations (interpretations wanting in reason, in decency, and in purpose), which are trumpeted as Freudian by some of his ignorant, self-styled disciples, dissuade them from further inquiries. Up to the present day, Freud has had practically only one adversary—Isserlin. Most other physicians have been either content to ignore or, while more or less acknowledging the value of Freud's methods, to repudiate his inferences and avoid controversy on subjects which naturally offend their susceptibilities. But there are not a few rabid antagonists whose virulent opposition springs from a veritable Freud *Angst*. Their attitude is a blend of the propriety of a schoolgirl with the scurrility of a blackmailer. A Freudianophobe is typically a proper person whose vocabulary, good breeding, and decorum alone limit the expression of his outraged feelings. To him Freud's cases and their marvelous interpretation demand medieval credulity, Freud's wonderful writings are less convincing, less savory, and less familiar than is the Koran to the average Christian, Freud's philosophy is of the madhouse, Freud's methods are a "prostitution of the confessional," Freud's disciples! the lure of the mad is felt only by their kind; and few but the mad herd with the mad. Psychiatrists are always half suspects, and adherents of Freud are but perverted psychiatrists. Freud's cures! Every quack has his cure! and so forth; righteously.

The medical Pharisee obviously differs not a whit from others of his tribe. Seldom has any theory received more abuse and less criticism. Freud has made a serious scientific endeavor to reveal truth, an endeavor which has elicited, not earnest experimental investigation, but ignorant abuse.

The persistent courage and indefatigable ingenuity of Freud no less than the zeal, number, and talents of his followers, merit that his teachings be judiciously considered. If the foolish and merely prurient of the writings of the ignorant Freudians be set aside, and if Freud's doctrines, as enunciated by himself, and by the many distinguished scientists among his adherents be studied, one tithe of the energy spent now in vituperation would settle forever the value of the whole Freud system.

The other method is largely due to Wundt and Emil Kraepelin who with Sommer, Rivers, Hoche, Aschaffenberg, and others have used it to convert psychology into an exact science. In this method all mental processes are measured just as we measure blood-pressure, or visual acuity, or urea excretion.

An individual's capacity for simple mental operations, such as memorizing, counting, choosing, perceiving, associating, etc., is measured. A large number of tests are made so as to ensure that neither freshness, nor fatigue, nor attention, nor boredom, nor practice, nor noviceship will unduly influence the results, and the average of all phases of mental activity will be obtained.

But intellects react differently to the same disease, and the same disease is a variable quantity. No normal except the concerned individual's normal can be used as a reliable standard. So this method has not yet yielded the hoped-for enlightenment. It is, however, eminently suited for the study of normal subjects in whom artificial alteration of the mental state is about to be produced by means of drugs. The person's normal intellectual capacity is determined; the drug—tea, coffee, bromide, or alcohol—is then given, and the departure from the ascertained normal is measured. The method is often modified and curtailed in practice; only one preliminary testing is then done, the drug is administered immediately, and then the mental capacity tests are repeated. Of course, innocuous fluids of similar taste to the alcohol, and other experimental substances, are occasionally substituted unexpectedly, in order to control the results. The value of this work of the Kraepelin school is evident even to the layman and the jurist. If, under the influence of alcohol, a man commits crime, it is nowadays not enough to say that alcohol rendered the man insane at the moment of the crime; the truth of the defense can be tested by direct experiment; alcohol can be given to the prisoner, and the nature of his reaction ascertained. If he show an insane or abnormal reaction, an extenuating circumstance has been established. Further psychological testing may show that in all probability he drank because he was mad, besides being mad because he was drunk.

But this method of psychiatry has narrow limits. We cannot measure the disease process when we do not know the person's normal. We need a certain mental capacity even for the tests. The measurements afford little more than a standard by which to judge improvement.

Knauer and Maloney have endeavored to carry forward this method of investigation. They estimated each other's mental capacity under normal conditions, and then the average mental capacity during artificially induced hallucinatory and delusional states. Alcohol was not used to induce the hallucination because the intoxication was too transient. Morphine induced too great blunting of consciousness. A relatively unknown alkaloid, mescalin, was employed. The normal mental reactions of K. and M. together with all their possible variations were recorded daily for several weeks. Then K. injected M. and studied him for days till the effect passed off. Then M. injected K. Each made four experiments on the other. Then ten doctors successively volunteered and finally six laymen.

The principal effects were hallucinations of vision. Gorgeously colored scenes of marvelous content, and of curiously associated sequence passed almost without ceasing before the eyes. Pictures, palaces, churches, statues, armies of grotesque dolls, animals, etc., rolled past in an incessant panorama of wonderful color. Usually the critique remained—the subject knew the pictures were not real. But

sometimes, as in one case, so disturbingly real were the delusions that the subject had to be restrained from attempting violence upon the French soldiers whom he saw advancing and threatening. Delusions of hearing were rarer and less pronounced. The most curious delusions were those of muscular sense. Limbs apparently disappeared. The body was felt to be cut into separate halves. The head seemed as if replaced by a ground glass screen. The combination of visual and muscular sense delusions produced strange reactions. One person who felt and saw himself to be in dissociated sections tried to dance himself together again.

Control experiments were made with alcohol.

As the mental capacity was ascertained before, during, and after the poisoning as regards power to perceive, to remember, to associate, to differentiate, to calculate, etc., and as the visual acuity, and the muscular sense, were measured, we were able to reach some valuable conclusions as to the mechanism of delusions.

Just as, in alcoholism, subjects are sad or glad, loquacious or silent, combative or peaceful, so in mescalin poisoning the mental state produced varied in different subjects. In all but one case, however, the poisoning seemed to exert a fundamentally similar action. Afterwards, upon reading accounts of opium, hashish, and other narcoses, I was impressed with the essential similarity which characterizes the mental states in all these poisonings. Every account might have been written by the same man about the same drug. When the superficial differences of temperament and capacity disappear in any man, apparently the residue of his mentality shows a common groundwork, a primitive plan and reaction. The same level of mentality can be induced without poisons in spiritualistic mediums, in the hypnotized, and in the hysterical.

Among the sixteen persons tested insanity was present in the immediate relatives of three. The variations of the reactions of these tainted persons was extraordinarily interesting, and gave rise to the hope that further work in this direction might enable physicians to test the offspring of the neuropathic families and classify them according to their mental stability. We would then have an index to the normal, a guide to the abnormal, and a new test of Mendel's law. There is no one so soundly balanced that adequate mental stress cannot unhinge. There are few so weakly ordered that adequate protection cannot safeguard from passing across the dread borderland. If mental stability could be experimentally ascertained, if we could group people, according as average stress means potential lunacy to them or not, and if we could wisely order the education and environment of the easily deranged a great part of the burden of insanity might be lifted from the drooping shoulders of humanity.

20 East Sixty-ninth Street.

Diabetic Eclampsia.—A. Chauffard and H. Rendu state that the demonstration of this condition requires the following data: (1) Anatomical. The absence at autopsy of either cerebral lesions or of old or recent renal changes upon which one might base the origin of a uremic state. (2) Clinical. The exclusion of any possible therapeutic measure that might have caused convulsions (*i.e.* the injection of large doses of alkalies). (3) Chemical. The absence of nitrogen retention and the presence of acetone bodies in the urine or cerebrospinal fluid. The authors report a case of diabetic convulsions occurring in a man, age forty-nine years, in whom the above conditions were fulfilled.—*Revue de Médecine.*

NASAL OBSTRUCTION AS AN EARLY SYMPTOM OF CARDIORENAL DISEASE.*

By WILFRED M. BARTON, M.D.,

WASHINGTON, D. C.

PROFESSOR OF THERAPEUTICS AND PHARMACOLOGY AND ASSOCIATE PROFESSOR OF INTERNAL MEDICINE IN THE MEDICAL DEPARTMENT OF GEORGETOWN UNIVERSITY.

There is considerable literature upon the etiology and pathology of nasal obstruction, most of which is devoted naturally to a discussion of its commoner causes, chief of which are, as is well known, adenoid vegetation, chronic hypertrophic rhinitis, deflections of the nasal septum, spurs, and nasal polypi.

Of the rarer causes of nasal obstruction, of which instances have been reported, the following may be mentioned: congenital malformation; exaggerated prominence of the anterior arch of the cervical vertebræ; facial hyperostoses; symmetrical hypertrophy of the septum; adhesions following scarlatina and variola; myxedema; the use of the actual cautery, etc. I have, however, never seen any reference to chronic nasal obstruction as an early manifestation of cardiorenal disease, and for this reason I have thought it worth while to report the following case which has recently come under my notice, and to follow the same with a brief commentary upon the possible value of the symptom from a diagnostic standpoint: D. R., white, male, aged 79 years. The patient is a very intelligent man and has been in the government service since the Civil War. Family history negative. Has always been physically robust. He has been troubled with nasal obstruction for over twenty years. The difficulty in breathing through the nose was insidious in its onset, and did not follow any acute inflammatory condition. At first and for a long time it was not complete and he could breathe better at times than at others, and one nostril was usually worse than the other. He had no symptoms of catarrh. His work was all indoors and he was not exposed to draughts or cold. About fourteen years ago he noted some dyspnea if he mounted stairs rapidly.

Seven years ago (1905) the obstruction became so complete at times as to cause him great annoyance and he consulted a rhinologist of this city, who proposed an operation to which he readily consented. The operation consisted in an excision of hypertrophic tissue from both nostrils. Immediately after the excision he was relieved of the symptom of obstruction and remained so for about a year or more, when he noticed it began to return and at the end of two years was as bad as before the operation.

I saw the patient for the first time March 23, 1912. About two weeks previously he had been taken sick with terrific retching and coughing during the night, accompanied by expectoration of large amounts of thin, frothy, mucoid sputum. The retching was accompanied by such intense dyspnea that he was forced to sit up in bed to breathe. On account of the nasal obstruction he was forced to breathe largely through his mouth. He noted that his pulse was accelerated and believes that he had slight fever. The attack was accompanied by great diminution of urinary excretion, the color of which was a dark muddy brown.

He attempted to treat himself, taking at first some dilute sulphuric acid, which seemed to aggravate his condition, following this with some lithium

*Read before the Medical Society of Georgetown University, April 13, 1912.

citrate, which appeared to lighten the color of the urine, but did not increase the quantity. The patient noted concomitantly that his legs, feet, and hands were swollen, and that there was puffiness of the skin of the trunk and face, particularly the left side of the face, upon which he was accustomed to lie. He also noted a disagreeable stinging pain over the region of the heart. All of the symptoms tending to become continuously aggravated, he decided to obtain some assistance.

When I saw the patient for the first time, as above stated, March 23, 1912, I found him sitting up in a chair, with a feeble, rapid, and somewhat arrhythmic pulse (130 to the minute). Rapid dyspneic respiration and general edema. Examination of the heart showed the apex beat in the sixth interspace to the left of the nipple line. The impulse was diffuse. There was considerable tremorous epigastric pulsation. The imprint of the stethoscope left a marked ring depression. There was no audible murmur. The first sound at the apex was muffled and faint. The second sound was audible at the apex and markedly accentuated at the base, particularly in the pulmonic area.

Examination of the chest showed moist râles posteriorly and anteriorly. Percussion negative. The skin was pale and edematous everywhere. The left eye was blind from glaucoma and the vision in the right was much diminished from the same disease. An iridectomy had been performed upon the right eye. Bl. Pr. 1035.

Examination of the urine, which was scanty, showed albumin present in slight amount and casts mostly hyaline or partly granular. Sp. gr. 1015; color dark; sediment slight.

The patient was put to bed upon a milk diet and given infusion of digitalis, 5ii. every four hours. Immediately the symptoms amended. The urinary excretion increased in quantity to 5 or 6 pints in twenty-four hours, going down subsequently to 3 or 4. Albumin and casts diminished. The anasarca rapidly disappeared. The orthopnea vanished, as also the retching, expectoration, and precordial pain. The precordial distress kept up, however, until nitroglycerin was given, after which it immediately disappeared. The pulse frequency diminished about 10 beats per day per minute until it had come down from 130 to about 80.

But the fact which particularly attracted the patient's attention was that twenty-four hours after commencing the digitalis the nasal obstruction was relieved and in forty-eight hours it had completely disappeared. He found, as he expressed it, that he could "sleep like a baby" because he could breathe through his nose. So quiet was his respiration that his wife became alarmed when he slept, thinking he might be dead. A rhinoscopic examination showed both nares patulous with plenty of breathing space. The condition has remained unchanged up to the present time.

Cardiovascular Bright's disease, as we usually see it, has a slow and insidious onset. However long before, indeed years before, the typical symptoms appear, the individual may feel one or more of a series of symptoms, which are in themselves apparently trivial, but which, nevertheless, are extremely important from a diagnostic standpoint.

The late Professor Georges Dieulafoy of Paris laid particular stress upon these early signs and designated them under the generic and expressive title of the "little accidents of Brightism." Such symptoms are headache, pollakiuria, polyuria, slight epistaxis, palpitation, cramps in the legs, breathlessness, lumbar pains, ringing in the ears, diminution of hearing and sight, vertigo, itching, tortuous temporal artery, sensation of dead finger (doigt mort), cryesthesia, digestive disturbances. All of these symptoms, or some of them, ephemeral or tenacious, isolated or associated, may appear and disappear for a long time before edema, albuminuria, and cardiac disturbances occur. During the course of this chronic state, intermediate as it were, between sickness and health, acute episodes occur, during which the appearance of acute asthmatic attacks, severe headache and palpitation, digestive disturbances, vomiting, edema, and albuminuria, put the physician upon the track of a correct diagnosis. Such acute episodes are not in reality the beginning of the disease. They have been preceded by months, or even years, by some at least of the "petits accidents du Brightisme."

I have therefore thought in the light of the facts disclosed by the above observation that nasal obstruction may perhaps be worthy of inclusion among what we should rather term the little incidents rather than accidents of Brightism. In my personal case it preceded any other symptom by several years, and was a rather prominent feature of his case. Inquiry disclosed the fact that he had never had any of the symptoms mentioned above under the expression of Dieulafoy, "les petits accidents du Brightisme" except the "doigt mort," and this sign was late in appearing since he did not feel it until the beginning of the acute onset of his disease.

As to the explanation or pathogeny of such a symptom as nasal obstruction regarded in the light of an early manifestation of cardiorenal disease, the most rational theory would seem to be that it is in some way due to insufficient urinary depuration; in other words, to slight or latent uremia, the so-called petite urémie of the French authors.

Upon this hypothesis it might be assumed that in certain individuals in whom the erectile tissues of the nose are in a state of hypersusceptibility the accumulated products of metabolic disassimilation may give rise to a sufficient degree of irritation to produce swelling of the mucous membrane and consequent obstruction of the nose, either as a result of edema of the parts or as a result of vasomotor disturbances set up.

However this may be, I have taken the liberty of reporting this case as a possible contribution to the semiology of cardiovascular disease.

UNUSUAL CONDITIONS SIMULATING APPENDICITIS.

By H. W. EMSHEIMER, M.D.,

NEW YORK,

CHIEF ADMITTING PHYSICIAN, MOUNT SINAI HOSPITAL.

To the average practitioner the diagnosis of a typical case of appendicitis is a comparatively simple matter; the diagnosis of an atypical case or the exact interpretation of an intra-abdominal condition simulating appendicitis is, however, considerably more difficult. While the usual errors in the differential diagnosis of this condition are matters of common knowledge, it is the unusual errors that afford considerable interest and instruction.

Realizing the value of mistakes in diagnosis, I beg leave to cite several of the rarer ones that have come under my observation in the admitting department of Mount Sinai Hospital in the first four months of the year 1912, as follows:

Case I.—*Tuberculous Peritonitis Simulating Appendicitis.*—S. S., age 19 years, male, Italian. Service of Dr. Brill. For five weeks prior to admission patient had had rather constant, moderate pain in umbilical region, radiating to right iliac fossa, to right hypochondrium and to right nipple, with slight fever, but no nausea or vomiting. On examination there was marked rigidity over entire right side of abdomen and moderate tenderness over McBurney's point; no evidence of free fluid; dullness and diminished breathing from angle of scapula to base of lung on right side. There were no other abnormal physical signs. The temperature was 101°; the pulse somewhat accelerated; the blood count showed 6200 white cells and 63 per cent. polymorphonuclears. The diagnosis of an appendicitis with complicating subphrenic or liver abscess was made; but it was decided to place the patient on the medical service for observation. For several weeks the temperature ranged intermittently between normal and 103°; the abdominal signs persisted. Exploratory laparotomy was performed and the entire peritoneum found studded with tubercles.

In this case the diagnosis of tuberculous peritonitis should have been suspected on account of (1) the five weeks' history of constant pain; (2) the absence of localization of pain during this entire period; (3) the absence of leucocytosis; (4) the nationality of the patient.

Case II.—*Henoch's Purpura with Right Iliac Pain, Melaena, and Purpuric Eruption.*—H. S., age 7 years, male. Service of Dr. Koplik. The mother said that the child had had cramps over entire abdomen, especially on the right side, fever and vomiting for three days before admission. Bowels had been constipated, but had moved with enemata, in each case producing, besides the ordinary fluid stool, a small amount of black material. There was moderate rigidity over the lower half of the abdomen, slight tenderness over McBurney's point, and a temperature of 100°; a complex of physical signs which, with the history, had led to the diagnosis of acute appendicitis, for which the child was sent to the hospital. General examination of the child revealed, besides the local signs above described, several swollen joints, around each of which was a group of numerous large petechiæ. Examination of the urine revealed macroscopic blood. Further questioning of the mother brought out the fact that she had noticed the swollen joints and the eruption one day before the abdominal cramps were complained of.

This was a type of Henoch's purpura or of that condition designated by Osler as "visceral crises of the erythema group." An error in this case was avoidable, and due simply to lack of observation; but it serves, however, to bring out very forcibly two general points in diagnosis that have always been emphasized, namely, the necessity of a thorough detailed history and of an exposure and examination of the entire body of a patient, no matter how positive the local signs of a morbid process may be.

Case III.—*Ruptured Hematocele, Symptoms of Recurrent Appendicitis.*—D. S., age 36, female. Service of Dr. Gerster. Patient had had recurrent pains in the right iliac fossa for several months, most pronounced in the ten days before application for admission, some nausea, and occasional vomiting. The last menstruation was nearly four weeks prior to the time of the application. Physical examination revealed slight tenderness low down in the right iliac fossa. The vaginal examination was negative. The diagnosis of chronic appendicitis was made, and the patient placed on the surgical list to await a vacant bed. About three weeks later patient was brought to the hospital suffering from all the symptoms of internal hemorrhage, viz., pallor, rapid pulse, air hunger, etc. A few days after the original examination three weeks before, she had begun to bleed, and had been bleeding intermittently since. Several hours before her second appearance at the hospital she had experienced sudden pain in the right lower quadrant of the abdomen, with the symptoms above mentioned. Immediate laparotomy revealed a ruptured hematocele with abundance of free fluid in the peritoneal cavity.

It is difficult to say whether or not in this case a correct diagnosis was possible at the time of the original examination, especially in the absence of an ectopic history. On this latter account, however, a pelvic examination was probably done perfunctorily, and it is conceivable that a small hematocele might have escaped our examining fingers. This case is cited merely to demonstrate the necessity of making a very thorough pelvic examination in every patient with supposed appendicitis, irrespective of history.

Case IV.—*Plumbism with Right Abdominal Pain.*—W. M., age 48 years, male. Service of Dr. Meyer. Patient, sent to the hospital as a case of acute appendicitis, gave a two days' history of abdominal cramps, especially on the right side, with slight fever and constipation; no nausea, no vomiting, no chills. On examination the entire abdomen was somewhat rigid and tender, especially over the right rectus muscle; no localized tenderness. The temperature was 100, the pulse normal. There were a few blue spots on the patient's chest, apparently produced by paint. Questioning showed that the patient was a painter, and had had several similar previous attacks. He made a quick recovery without operation. Examination of the blood showed no granular degeneration of the red cells nor was lead found in the urine. There was no leucocytosis.

The case is interesting in that it was absolutely impossible to determine whether the patient was really suffering from a catarrhal appendicitis or whether the symptoms were due entirely to plumbism—with the probabilities, however, in favor of the latter.

Case V.—*Appendicular Abscess Simulating Twisted Ovarian Cyst.*—E. K., female, age 13 years. Service of Dr. Brettauer. For one year patient had complained of colicky pains in the lower abdomen, coming in attacks about once a month. Had never menstruated. The last attack, the most severe of any, began five days before admission with severe pain in the lower half of the abdomen, especially on the right side, followed in a few hours by nausea, vomiting, and increased frequency of urination. The pain continued with somewhat diminished intensity to the time of admission. On examination there was slight rigidity and tenderness in the right iliac fossa, particularly just above Poupart's ligament. Rectal examination gave the sensation of a tender, cystic, slightly irregular mass about the size of a plum high up on the right side, and an infantile uterus. The temperature was 100, the pulse 100. An attempt to obtain an ovarian or appendicular Head zone was unsatisfactory. The

diagnosis of twisted ovarian cyst was made. Laparotomy revealed a gangrenous appendix with a pelvic abscess.

Taking into account all the evidence at hand, this error in diagnosis was excusable; in fact, under similar circumstances, the same diagnosis would almost always be made. The only clues that would have been of value in making a proper diagnosis were the slight irregularity of the rectal mass, which pointed toward an acute inflammatory process; and the occurrence of the vomiting several hours after the onset of the pain as distinguished from the immediate vomiting, characteristic of any twist of a pedicle or other structure.

Case VI.—*Septic Non-occluding Thrombus of the Sigmoid Sinus; Streptococcæmia, Appendicectomy, Mastoid Operation, Death.*—F. R., age 17, female. Services of Drs. Lilienthal and Whiting. Eight days before admission there had been general abdominal pain, fever, and vomiting, the pain later having become somewhat localized to the right side. The patient was sent in as an emergency case on account of her supposed abdominal condition. The fact that she had had a discharge from her left ear with perforation of the drum and with fever but no chills was ascertained later. On examination of the abdomen there was rigidity and pain in the right iliac region, where a mass could be felt. There was also a mass in the left iliac region. The white blood count was 19,000, with 82 per cent. polymorphonuclears and with 18 per cent. lymphocytes. The case was recognized to be a doubtful one, but it was thought that a small exploratory opening with appendicectomy could do no harm. The appendix was therefore removed through the usual 2½-inch rectus incision, and at the same time a careful examination of the abdominal and pelvic viscera was made. The wound was closed without drainage. Next day the temperature shot up to 106°. A blood culture was found to be positive for streptococci. Dr. Whiting having examined the left ear decided upon operation, which was accordingly performed in the usual manner. The lateral sinus was exposed and opened and no occluding thrombus but merely a mural exudate was found. The patient died of acute purulent general peritonitis, as disclosed at autopsy six days after her admission to the hospital. Very possibly the general septic peritonitis was determined by the laparotomy in a patient with a positive blood culture. While it is probable that the case would in any event have terminated fatally, it is most distressing to think that an unnecessary laparotomy was performed, and that the abdominal symptoms had so far predominated in the case as to render it possible to overlook the true focus of infection.

The entire account of this case was given to me by Dr. Howard Lilienthal, who has kindly permitted me to make use of it in this paper instead of reporting it himself, as was his original intention.

Case VII.—*Retroperitoneal Lymphosarcoma, Simulating Acute Appendicitis.*—I. R., age 30 years, male. Service of Dr. Lilienthal. For six months patient had complained of burning pain in epigastrium, and nausea. For three days had pain in both iliac fossæ, occasional vomiting, and moderate fever. On examination patient had moderate tenderness and rigidity in right iliac fossa, not particularly over McBurney's point. Temperature was 102°, pulse 110. At operation, which was done immediately with the idea that a gangrenous appendix would be found, the latter was seen to be absolutely normal. With the exception of a small soft movable mass in the mesentery, thought to be inflammatory in nature, there were no signs of any intra-abdominal abnormality. After operation patient began to have peculiarly remittent and intermittent fever, for which no cause could be ascertained. Emaciation became marked, and patient seemed to be losing ground rapidly. The abdominal pain continued with somewhat increasing intensity, and so about one month after the original operation a second exploratory laparotomy was done, resulting in the discovery of a large inoperable retroperitoneal growth, probably sarcoma.

This is one of those cases where, unfortunately, our methods of clinical examination are not sufficient to permit of a correct diagnosis, and where exploratory laparotomy is absolutely necessary to clear up the situation.

Case VIII.—*Appendicular Abscess, Endocarditis, Suspected Mesenteric Thrombosis.*—R. W., age 19 years, female. Service of Dr. Rudisch. Patient gave a distinct past history of rheumatism and endocarditis. One year before had general abdominal and right iliac cramps lasting for three days. Eleven days previous to admission complained of fever and symptoms of beginning cardiac decompensation. Four days before admission began to have general abdominal pains, very severe in character, especially in the right iliac fossa; vomited several times at onset. On examination there were signs of slightly decompensated mitral and aortic disease; tenderness and rigidity in both iliac fossæ; a temperature of 101.6° and a pulse of 88. By rectum there was a distinct tender bulging mass high up on the right side. The blood count showed 22,000 white cells, 80 per cent. polymorphonuclears. Patient was sent to the hospital with the diagnosis of a suspected mesenteric thrombosis, but in the absence of bloody stools, and the presence of a high blood count and a rectal mass, the diagnosis of appendicular abscess was made, and proved correct at operation.

Here it was impossible to explain the physical signs according to the usual rule of supposing a single etiological factor, inasmuch as there were unmistakable evidences of a second, entirely different process at work.

Case IX.—*Tuberculous Peritonitis, Sudden Onset and All Signs of Acute Appendicitis.*—M. C., age 25, Irish, female. Service of Dr. Lilienthal. For six months patient had been subject to moderate, rather constant abdominal pains. Twenty-four hours before admission had sudden pain in right iliac fossa, with fever, nausea, and vomiting. There was rigidity in right lower quadrant of abdomen, with marked tenderness over McBurney's point. Temperature, pulse, local signs, and general appearance of the patient pointed unmistakably to the diagnosis of gangrenous appendicitis. At operation the entire parietal and visceral peritoneum, especially right tube and appendix, were covered with miliary tubercles.

Here again a proper diagnosis was impossible. The above clinical picture, however, with acute onset and signs of a general peritonitis is not so very rare in tuberculous peritonitis. It is instructive to note that in the two cases of tuberculous peritonitis mentioned in this paper, and selected at random, the patients belonged to the nationalities reputed to be among the most susceptible to tuberculosis—Italian and Irish. This is a rather significant fact and should put us on our guard when-

ever we are dealing with indefinite abdominal signs in patients of the nationalities above stated.

Case X.—*Intra-abdominal Actinomycosis, Seven Months After Appendix Operation.*—R. B., female, age 17 years. Service of Dr. Gerster. Seven months before admission patient had an operation performed for acute appendicitis. With the exception of occasional pain in the right lower abdomen, was well since operation up to two weeks before admission, at which time she began to complain of pain in the right hip and right iliac fossa, especially on walking, so severe that for several days patient had been confined to bed. Moderate fever; no chills or vomiting. Physical examination showed a large, hard, tender mass the size of a grapefruit in the right iliac fossa, apparently extending into the pelvis. Patient held thigh flexed on hip. The diagnosis of postoperative intra-abdominal abscess was made in the admitting room. Laparotomy revealed a huge abscess, a culture of which contained actinomyces.

Although rare, actinomycosis should be considered in all cases of chronic abscess or chronic inflammation; but a positive diagnosis, especially if a causal factor cannot be determined, is extremely difficult.

Case XI.—*Multiple Liver Abscesses Following Undiagnosed Appendicitis.*—L. K., age 28, male. Services of Drs. Meyer and Lilienthal. Patient had had ten similar previous attacks in the last thirteen years. For two weeks had had abdominal cramps, especially in the epigastrium, with occasional vomiting. There was rigidity of the upper rectus muscle, more on the right side, marked right subcostal tenderness, a high blood count, and fever. Patient had repeated chills and an intermittent septic temperature. At operation the appendix was found much inflamed and enlarged. A portion of mesentery and of liver were excised for macroscopical examination. The pathologist, Dr. Mandlebaum reported diffuse acute inflammation of appendix and mesentery, with purulent thrombosis of mesenteric vessels and multiple purulent foci in liver.

The last case has been cited to illustrate the disastrous consequences of undiagnosed appendicitis, and the necessity for prompt surgical intervention in any case where appendicitis is suspected.

Case XII.—*Lobar Pneumonia, with Referred Appendicular Pain.*—R. G., age 13, female. Services of Dr. Koplik and Dr. Manges. For five years patient had had abdominal cramps and nausea. For three days pain had been most severe in right iliac fossa. Vomited twice at onset. No other symptoms. Patient was sent to the hospital with the diagnosis of appendicitis. There was slight tenderness in the right iliac region; otherwise the abdominal examination was negative. Examination of the chest showed a small area of bronchial breathing and râles at left base. Temperature 100.6°, respirations 26. No operation was performed. In twenty-four hours the pulmonary signs were unmistakable, and in a brief period the pneumonia was in "full bloom."

These twelve cases serve to illustrate the truth of the assertion that the diagnosis of an atypical case of appendicitis, or of an intra-abdominal condition simulating appendicitis, is not easy, and emphasize very forcibly the necessity in all cases of doubtful diagnosis of a most careful history and a most painstaking physical examination. It is by these means only that we can hope to avoid disagreeable surprises and to progress in the clinical diagnosis of intra-abdominal conditions.

I am indebted to the superintendent and attending physicians and surgeons of Mount Sinai Hospital for the use of the various hospital records necessary for the preparation of this paper, and to Dr. Harold Neuhof for several valuable suggestions.

THE TREATMENT OF PUERPERAL ECLAMPSIA.*

By ROBERT E. COUGHLIN, M.D.,

BROOKLYN, N. Y.,

CONSULTING PHYSICIAN TO THE BAY RIDGE SANITARIUM; ASSISTANT PHYSICIAN TO THE NORWEGIAN HOSPITAL; VISITING PHYSICIAN TO THE BAY RIDGE HOSPITAL AND DISPENSARY.

Bar has made a careful study of the causes of puerperal eclampsia and has arrived at the conclusion that the cause is a complex toxemia. The nature of the primary poisons is unknown. Their action causes secondary poisoning of the kidneys and liver, and the poisons thus produced add to those already acting and cause the preeclamptic state. Hypertension, although the immediate cause of the attacks, is not the primary causative factor. Thus there is a complex condition of toxemia of the blood serum, acting on the liver, kidneys and brain, resulting in the phenomenon which is called puerperal eclampsia.

Probably no originality can be claimed for the statements regarding the treatment of convulsions in pregnancy as outlined in this paper.

In 1889 Love published an article in which he claimed that Dr. Newton twenty-five years before managed cases of puerperal eclampsia by administering large doses of veratrum viride. Fordyce Barker had prior to this time written about the drug in peritonitis and phlebitis. Later than 1889 obstetricians like Barrows, Edgar, Chandler, Willis, Grindell, and others have testified to the efficiency and efficacy of veratrum viride in eclampsia. However, in these times of therapeutic nihilists, doubters, and worldly-wise men it may not be amiss to state the facts to date concerning one very useful drug in our materia medica. On this account it does not appear to be necessary to offer an apology for going over old ground which has already been well covered in the past.

The treatment of puerperal eclampsia in private practice and at the Norwegian Hospital as advocated by the writer resolves itself into conservative means at the outset with heroic methods at a later period. As soon as a patient is admitted in convulsions with high blood-pressure and rapid pulse she is put on the tincture of veratrum viride in fifteen minim doses every fifteen minutes hypodermatically until the pulse shows signs of slowing up perceptibly or the convulsions have discontinued. As a rule, when the pulse has been brought down near the normal rate the convulsions are controlled. At this time observation will show that the pulse has not only become slower, but softer in character. Along with this condition of affairs the blood-pressure has been markedly reduced. At this time the drug may either be discontinued absolutely or given in much smaller doses at infrequent intervals, viz., five minims every four hours. A certain time is allowed to go on (from four to six hours) from the time of the last convulsive seizure when steps are taken to bring on labor. This delay is considered

*Read before the Long Island Medical Society, Dec. 5, 1911.

wise as veratrum viride combined with emptying of the uterus may together produce fatal shock. Rapid emptying of the uterus in eclampsia frequently causes a decrease in blood-pressure amounting to 100 mm. Hg, and causes collapse or shock. Veratrum viride given to its full physiological effect may cause a drop of 145 mm. of Hg and produce shock. It seems better for these reasons to allow the system to recover fairly well from the shock of the drug before rapid emptying of the uterus is employed.

No matter what the period of uterogestation, the bringing about of labor is indicated, the idea always being kept in mind that the longer the patient is left in a condition of toxemia of the convulsive type tendency, the slighter are her chances for life with each convulsion. Likewise the child, for the more convulsions the greater are the risks to the life of the fetus. Labor is induced by means of the catheter and forcible dilatation. Once there is full dilatation the delivery is accomplished as rapidly as possible, instruments being used if the progress shows a tendency to be slow.

The anesthetic used is either chloroform or ether preceded by a hypodermic injection of morphine, one-eighth of a grain. Ether does not cause as much kidney congestion as chloroform and appears to be the safer anesthetic, though there is more trouble in getting a patient under ether than there is in chloroform anesthesia.

To relieve the condition of the kidney diuretin and potassium citrate are the diuretics employed. Aconite is also given at times for its diuretic action. Ten-gallon rectal irrigations of normal saline solution are also employed along with a retaining rectal injection of about four ounces. Cathartics are given and the patient is kept in a hot pack. For failing heart conditions consequent upon the toxemia we have to fall back on strychnine, tincture of strophanthus and whiskey. For extreme nervousness bromide of sodium is given in almost all cases. The diet consists of milk diluted in different forms, cereals, gruels, toast, oatmeal jelly, rice, and prepared buttermilk.

In desperate cases or when there is pulmonary edema atropine sulphate in one seventy-fifth grain doses is administered hypodermatically. Case reports of the following successive cases will illustrate the treatment which is generally successful.

Case I.—Mrs. Emma R., age 41, housewife, U. S., primipara; admitted April 14, 1911. Discharged May 5, 1911. A stout, well-nourished woman. Had been married six years. Never had a miscarriage or been pregnant up to the present pregnancy. Last menstruation June 26, 1910. Examination showed that the external os was dilated about three fingers and fairly soft. Buttock and anus of child felt, also sacrum and coccyx in the L.S.A. position.

The history of the case showed that she had been in labor for a period of twelve hours and had had two severe convulsive seizures. Pulse ranged from 110 to 120. Blood pressure 235 mm. of mercury. Pulse very hard and wiry to the touch. Treatment: High retaining injection of normal saline solution four ounces in quantity. Hot packs were administered every two hours. Tincture of veratrum viride given by mouth every fifteen minutes till she had in all 675 minims, covering a period of twenty-three hours. By this time the blood-pressure had been reduced, the pulse slowed down to 68 and was fairly soft. Three hours later the os was forcibly dilated and a dead fetus was delivered with the breech presenting. After the birth of the child the veratrum was continued in the same manner till 75 more minims were administered, making in all 750 minims in a little over twenty-four hours. The remainder of the treatment was expectant and the patient made an uneventful recovery.

Case II.—Mrs. Ada O., age 35 years, U. S.; admitted to hospital October 24, 1911. Discharged November 16, 1911. Was admitted in an unconscious condition. Objective symptoms: stertorous breathing, frothing from mouth, cold, clammy skin, moderately dilated pupils, extreme restlessness, pulse 124 full and bounding, cyanosis present, some dilatation of cervix, and an excessive amount of albumin in the urine.

Previous history: Has had three children, the present being her fourth pregnancy. During the first pregnancy she had albuminuria, but no eclamptic seizures. Family history was negative, except that her father died of apoplexy in his forty-second year and one sister has chronic kidney disease.

History of present illness: Two months ago while in the country she was seized with a violent headache with vomiting. A country physician was called in and she was advised by him to put herself in the hands of her physician in the city as soon as possible. He examined the urine, but did not tell her the result of the analysis. She returned to Brooklyn, but failed to follow instructions. While on the train to her home she had some dizziness and vomiting, but this had always been her habit when traveling. After returning home she became better and none of her friends apparently realized the seriousness of her condition till she was suddenly seized with a convulsion while asleep in bed.

Examination on admission: Heart impulse of medium force, pulse tension high; no adventitious sounds present. Urine passed involuntarily.

Treatment: Tincture of veratrum viride in fifteen minim doses hypodermatically every fifteen minutes. In twelve hours seven drams had been administered, when all convulsions ceased. Hot packs were also used and four-ounce rectal saline injections were administered every four hours. Tincture of strophanthus and caffeine were given after the veratrum was discontinued because of the weak heart action and condition of the pulse. In all there had been thirty convulsions. Eighteen hours after the patient's admission a catheter was inserted into the cervix and uterus. Five hours subsequently forcible dilatation was instituted and a live child was born in half an hour by the aid of forceps.

Nothing eventful occurred in the subsequent recovery of the patient, who left the hospital in three weeks, except that the uranalysis showed a trace of albumin with a specific gravity of 1010.

Case III.—Mrs. W., age 38, housewife. Was admitted to hospital November 23, 1911. Family history negative. Multipara, the present being her fourth pregnancy. No history of previous kidney disease could be obtained. Patient gave birth to twins eight hours prior to admission to hospital. Seven hours after delivery convulsions set in, five or six occurring within an hour. After admission the convulsive seizures were almost continuous.

Condition on admission: Coma present, though she could swallow fluids; both eyeballs rotated downward, pupils equal and reacted to light. Pulse from 110 to 120, temp. 99.5°, tension and blood-pressure very high.

Uranalysis: Color, not clear; reaction, acid; albumin, a very large amount; no sugar; flocculent deposit; few leucocytes; granular and hyaline casts.

Treatment.—She was put on hot packs every four hours and tincture of veratrum viride given by mouth, fifteen minims every fifteen minutes. Rectal injection of normal saline solution four ounces, to be retained, every four hours. During a period of ten hours she was given 625 minims of the tincture of veratrum viride when it was discontinued, the pulse being around 70 per minute by this time soft in character. Stimulants were now given. Caffeine two grains, strychnine sulphate one sixtieth grain and tincture of strophanthus three minims every four hours. For over twenty-four hours her condition, though she was comatose, appeared to be good. Later while in a hot pack the pulse suddenly went up to 120 and her heart stopped beating. Her respirations continued for a time, but she could not be resusitated. Everything pointed to the severe toxemia of the disease having caused death, for she had not received any veratrum viride in over twenty-four hours. This case illustrates very well how uncertain and how serious eclampsia really is, even after the uterus has been emptied and the convulsions have been controlled.

Conclusions.—Veratrum viride is a very important drug in the treatment of convulsions due to the toxemia of pregnancy. It acts best when given in large doses at frequent intervals. It may be administered either by hypodermic injection or by the mouth, but the former method is preferable because of a better and more prompt action.

Veratrum viride lowers the pulse rate by direct action on the muscle and by stimulating the inhibitory nerves of the heart. It reduces spinal action, also arterial action, and is said by Wood to be the safest of all cardiac depressants. Instances are on record in which a dram of the fluid extract has been taken without fatal results, also a tumblerful of the tincture. Either the tincture or the fluid extract may be administered, the latter being twice the strength of the former.

It should always be given till its physiological action is produced, viz., slowing of the pulse. When this has been accomplished the convulsions will have ceased.

When the convulsions are under control and there is a little improvement in the general circulatory system, as will occur when the convulsions have ceased, a rapid delivery is the next step. After the uterus has been emptied and the convulsions are in abeyance we should expect improvement in metabolism, in the circulation by a reduction of the blood-pressure, in the condition of the urine, in the temperature, pulse, respiration, saving the heart and the cardiac muscle from unnecessary strain, and generally increased elimination.

428 Forty-seventh Street

REMOVAL OF ADENOIDS AS A PREVENTIVE MEASURE AFTER EXPOSURE TO MEASLES.

By JOSEPH B. GREENE, M.D.,
ASHEVILLE, N. C.

Preventive medicine is now the order of the day, and in no branch of the science of medicine is this more important than in otology. We are every day confronted with adhesive processes resulting from an inflammatory condition of the middle ear which baffles our efforts to restore the hearing to anything approaching normal. It is certainly easier to prevent deafness than to cure it.

Inflammatory processes of the middle ear which result in suppuration are not without danger to life, particularly so when extension takes place to adjacent parts, as the mastoid cells, the lateral sinus, or brain. According to Borden in the *Boston Medical and Surgical Journal*, July 15, 1909, middle ear involvement is more frequent in measles than any other acute infectious disease, though some authorities place scarlet fever first and measles second. Appreciating the great danger of a suppurative ear complicating measles in the presence of a large adenoid is my reason for reporting the following case:

Patient R. S., age 5, was referred to me on March 1, 1912, for defective hearing—no fever—no earache. There was a history of symptoms of the presence of troublesome adenoids, such as mouth-breathing, earache, and frequent colds in the head. Examination confirmed the presence of large adenoids. The ear-drums were red and slightly swollen. Hearing was very defective as evidenced from conversation. No accurate hearing tests could be made on account of the age of the child. Treatment by gentle inflation and mild applications to the nose and nasopharynx had little effect on the hearing. On March 11 the patient was exposed to measles from sleeping with his little sister, who suddenly broke out with a rash and the usual symptoms of this disease. Dreading the effect of an attack of measles on my little patient's already subacutely inflamed ears (in the presence of large adenoids), I advised the removal of the latter. I felt reasonably sure that we had seven or eight days for the nasopharynx to heal before the patient was likely to come down with measles. In this estimate of time we were not disappointed, for eight days after operation the catarrhal symptoms of measles appeared. The ear condition was not made worse by the disease, and at no time did he complain of earache. As soon as the symptoms of measles had subsided the condition of the ears as evidenced by the appearance of the drum membranes and the hearing began to improve rapidly. The hearing continued to improve till it was apparently normal.

While not advising adenoid removal as routine after all cases of exposure to measles, it does seem to me that there are cases where surgical intervention becomes conservative treatment.

Multiple Arthritis of Doubtful Origin.—D. C. L. Fitzwilliams reports the case of a girl, aged fifteen, with the following history. About eighteen months ago the tarsal joints became painful and swollen, first the right and then the left. About four months later the wrists became affected, the left first. The condition has steadily become worse, the pain has remained, but varies from time to time, while the movements of the affected joints have become very limited. Present condition: The patient limps on walking, owing to the pain in the tarsal joints of the right foot; the ankle joints are free. She has pains at night both in the foot and in the wrists. Both wrists are flexed, the left one having no movement at all, while the right one has very slight movement. The synovial membrane of the joints is thickened and the interphalangeal joints of the hands are distended with fluid; there has been no abscess formation. The heart, lungs, liver, and spleen are normal, and there are no enlarged glands. No history or evidence of syphilis. The treatment hitherto has been carried out apparently under the impression that the condition is tuberculous, for the wrists have been in plaster of Paris for three months. *X*-rays show very little bony change in the wrists. The condition is thought to be due to a chronic infection and not to tubercle.—*Proceedings of the Royal Society of Medicine.*

MEDICAL RECORD.

A Weekly Journal of Medicine and Surgery.

THOMAS L. STEDMAN, A.M., M.D., EDITOR.

PUBLISHERS

WM. WOOD & CO., 51 FIFTH AVENUE.

See fourth page following reading matter for Rates of Subscription and Information for Contributors and Subscribers.

New York, August 31, 1912.

THE PERSISTENCE OF CERTAIN RACIAL CHARACTERISTICS.

UNDER the above caption, Pearce Kintzing, in our issue of August 10, 1912, discusses in detail the various signs by which one may be able to recognize the presence of negro blood in a person whose parentage is of doubtful origin. He draws attention to the peculiar distribution of pigment around the genitalia, the nape of the neck, and all other parts of the body where even the white man of pure blood has an excess of color. He likewise discusses at great length the peculiarity of the finger nails of persons who may show no other signs of negro blood. This consists essentially of the absence of "half moons," which is generally characteristic of persons whose blood is attenuated by a negro strain. After much careful study of the subject and long actual observation, the author comes to the conclusion that there is no positive sign whereby a very much diluted strain of negro blood may be discovered. This is contrary to the prevalent idea that the offspring of even the most attenuated mulatto and a pure white always has some trait which reveals itself to the expert. The conclusions of this clinical observer are, however, in exact keeping with the most advanced knowledge on the subject of heredity as given to us by students of Mendelism and Eugenics.

Thus Davenport, in his work, "Heredity in Relation to Eugenics," states that the pigmentation of the skin of the child is never, or, at least, very rarely darker than that of the darker parent. In the same manner Karl Pearson, a number of years ago, caused an investigation to be made into the skin coloor of the mulattoes and sambos of the British West Indies. His investigations were published under the auspices of the school of biometricians of which Sir Francis Galton was the illustrious founder, and they tended to discredit the superstition that there was always the danger of a "throw back" to a pure black type whenever either parent had the slightest trace of negro blood in his veins. In fact, Pearson was unable to find a single well authenticated instance of this kind, and, therefore, came to the conclusion that when such a thing occurred it was due to the fact that the child's parentage had in reality not been that which was commonly supposed. Every investigation goes to show that skin coloration, and indeed all the negro physical characteristics, will be eliminated by frequent crossings with white stock, and give place in time to those of the white race.

In this connection it is interesting to note that the old laws and customs of the French West Indies anticipated the scientific conclusions of the latter day observers and students of heredity. According to Kitty Montrose, in the *New York Times*, June 3, 1910, there was an exact legal definition of white and colored. No white could be held as a slave and the exact proportion of negro blood was defined which served to make the man fall into the negro classification. The law was as follows:

White and negro, mulatto, ½ black.
White and mulatto, quadroon, ¼ black.
White and quadroon, octoroon, ⅛ black.
White and octoroon, quinteroon, 1/16 black.
White and quinteroon, griffada, 1/32 black.
White and griffada, mustafee, 1/64 black.
White and mustafee, mustee, 1/128 black.
White and mustee, sang d'or, 1/256 black.
White and sang d'or, white again, not a negro, and could not be held as a slave.

We call attention to this remarkable coincidence of legal conclusions in the West Indies a hundred years ago, with those of the modern students of heredity, because it is interesting to note the difference between popular belief on this subject in that region and in the United States. Here the probability of a "throw back" has always been used as a strong argument to deter mixed marriages of any degree. There the improbability of such an occurrence was not only popularly but legally recognized. Perhaps the explanation of such different beliefs is to be found in the great abhorrence with which such unions have been regarded in this country. It is entirely conceivable that the strong inborn repugnance of the Anglo-Saxon and Teutonic settlers of this country to the race as contrasted to the easier way of looking at the subject, maintained by the Latin races of the West Indies, would suffice to make the former prejudiced observers. Another explanation may be that the Puritan hypocrisy of our own people has made them refuse to admit an illegal and or more or less disgraceful parentage for the child which was darker than it should by rights have been. At any rate the whole subject is interesting to the student of human nataure in its moral and social attributes as well as to the student of heredity and eugenics.

"DIATHESIS" IN GERMAN MEDICINE.

THE lukewarm attitude, often carried to open hostility, of the German medical savants of a generation ago towards the diathetic interpretation of the phenomena of disease by French and English practitioners is probably not fully realized to-day. With the advent of the germ theory the diathesis idea was temporarily side-tracked, so that the present generation has grown up largely in ignorance of the old controversies. It knows that there are certain predispositions which make tissues a superior culture medium for germs of various kinds. It also knows that certain anomalies of metabolisms are regarded

as actual diseases and not simply as conditions which invite disease. Hence the conceptions of diathesis has become in part superseded through the natural march of scientific discoveries.

It therefore appears most singular that while other countries, including France and Great Britain, have been writing less and less of diathesis, Germany should be the one to rehabilitate the idea. The pathologists of Germany and Austria never denied the existence of a predisposition to constitutional diseases, but when it came to giving all the ear marks of several diatheses, as well as the method of their operation, such doctrine was placed perilously near pseudo science—near phrenology, for example.

At a recent session of the Aerztlicher Verein in Nürnberg (*Muenchener medizinische Wochenschrift*, July 30) Kaspar traces the history of the new diathetic teaching in Germany. It appears that Comby, the French pediatrist, in 1900, postulated the existence of a single infantile diathesis which predisposed to the greater portion of chronic infantile morbidity. A single diathesis is evidently a great improvement over half a dozen with hair-splitting, imaginary distinctions and the connection of this diathesis with tender years made it possible to trace its presence during the maturity and old age of the subject. But out of Comby's one diathesis the German pediatrists have made at least two, viz., the spasmophilic and exudative, which, however, may readily coexist in one individual. The exudative diathesis of Czerny has made good in medicine, Kaspar states. He has shown that with the most faithful care certain children develop "milk crust" on the scalp and face (the adjective "exudative" is based on this phenomenon) and that a little later the same children have their anginas and false croups, enlarged tonsils and adenoids. These children are not rendered secure by breast milk and go from one ailment to another. They make up much of the pedatrophy class. They bear badly measles and vaccination. Scrofula is the exudative diathesis plus the action of the tubercle bacillus. As to the nature of this condition Czerny believes it due to defective metabolism of fat. The way to proceed against it is summed up in two words—proper diet. These children do best by cutting out fat as far as possible and making free use of carbohydrates. The diet is almost vegetarian. Even milk and eggs are forbidden. Upon this diet the improvement is striking. The resistance to disease and general appearance promptly improve. While the condition described is not new the treatment is radically novel.

THE SYNDROME OF ACUTE DEHYDRATION IN DIABETIC COMA.

A SPECIAL syndrome whose elements have been separately recognized as part of the clinical picture of diabetic coma, but whose causation is given a new interpretation, is described by A. Chauffard and H. Rendu (*Revue de Médecine*, June 10, 1912). An acute dehydration of the organism is regarded by these observers as largely responsible for the production of this syndrome. The most striking of its manifestations is the facies of the patient; the cheeks are hollow, the eyes are sunken, and the lines of the features are drawn. This appearance is suggestive of the characteristic facies of cholera, but differs from the latter in the presence of the rosy or cyanotic coloration of the skin which is not present in cholera except during the stage of congestive reaction. There is also noted as part of the dehydration syndrome of diabetic coma a typical condition of the integument, which is flaccid, hypotonic, and devoid of suppleness or elasticity, and which by the appearance of covering the body too loosely has received the name of "batrachian skin." Another characteristic of this condition is the arterial hypotension. In addition there is the ocular hypotonia described in 1904 by Krause: the eyeball appears withered as if half emptied of its contents. Examination of the blood shows increased viscosity, and urinary analysis reveals a nitrogen retention.

In interpreting the mode of causation of this syndrome the authors believe that the following sequence occurs: The diabetic becomes first comatose, and dehydration follows as a secondary manifestation. This results partly from the vomiting, the diarrhea, and the polyuria. These are, however, only contingent factors. The fundamental cause of dehydration is the striking symptom known as Kussmaul's respiration. This form of breathing, which is in reality a polypnea rather than a dyspnea, is an habitual accompaniment of diabetic coma. The patient breathes at the rate of twenty-five to forty times per minute for a period of from twenty-four to forty-eight hours preceding death. The amplitude of the respirations is no less than normal, and the pulmonary ventilation is consequently more active than in the healthy subject. This causes by way of the lungs an enormous increase in the loss of water to the organism, so that of all forms of coma, that occurring in diabetes is the most dehydrating.

As a practical conclusion based upon their observations the authors suggest a new principle in the treatment of diabetic coma. This treatment should be directed against the dehydration and the increased viscosity of the blood. Instead of the administration of concentrated solutions of alkalies the authors advocate the employment of isotonic solutions titrated to the extent of fifteen to twenty grams per liter. By means of an intravenous infusion of one liter of such a solution one may counteract the dehydration of the tissues. In this manner both the mechanical and the chemical indications in diabetic coma are successfully met.

THE ACUTE SHEDDING OF HAIR IN CIRCULATORY DISORDERS.

THE cause for rapid loss of hair of the scalp is to a very large extent unknown. The phenomenon is in most instances connected with a serious condition of health, but as yet no one has been able to point out with certitude what particular part of the system is in fault. In diabetes hair is apt to fall out and in cancer this is commonly the case. Of course in a large number of cases of premature baldness, some local affection such as sebor-

rhea is the cause, but where local agencies are absent, the matter must be explained in some other way. David Walsh discussed this question in the *Medical Press and Circular*, July 24, 1912. He holds that constipation exerts a powerful predisposing or exciting element in the shedding of hair. But if so, the toxic theory does not cover the whole ground; and Walsh thinks that more power is attributed to the positive mischief caused by the blood than it is entitled to. May not the damaged nutrition of the hair follicle and the hair bulb result from a lessened or interrupted local circulation? According to Walsh the viscous circle which is set up in the acute alopecia is somewhat as follows: The bowel toxins enter into the general circulation, where they give rise to anemia and eventually to the feeble circulation associated with chronic constipation, probably arising ultimately from weakening of the heart muscle. The result is shown in the peripheral circulation and naturally enough in the hair follicles and bulbs, which represent some of the finest, if not the finest capillary endings. The sudden stoppage of nutrition is quickly registered in the dry and shrunken hair bulb, which is ready to fall out from the follicle with little or no provocation. Or if it be retained for a time by reason of its mechanical interlocking in the upper part of the hair follicle, the failure of nutrition is shown by the changes in the hair shaft which becomes dry, brittle, and often split at the ends.

The chain of events is probably as follows: The bowel produces the toxin, which by reason of stagnation of the bowel contents, is absorbed into the blood stream; the heart muscle undergoes more or less degeneration, following upon the secondary anemia and direct and indirect toxic action; the surface circulation suffers, and with it the vascular supply to the hair follicles. The hairs shrivel and die in consequence. It is a fact of common observation that many of the acute fevers are attended or followed by a rapid and extensive loss of hair. In this sequence of events, in Walsh's opinion, the primary organ in fault is most probably the heart, the muscle of which has been weakened by the high temperature and by toxic fever products.

The United States Public Health Service.

In former issues we several times called attention to the so-called Personnel Bill designed to make the salaries of the officers of the Public Health and Marine Hospital Service equal to those of the corresponding grades of the army and navy medical services, and urged its passage by Congress. The original Personnel Bill had passed the Senate and with a favorable report from the Committee on Interstate and Foreign Commerce was awaiting action by the House. On August 13, 1912, the bill was taken up by the House and amended by substituting for the original a bill offered by Mr. Mann. The amended bill passed the House and Senate on that date and was approved by the President on August 14. The bill as passed contained the essential features of the original with certain additions. The name of the service is changed from the Public Health and Marine-Hospital Service to the Public Health Service, a title at once shorter and more usable. The salaries of the officers are made equal to those of the medical corps of the Army and Navy. Provision is made for the service to investigate the "diseases of man" and the conditions influencing their propagation and spread. This is to include sanitation and sewage, as well as the pollution, both direct and indirect, of the navigable streams and lakes of the United States. It is also provided that from time to time the Public Health Service may issue publications containing information for the use of the public. Congress has done well to pass this legislation, not only as a matter of justice to the officers of the Public Health Service and recognition of the splendid work of the Service in the past, but also as a necessary step toward insuring the continuance of this efficiency. Under the admirable leadership of Surgeon-General Blue it is not too little to expect a great advance in the value of its Public Health Service to the nation, in preventing and controlling disease, especially epidemic disease, among human beings. When a Department of Public Health is created, as it undoubtedly will be in the near future, there will be little to do to make it effective beyond the transfer of cerain bureaus from other departments to the Public Health Service and the elevation of that to the dignity of a department already in full working order.

Significance of Chvostek's Sign in Older Children.

This sign, which consists in a sudden contracting of the muscles supplied by the facial nerve as the result of percussion over this nerve at a point midway between the zygoma and the angle of the mouth, has been regarded as pathognomonic of tetany. On the other hand, many competent observers have noted that the facialis phenomenon is frequently present in nervous children. Among these observers may be mentioned Frankl-Hochwart, Loos, Herbst, Sperk, and Hochsinger. A further contribution to this subject is made by M. H. Bass (*American Journal of the Medical Sciences*, July, 1912), who examined with reference to this sign, 495 children brought to the dispensary for various conditions. He found that the sign was positive in 3.2 per cent. of these cases. The sign was present in 1 per cent. of the children under 3 years, and increased in frequency with the increasing age of the child after this period, until the percentage of 19.6 was reached in children from 10 to 14 years of age. On the basis of the fact that in America tetany is relatively an uncommon disease, Bass concludes that the above figures furnish additional evidence that Chvostek's sign is not necessarily indicative of tetany. At any rate, in an older child it means as a rule a neuropathic constitution, and is especially common in children showing vasomotor irritability, and in those suffering from orthostatic albuminuria.

The Effect of Certain Experiments Upon the Islands of Langerhans.

Although it is now generally believed that the islands of Langerhans are in some way related to the production of diabetes, this hypothesis has not yet been rigidly established by experimental demonstration. There are numerous observers who attribute to the islands other rôles in the physiology of the pancreas. According to the "balance theory"

of Laguesse there is a regular transformation of acini into islands and of islands into acini, depending upon the demands of carbohydrate metabolism. Still another conception regards the islands as exhausted alveoli, which are nevertheless capable of resuming their normal appearance and function. R. L. Cecil (*Journal of Experimental Medicine*, July 1, 1912) subjected these theories to further analysis by means of inanition experiments, by means of the exhaustion of the pancreas with secretin, and by means of the production of phloridzin and adrenalin diabetes. These experiments are repetitions of those already performed by others, with the improved feature that in the former the islands have actually been counted and measured and the averages obtained have been compared with those obtained from controls. According to Cecil's observations the pancreas of a dog subjected to inanition does not show any active transformation of acini into islands, nor do they demonstrate any notable increase in either the size or the number of the islands after overstimulation of the pancreas with secretin. Moreover, in phloridzin diabetes, as in adrenalin diabetes, the islands of Langerhans are not affected. As the result of these findings, Cecil comes to the general conclusion that the islands of Langerhans are not formed out of exhausted or degenerated acini, but develop from the ducts or acini with which they are often in direct continuity.

News of the Week.

Smallpox Closes up City.—Carbondale, Pa., has an epidemic of smallpox which has made necessary an order by the Board of Health closing all churches, schools, and theaters, and prohibiting all public gatherings. Up to August 22 twenty cases had developed, and several were under suspicion. The mayor has ordered compulsory vaccination and has the assistance of the Assistant State Commissioner of Health in handling the situation.

Spain Accused of Concealing Plague.—That there have been cases of bubonic plague in the Canary Islands for some years, and that this fact has been carefully concealed by the Spanish Government is the charge made by Dr. Mario Lebredo, Commissioner of Cuba, who was sent to Spain several months ago for the purpose of studying plague conditions there. Dr. Lebredo believes it possible that the infection in both Cuba and Porto Rico recently may have been carried from Teneriffe, Canary Islands, the attitude of the Government having made the examination and detention of Spanish ships entering Cuba seem unnecessary. The Spanish Government's instructions are said to be to fight the disease in every way known to science, but to deny its existence.

Reception to Visiting Scientists.—The German Medical Society of New York will hold a reception on the evening of September 18 in honor of the German and Austrian physicians who will come to this country to attend the International Congress of Hygiene at Washington. It is expected that several hundred physicians will attend the Congress under the auspices of the Deutsches Zentralkomite für aerztliche Studienreisen of Berlin.

Civil Service Examinations.—The New York State Civil Service Commission announces examinations to be held on September 22 for the following positions: Physicians, homeopathic or regular, at a salary of $1,200; and dentist, resident in State institutions, at a salary of $600 and maintenance. Further details and application blanks may be obtained from the commission at Albany, N. Y.

The United States Civil Service Commission will hold an examination on September 11 to secure eligibles from which to make certification to fill vacancies in the position of physician in the different services. Among the vacancies to be filled are nine in the Indian Service, paying from $1,000 to $1,200 a year. Candidates must be citizens of the United States and over twenty-one years of age. Persons desiring to take the examination should apply at once to the United States Civil Service Commission, Washington, D. C.

Pure Drug Bill.—The Sherley bill, which was passed by the House on August 10, amends the pure food act by providing that drugs shall be considered as misbranded if the package or label shall bear any statement, design, or device, regarding the curative or therapeutic effect of such article, which is false or fraudulent. This measure was prepared on the recommendation of President Taft following the decision of the Supreme Court in the Johnson case, in which it was held that while the pure food law as it then stood required all packages to bear labels accurately setting forth the constituents of drugs offered for sale, there was nothing that prohibited the making of false statements as to the curative power of such drugs.

Infant Deaths.—During the week ending August 17 there were in New York City 353 deaths of infants under one year of age, 55 less than during the corresponding week of last year. Among the 17,360 babies registered at the milk stations there was only one death during the week.

New Ophthalmic Hospital.—Plans have been prepared for the new building for the New York Ophthalmic and Aural Institute, which is to be erected at the southwest corner of Fifty-seventh street and Tenth avenue, New York. The building, which will be eight stories high, on a plot 45 by 75 feet, will be the largest hospital in the country devoted exclusively to the treatment of diseases of the eye and ear. The estimated cost is $200,000.

Health of the Canal Zone.—For the month of July, 1912, the total number of deaths from all causes among employees of the Isthmian Canal Commission was 28, making an annual average death rate per thousand of 6.84, the lowest so far recorded for the month. Sixteen deaths were due to disease, giving a general average for disease of 3.9, the rate among white employees being 5.92 and among the blacks 3.25. No cases of yellow fever, smallpox, or plague originated on or were brought to the Isthmus during the month.

Expansion at the University of Pennsylvania.—Plans are in process of completion for increasing opportunities for clinical work in the medical department of the University of Pennsylvania. These comprise the erection of a group of buildings at a cost of more than a million dollars, with equipment to cost not less than half a million. The present nurses' training school building is to be removed and the present hospital is to be replaced by an entirely new one. A seven-story surgical building will provide for an *x*-ray department, surgical wards, operating amphitheaters, laboratories, etherizing rooms, and recovery wards. A medical building of similar design and size will meet the

needs in the field of internal medicine. In the middle of these structures there will be an administration building separated from the others by buildings devoted to hospital purposes.

Public Service Training School.—The New York Bureau of Municipal Research desires to procure for its Training School for Public Service several physicians who wish to enter public health work, particularly one or two who would like to qualify as experts in making sanitary and health administration surveys of cities in different parts of the country. Stipends of from $900 to $3,000 will be paid according to previous experience and prospective immediate service of applicants. Field work will consist of analysis of board of health budget estimates, visits to milk stations, various forms of inspection, such as of slaughter houses, nuisances, milk shops, etc., statistical analysis, and tabulation, etc.

Dr. Joseph H. White of the United States Public Health Service has been asked to accept the position of chairman of the Board of Health of Boston, Mass., for which Mayor Fitzgerald has been for some time past seeking a desirable candidate. It is reported that Dr. White will accept the offer if his release from the Government service can be arranged.

Dr. Albert O. Zwick of Cincinnati, Ohio, has been nominated for Congress by the National Progressive party of Ohio, running against Congressman Longworth, ex-President Roosevelt's son-in-law. Dr. Zwick's slogan is to be, "Wipe out the Slums!" of which he has made use in his fight against tuberculosis.

Gifts to Charities.—By the will of the late Sarah Morris Ogden of Riverton, N. Y., the sum of $10,000 is bequeathed to the Philadelphia Home for Incurables and the sum of $1,000 to the Female Association of Philadelphia for the Relief of the Sick and Infirm Poor.

St. Luke's Hospital, New York, receives the sum of $10,000 by the will of the late Mrs. Catherine E. Daly, the bequest to be used to establish in memory of Henry E. Daly, the testator's husband, two beds for the benefit of "dramatic, minstrel, variety, and circus performers, one bed for a man and one for a woman."

By the will of the late Joseph Netter of Philadelphia the sum of $1,000 is bequeathed to the Jewish Hospital in that city.

The Ninth International Otological Congress was held in Boston August 12-16, under the presidency of Dr. Clarence J. Blake of Boston. The total registration was 410, of whom 25 were official delegates from foreign countries. The Tenth Congress will be held at Halle, Germany, in 1915. The officers elected were: *President*, Dr. Alfred Denker of Halle; *Vice-President*, Dr. Alexander B. Randall of Philadelphia; *Secretary and Treasurer*, Dr. Henry O. Reik of Baltimore.

The Southern Medical Association will hold its annual convention in Jacksonville, Fla., on October 12 to 14, 1912, under the presidency of Dr. J. M. Jackson of Miami, Fla.

Caledonia County (Vt.) Medical Society.—At the annual meeting held on August 14 the following officers were elected for the ensuing year: *President*, Dr. A. J. Mackay, Peacham; *Vice-President*, Dr. H. L. Pache, Danville; *Secretary-Treasurer*, Dr. H. H. Miltimor, St. Johnsbury.

New York and New England Association of Railway Surgeons.—The twenty-second annual session of the association will be held at the Hotel Astor, New York, on Wednesday, November 13, 1912. Dr. John B. Murphy of Chicago will deliver the address in surgery, and in addition a very interesting program has been arranged. Railway surgeons, attorneys, and officials, and all members of the medical profession are invited to attend. The corresponding secretary of the association is Dr. George Chaffee, 338 Forty-seventh street, Brooklyn, N. Y.

Obituary Notes.—Dr. DENNIS B. NISBET of Eatonton, Ga., a graduate of the Medical College of Georgia, Augusta, in 1870, and a member of the Georgia State and Putnam County Medical Societies, died at his home on August 15, aged 57 years.

Dr. EDWIN G. STEINMETZ died at Hokendauqua, Pa., on August 13, at the age of sixty-eight years. He was graduated from Long Island Hospital Medical College in the class of 1867.

Dr. MANUEL J. MANENT of New Orleans, La., a graduate of the Medical Department of the Tulane University of Louisiana, in 1900, died at his home, on August 7, aged forty-one years.

Obituary.

JAMES EDWARD NEWCOMB, M.D.

NEW YORK.

DR. NEWCOMB died at Lake Kushaqua, N. Y., on Tuesday, August 27, from cardiac and renal arteriosclerosis. He was born in New London, Conn., August 27, 1857, was graduated in arts from Yale College in 1880, and in medicine from the College of Physicans and Surgeons, New York, in 1883. After the usual term of service on the house staff of Roosevelt Hospital he entered into general practice in this city; but early began to specialize in laryngology, in which branch of medicine his studious habits, careful observation, and unusual abilities soon brought him distinction. He was for many years secretary of the American Laryngological Association and was its president at the meeting in Atlantic City in May of this year. He was professor of laryngology at the Cornell Medical School, and consulting laryngologist to the Roosevelt Hospital. He was also a member of the Medical Societies of the county and State of New York, of the New York Academy of Medicine, of the American Academy of Medicine, of the West End Medical Society, of the Society of the Alumni of Roosevelt Hospital, and of the Hospital Graduates' Club.

Dr. Newcomb was in earlier years a frequent contributor to periodical literature, and wrote numerous articles on the nose and throat in the "Reference Handbook of the Medical Sciences" and in the "Twentieth Century Practice of Medicine." He was editor of the American edition of Grünwald's "Atlas of Diseases of the Mouth, Pharynx, and Larynx," and was the author, in collaboration with Burnett and Ingals, of a treatise on "Diseases of the Nose and Throat." For over twenty years he was a valued member of the editorial staff of the MEDICAL RECORD, contributing many editorial articles and reviews on laryngological subjects.

A man of culture and sound learning, an entertaining speaker, broadly charitable, tolerant of the views of others though firm in his own beliefs, a true and steadfast friend, Newcomb will long be held in affectionate remembrance by all whose privilege it was to know him.

Correspondence.

OUR LONDON LETTER.

(From Our Regular Correspondent.)

OUR TWO SCHOOLS OF TROPICAL MEDICINE—ROYAL SANITARY CONFERENCE AT YORK—TUBERCULOSIS, TUBERCULIN DISPENSARY SYSTEM, BATHING, LUNACY, PHARMACEUTICAL CONFERENCE—ITEMS—OBITUARY.

LONDON, August 9, 1912.

LAST week Mr. A. Chamberlain made a powerful appeal at the London Chamber of Commerce on behalf of the London School of Tropical Medicine—not merely on the ground of humanity, in saving life and lessening suffering, but, he told the city merchants, because we are becoming more and more dependent on tropical and semi-tropical countries and everything tending to make them more healthy, tended to promote trade, lessen its expense, increase the possibilities of development and so worked for the prosperity, not only of the district concerned but of the empire of which it formed part. He specially appealed to public companies and their shareholders, mentioned that some had already responded and about £19,000 had been given in response to letters he had himself writen in the last three or four weeks. There was good hope that still further saving of life would be secured in the future—much as had so far been attained.

The Liverpool Tropical School is also in need of funds for extension. Its workers hope to get a building with fuller facilities for teaching as well as a larger museum for entomology, helminthology, and protozoology. A special tropical ward in connection with the school, it is hoped, will be built at the Royal Infirmary close by, which would much exceed the present arrangements in convenience. It is also proposed to establish a branch laboratory in West Africa. Exhibits illustrating the mode of transmission of tropical diseases were sent at great cost to the Franco-British, Japanese, British, and Dresden Exhibitions, and this mode of educating all interested is intended to be continued if funds are forthcoming. The greatest work of this school has, however, been sending out expeditions to study tropical diseases in their home. In this way skilled men study the diseases in their usual environments and bring back material to work up for further investigations under laboratory conditions. The school has sent out about thirty such expeditions, and I need not tell you how fruitful has been the harvest, especially in the discoveries regarding yellow fever and sleeping sickness.

The eugenists followed up their International Congress, with an appeal for funds to put them on a pecuniary basis so as "to ensure the progress of the nation, if not to guard against an actual retrograde movement." They afterwards put in an appearance at the annual conference of the Royal Sanitary Institution in York, where the differences between the "better dead" and the "better not born" schools were in dispute. The former held that infant mortality, tuberculosis, alcoholism, and other fatalities should be regarded as excellent means of weeding out the worthless—extremists saying that the lethal chamber would be the best way of getting rid of the unfit. The other school conceded the right to live in all cases, but not the right to become parents. The talk of lethal chambers they stigmatized as "rubbish," and some people outside declare its advocates should begin at home and set an example of self-sacrifice before proposing it for others. The notion that medical men would serve on a committee to decide who should be put away was at once repudiated, and the audience reminded that the doctor's mission was to save life. It might be added, also, to remove the causes of imperfection when known and possible and where unknown to discover them.

A lady speaker on classes for mothers said textbook preparation did not suffice and related the following talk of two women: "What do you think of the board schools teaching the girls to manage babies?" Reply: "How are they to teach a girl to manage a thing as wriggles by holding a thing as don't wriggle?"

In the light of the foregoing it is as well to call to mind that the archbishop in his address had confessed a willingness to annul marriages when within a certain time insanity, epilepsy, etc., developed. But he admitted eugenists went too fast and in reading some of their views he had a sort of nightmare of a race physically fit, but mentally, morally, and spiritually sterile.

Tuberculosis claimed more attention from the congress. The tuberculin treatment was brought forward by Drs. Fraser and Clark, who have charge of the dispensary established by the municipality of Porstmouth. They gave a clear and sufficient statement of the treatment and the cases (433 in number) admitted in the last year. They are convinced of the value of the treatment and consider that its extension under municipalities, as in this case, is the most desirable plan. They would have waited for further experience before addressing the profession, but have received so many inquiries from others proposing to follow that they thought best to make a statement now. The dispensary they regard as the center of the scheme which should embrace hospital, sanatorium, open-air schools, house supervision, etc. In fact, the scheme should include all methods of dealing with cases in all stages, the dispensary admitting, diagnosing, and treating all that seem likely to benefit by the tuberculin method and passing others on to the institution which seems more suitable.

A discussion on tuberculosis in animals in relation to the public health was also held. Professor Dewars, presiding, emphasized the duty of government to do something to meet the risk from consuming the meat and milk of tuberculous animals. For twenty years and more the health of live stock had been committed to a government department which simply looked on without moving a finger to prevent while the disease was carrying off tens of thousands. It was time our honest endeavor was made to prevent the spread of the scourge.

The question of compensation was discussed. The cooperation of the farmer could be secured if he were met with some help, but one could not be expected to sacrifice an animal when his neighbors did not. Sir Shirley Murphy said the way to induce farmers to take all precautions was to bring it home to him that tuberculous milk or meat could not fetch the price of healthy articles. He did not favor insurance unless on a mutual basis, when the farmer would have a fixed interest in prevention. Dr. Surg.-Gen. Pryer said the Admiralty required in their milk contracts that the cows be tested by tuberculin annually and that inspection by a veterinary surgeon be made every six months.

Mr. Collins moved a resolution calling on the

government to appoint a conference of cattle owners, public authorities, and insurance companies to consider the eradication of the tuberculous milch cow. The chairman thought such a conference would not come to an agreement "until the crack of doom," but the resolution was adopted.

Dr. R. H. Quine caused no little amusement by a paper on the washing habits of the English in which he maintained that the nation is not so clean as supposed. This has set the wags of the general press to work with articles on "the tub" and other appliances for personal hygiene, and the loss of one more national characteristic—a press discussion, in fact, well adapted for the "silly season."

Dr. Mott contributed a paper to the effect that the increase of lunacy of which so much has been heard was more apparent than real. Since then Dr. Forbes Winslow has published a protest against that view and says rather that "we are rapidly approaching a mad world," for as civilization advances so lunacy increases. Fifty years ago we had one lunatic in 575 of the population, now one in 230. At this rate, Dr. Winslow says, that in 300 years there will be more insane than sane people in the world.

This year's meeting of the British Pharmaceutical Conference has been held in Edinburgh, president, Sir Edward Evans, who, in his address mentioned the extent to which drugs are cultivated in the United States. He instanced a number and advocated the same being extended here, perhaps under a department of the Board of Agriculture at Mitchaw, near London, and grow lavender, peppermint, and a few others, but only as a private enterprise. The next year's meeting will be the jubilee and is to be held in London. The remarkable increase of the trade in cascara was referred to—at one time a very small industry; now it was said amounting to 1,000 tons a year. To yield this amount some 100,000 trees were said to be destroyed in the forests of northern California, Oregon, and part of British Columbia. One might very well predict a shortage, but that might not be a calamity for the major part of it is certainly not consumed on the prescriptions of the profession.

On Tuesday a statement was circulated on the authority of the Local Government Board that a boy of seven was admitted to the Liverpool Royal Infirmary and operated on for appendicitis on July 27. A gland removed from the groin was found to contain plague bacilli. The diagnosis was confirmed in the laboratory of the Local Government Board. All precautions are being taken to prevent the spread of the disease, and so far no other case has occurred. The source of infection has not been traced.

The daily press is assuming airs on the ground that Dr. G. E. Morrison, who has been selected by the Chinese Government as its political adviser, is a British journalist. Both words are correct. British as an Australian born—journalist as having after an eventful career, settled down as special correspondent in China. But we might as well vaunt ourselves that he is a doctor, took his degree at Edinburgh and for some time practised in Paris. It was, however, as an explorer that he made his chief reputation. It was he who walked across the Australian continent from the north coast to Victoria and followed that exploit by walking across China and Burma. The West Indies, Spain, Morocco, and other places know him. At the siege of the Pekin legations he was present and when it was reported that they had fallen the *Times* published the obituary of their able correspondent, so perhaps he enjoyed the sensation of reading his story, for the legations had not fallen and the doctor is still very much alive.

Dr. A. N. Stevens, M.O.H. for Yarmouth, issued notices warning the people not to eat mussels from the river, but says in his report one woman who ate a quantity and had typhoid admitted that she had read the notice on the wall of her own house.

Mr. Arthur Trehorn Norton, C.B., formerly surgeon to St. Mary's Hospital, died on August 4, aged 71. He fulfilled his curriculum at St. Mary's school and became member of the Royal College of Surgeons in 1862, proceeding to the fellowship in 1867. He was then elected on the surgical staff of his hospital, to which eventually he attained the full surgeonry and the lectureship on surgery in the school. He was also for a time examiner on the subject in Durham University and served in the Volunteer Medical Staff Corps, obtaining the Decoration and the rank of Lieutenant-Colonel. He rendered service in France in the Franco-Prussian War, for which he was awarded the Gold Medal. He was Associate of the Order of St. John of Jerusalem and was created C.B. in 1897. His "Osteology for Students" reached a second edition, as did his "Affections of the Throat and Larynx." He translated Bernard and Huette's "Operative and Surgical Anatomy."

OUR PARIS LETTER.

(From our Regular Correspondent.)

SOCIETY OF SURGERY—TREATMENT OF HEMORRHAGES BY MEANS OF DIRECT TRANSFUSION OF BLOOD—GENERAL ANESTHESIA INTRODUCED BY MEANS OF INTRAMUSCULAR INJECTIONS OF ETHER—MEDICAL SOCIETY OF THE HOSPITALS—INFLAMMATORY TUBERCULOSIS OF THE URINARY APPARATUS—NECROLOGY, MARC SÉE.

PARIS, August 15, 1912.

THE treatment of hemorrhage by direct transfusion of blood was the title of a paper read before the Society of Surgery by Pierre Delbet, who reported two observations as to the efficacy of this treatment, one by Guillot and the other by Helly of Havre. The first case was that of a woman 40 years of age who had severe hemorrhages resulting from a uterine fibroid. She was transfused with blood from a vigorous and healthy man aged 35 years. Following this procedure the hemorrhages ceased. The second case was that of a woman 32 years of age who suffered from cancer of the stomach, which occasioned severe hematemesis and melena. Transfusion was performed by means of the anastomosis of the radial artery of a healthy man with the saphenous vein of the patient, as the result of which the hemorrhages ceased. Delbet after having studied the literature of this subject has arrived at the following conclusions: Transfusion of blood is only rarely necessary in the treatment of hemorrhages whose source can be found and controlled; but it is indicated above all in the case of anemia secondary to repeated hemorrhages, whether these are due to hemophilia or to visceral lesions. It is of value not only as a means of replacing the blood lost but also as a powerful hemostatic.

Tuffier recommends as a preliminary to the performance of transfusion the determination of the Wassermann reaction in the donor. The operation

itself requires rigorous asepsis. The two subjects should be placed on two beds in such manner that the head of one individual is opposite the feet of the other. The radial artery should be exposed for a distance as long as possible, while the segment of vein exposed need not be quite as long. For the union of the vessels one should employ Elsberg's cannula. The time during which the blood should be allowed to flow is variable; in general this time should be from 20 to 30 minutes. The indications of transfusion are mechanical hemorrhages, hemorrhages due to dyscrasia, and as a means of combating infections and neoplasms.

General anesthesia by means of intramuscular injections of ether was the subject of a paper presented before the Society of Surgery by Broca. This method has been proposed by Descar-Pentries of Roubaix. The latter employs a syringe holding from 20 to 30 cubic centimeters and a needle about 7 centimeters long. With the sterile syringe and needle the injection of ether is made quite slowly. The patient begins to experience severe pain; then he gradually falls into a light sleep; in fifteen to twenty minutes anesthesia is established, and continues for fully one-half hour. For the production of surgical narcosis it is necessary to inject as many grams of ether as the patient weighs in kilograms. The inventor of this method has never observed any accidents resulting from it. Jean-Louis Faure has reported the case of a woman aged thirty-five years suffering from a cancer of the tonsils and velum palati. Operation was performed under intramuscular ether anesthesia with the greatest satisfaction. Peugniez of Amiens has employed this method without any good results although he used 60 cubic centimeters of ether. Walther has tried this method but does not believe that it should be further practised. The anesthesia requires a long time to be established, the subsequent vomiting is not avoided, and the initial pain accompanying the injection is extremely severe. Quenu stated that this method should be abandoned. The anesthesia is obtained after a long time, and it is frequently necessary to resort to chloroform to quiet the pain resulting from the injection.

Inflammatory tuberculosis of the urinary tract was the subject of a discourse before the Medical Society of the Hospitals by Poncet. This observer believes that urinary tuberculosis is a frequent manifestation of this disease. To inflammatory tuberculosis he would attribute certain forms of nephritis and certain cases of orthostatic albuminuria. He believes that leucoplasia of the bladder and ureteral polyps are fundamentally of inflammatory tuberculous origin. Siredey stated that ureteral polyps are more frequently caused by gonorrhea than by tuberculosis. Dufour stated that there is frequently a close relationship between tuberculosis and renal lithiasis. Achard has also observed this association in a case of tuberculous pyelonephrosis; the calculi had a center of uric acid surrounded by concretions of phosphate of soda. Barth ventured the opinion that Poncet was too speculative in his ideas on this subject. It was difficult to admit that a large number of diseases, such as diabetes, are of tuberculous origin.

Marc Sée, member of the Academy of Medicine and of the Surgical Society, has just died. In spite of his old age his death was sudden. By his teaching and writings, Sée maintained an honorable place in the group of men who toward the middle of the last century sped the art of medicine along the fertile path of scientific observation. Before the time of Farabeuf he was chief of the anatomical division of the medical faculty of Paris; at that time he published the results of his studies on the valves of the heart. In this work he explained the function of the mitral and tricuspid valves and the rôle of the columnæ carneæ in such a clear manner that at the outset his ideas were adopted by all, and remain to this day a classic. This labor alone will serve to perpetuate the memory of Marc Sée. Besides he had the honor of collaborating for a long time in the publication of the fourth and fifth edition of the Descriptive Anatomy of Cruveilhier, which was a classic for many generations of students.

OUR BERLIN LETTER.

(From our Regular Correspondent.)

THE GERMAN SURGICAL SOCIETY—EPIDURAL INJECTIONS IN SCOLIOTIC SCIATICA—FREUND'S OPERATION IN APEX TUBERCULOSIS—SURGERY OF GASTRIC ULCER—X-RAY MEDICATION IN GASTRIC SURGERY—COVERED GASTRIC ULCERS—ECK'S FISTULA IN CIRRHOSIS OF THE LIVER—DIAGNOSIS AND TREATMENT OF CHRONIC PANCREATITIS—CONGRESS OF INTERNAL MEDICINE—GASTRIC RÖNTGENOGRAPHY—THERAPEUTIC EXPERIENCES WITH RADIUM AND THORIUM—THORIUM IN LEUCEMIA—TOXIC ORIGIN OF PERNICIOUS ANEMIA AND ITS ANTITOXIC TREATMENT—SURGICAL TREATMENT OF CHRONIC PULMONARY TUBERCULOSIS—SALVARSAN TREATMENT OF SCARLATINA—RENAL FATIGUE.

BERLIN, July 15, 1912.

Of the large German medical societies whose meetings were nearly all held during the month of April the following brief report may be of general interest. At the Forty-first Congress of the German Surgical Society, Heile of Wiesbaden read a paper on the treatment of scoliotic sciatica by means of epidural injections. In these cases the sciatica is the result of irritation of the posterior roots by the scoliotic condition of the spine. Through the intervertebral foramina of the spine there were injected with greatest success 100 c.c. of physiological salt solution. W. Kausch of Berlin reported his results in Freund's operation in apex tuberculosis. Of the nine cases that have so far been operated upon, five have been operated upon by the speaker. The operation is not dangerous. Only cases should be operated upon in which the disease does not extend below the second rib. In two cases in which this caution was not observed the result was unsatisfactory; in the other cases marked improvement and cure followed and has been permanent three and four years after the operation.

The surgical treatment of gastric ulcer occupied a great share of attention. Riedel of Jena reported 18 cases in which an ulcer of the lesser curvature was resected and in which the patient remained healthy for years afterward. Of greatest importance in securing a good result is the avoidance of injuring the edges of the wound by means of the pressure of the clamps. Kocher of Bern reported 80 cases operated upon, in 70 of which gastroenterostomy was employed and in only 10 of which resection was resorted to. Of 64 of the former cases, 50 have remained healthy during the following ten years. Since in the case of patients on whom gastroenterostomy has been performed carcinoma is found less frequently than in the case of

untreated ulcers, it must be accepted that gastro-enterostomy prevents cancer probably through the elimination of the stimulus of hyperacidity. The discussion was taken up by twenty-two members.

The value of radiography as a means of defining the indications in surgery of the stomach was the title of a paper based upon 800 examinations by Haudek of Vienna. Strict indications for operation are the demonstration of sacculation, hour-glass formation, and gastrectasia. It is now possible to determine by means of the *x*-rays the seat of an ulcer. Schmitzle of Vienna discussed the subject of covered gastric ulcers, that is ulcers to whose outer surface other organs are united by adhesions, so that when the ulcers perforate peritonitis is prevented. In the past two years he has operated upon two cases in which the liver was adherent to the site of the ulcer before perforation. Paul Rosenstein of Berlin reported a case of cirrhosis of the liver in a woman sixty years old in whom he established an Eck's fistula. Five months have elapsed since the operation, during which period ascites has been of slighter degree and of less frequent recurrence. This is the first instance of an operation of this kind being performed in a human being.

The diagnosis and therapy of chronic pancreatitis was the subject of a paper read by Gulecke of Strassburg. Of eight cases he made a correct diagnosis in five. Most characteristic is the pain radiating from the left shoulder and independent of the taking of food. Furthermore, of diagnostic importance are the doubled-up attitude of the body and the deep sensitiveness in the epigastrium. A resistance in the region of the pancreas is found in one-half of the cases. The urine voided after an attack contains sugar. By the operation of short-circuiting the pylorus the patients were improved but not cured.

The service of the *x*-rays in the recognition and treatment of diseases of the stomach was the subject discussed in a most thorough manner at the Congress of Internal Medicine, April 29, 1912, by Rieder of Munich. The subject of radium and thorium also came in for extended discussion. Falta, Kriser, and Zehner of Vienna reported the results of their therapeutic experience with thorium-X, particularly in leucemia. Thorium-X causes a rapid diminution in the volume of blood in animals, in normal individuals, and in cases of leucemia. In animals treated with thorium the splenic pulp, the adenoid tissue, and the chromaffin cells degenerate. In six cases of leucemia with a leucocyte count of 150,000 to 1,000,000, five were made normal by this method of treatment, and in one case the number of leucocytes was greatly diminished. At the same time the spleen and hypertrophied lymph nodes diminished in size, and many of the latter disappeared entirely. P. Lazarus believes that the radioactive substances have no specific action. All other chemically active rays have the same effect. The speaker could not confirm the rapid decomposition of uric acid under the influence of radium. He believed that the best effect was obtained by the injection and not by the inhalation of radium.

The origin of pernicious anemia was investigated by Lüdke of Würzburg, and Fejes of Buda-Pest. They were able to isolate from the intestinal flora hemolyzing substances that evoked pernicious anemia in monkeys. By means of these poisons the speakers were able to produce an antiserum that was capable not only of preventing but also of curing the disease. Frankel of Badenweiler discussed the surgical treatment of chronic pulmonary tuberculosis. In selected cases the operation consisted first in the resection of portions of the ribs posteriorly adjacent to the spine, from the first to the eighth ribs; and then after an interval of time, the resection of similar strips two to three centimeters long from the anterior portions of the ribs next to the sternum. In twelve cases the practically painless operation was well borne, and good results were obtained.

The treatment of scarlatina with salvarsan was reported by F. Klemperer and Woita of Berlin. Of 49 cases of severe scarlet fever not treated with salvarsan the mortality was 24.5 per cent. Thirty-nine very severe and 21 mild cases were treated with salvarsan. Of the severe cases there died only 8.3 per cent. The fatigue of renal function was the subject of a paper by Schlayer of Tübingen. In various forms of inflammation of the kidneys pronounced symptoms of this fatigue develop under the influence of certain disturbing agents. These include the diuretics and sodium chloride. The fatigue is observed most frequently in the case of chronic parenchymatous nephritis as well as in interstitial nephritis with a normal or diminished quantity of urine. The investigations show that in these cases the renal vessels are damaged. If fatigue develops from the use of diuretics or common salt, every other disturbing factor is all the more harmful.

OUR VIENNA LETTER.

(From Our Regular Correspondent.)

VALUE AND TECHNIQUE OF THE TEST BREAKFAST—ABDOMINAL ADHESIONS CAUSED BY PRESENCE OF SILVER WIRE SUTURES—APPARATUS FOR SHORTENING OF LEG.

VIENNA, August 15, 1912.

THE value and technique of the test-breakfast was the subject of a lecture recently delivered by Professor Schlesinger. The majority of patients even at the first attempt can introduce the stomach tube themselves. In hyperacidity with an acidity exceeding 60 the typical ratio of the free hydrochloric acid to the total acidity is 3 to 4, or even closer. In the case of normal acidity, with a total acidity of 40 to 60, the ratio is 2 to 3. In subacidity with a total acidity less than 40 the ratio is 1 to 2 or even wider. Subacidity with a close ratio signifies dilution (the dilution-secretion of Strauss or swallowed saliva); hyperacidity with a particularly wide ratio is suggestive of the presence of mucus (acid catarrh). Upon repeated siphonge the following pronounced change is observed: A rise in the figures for free hydrochloric acid and total acidity; a coincident narrowing in the ratio between them; and a diminution in the amount. This result suggests a transient disturbance of motility (atony) as a frequent complication of gastric diseases. Puzzling cases of hyperacidity can be discovered (larval hyperacidity), as well as cases of ulcer with an initial subacidity. Low acidity figures found in cases of alimentary hypersecretion are caused by an accompanying atony, for with repeated siphonage the genuine type of hypersecretion comes to the foreground. This transformation resulting from repetition of the test-breakfast does not occur in well compensated pyloric stenosis. But it does occur in the frequent combination of narrow pylorus (duodenal type of stenosis) with muscular insuf-

ficiency. In these cases are found an elevation and closer approximation of the figures. Later these figures remain constant with a coincident increase in the gastric contents (over 150 cubic centimeters). In acid catarrh the characteristic change is a lowering in the free acidity with a constant or even a diminishing total acidity.

Adhesions between the abdominal wall and intestine were discovered in a case reported by von Frisch. For a long time the patient, a woman, had suffered from intestinal disturbances until finally symptoms of ileus presented themselves. At laparotomy there were discovered adhesions extending from the posterior aspect of the linea alba to the small intestine, and beneath these adhesions a loop of gut was strangulated. After freeing these adhesions von Frisch discovered on the posterior aspect of the linea alba the projecting ends of a few pieces of silver wire that had remained after an operation for the closure of an umbilical hernia several years previously. The suture had cut through to the peritoneum and by irritation of the intestine had resulted in the formation of adhesions. This form of suture is apt to break if continually bent as the result of the physiological mobility of the organ or tissue into which the suture has been introduced, as in the case of a pateller fracture. If the tissue is not moved the suture rarely breaks.

An apparatus for pronounced shortening of the leg has been devised by Oscar Semeleder. The opportunity presented itself in the case of an eighteen-year-old girl who in infancy had suffered from tuberculous osteomyelitis of the femur. As a result both epiphyses of the femur had been destroyed, and the growth of the bone ceased. The amount of shortening of the affected leg was 24 centimeters. Semeleder constructed an apparatus with an artificial foot provided at the lower end. By means of suitable leverage the patient was able to utilize her atrophic muscles in locomotion, which she had not been able to do with the former apparatus. This exercise enabled the wasted foot to develop. In spite of a flail joint and genu varum the apparatus was carried up to the knee, and by means of a lateral position of the stepping surface of the apparatus the previous disadvantages with reference to the deformity of the knee were corrected. The patient, who had previously been unable to walk without pain, was able now to walk for hours without any difficulty.

Progress of Medical Science.

Boston Medical and Surgical Journal.

August 15, 1912.

1. Medicine and Humanity: The Physician as a Promoter of Civilization. J. C. Berry.
2. Our Present Knowledge of the Physiology and Chemistry of Gastric Digestion as Applied to Vomiting in Infancy. A. C. Eastman.
3. Pneumonia Not a Rare Complication of Heat Prostration. W. D. Reid.

2. Vomiting in Infancy.—A. C. Eastman states that Cannon has demonstrated that a certain normal tonus of the muscles of the alimentary tract is necessary for the normal peristaltic action. This tonus is stimulated by a vagus reflex due to mastication and the sense of taste, and when once stimulated is continued by the rhythmical peristaltic action due to the pressure of food. Any diminution of muscle tonus will delay peristaltic action in the stomach and tend toward lessened motility. Chapin has emphasized the point that atrophic infants as a rule are fed too often and as a result fermenting food is left in the stomach to contaminate succeeding feedings, and gradually a dilated stomach results with further loss of muscle tone. Vomiting in breast-fed infants is probably due almost always to a high fat percentage, usually caused by a lack of exercise and overfeeding on the part of the mother. The remedy naturally lies in regulating the mother's daily life, and, if necessary, diluting the milk. In bottle-fed babies the causes are more numerous. In the first place a large number of persistent vomiting cases are the result of too strong a formula at the time of weaning. There are certain cases of marasmus and atrophy in which the lack of muscle tonus is often fostered by the continued use of too dilute a formula. Too high a percentage of fat may also be a definite cause of persistent vomiting.

3. Pneumonia as a Complication of Heat Prostration.—W. D. Reid notes that among 160 cases of heat prostration pneumonia occurred in 10.7 per cent. and was the cause of 20 per cent. of the 44 deaths. Though not more frequent after heat stroke than after heat prostration, in the former pneumonia was much more fatal. Of lobar pneumonia there were seven cases with two deaths. Of bronchopneumonia there were ten cases with seven deaths. The greatest number of cases occurred between 20 and 30 years, but the severest mortality was in the sixth decade of life. Alcohol and arteriosclerosis were fatal complications. Erysipelas and empyema necessitatis were sequelæ in two of the cases. It is pointed out by the author that medical textbooks minimize or fail to mention the importance of pneumonia as a complication of heat cases. However, it occurs in 10 per cent. of these cases and it causes 20 per cent. of the deaths. The pneumonia does not differ from that due to other causes. The greatly depressed condition of the heat cases and the sometimes over-vigorous measures employed to reduce the body temperature seem sufficient and probable causes.

New York Medical Journal.

August 17, 1912.

1. The Prevention of the Causes of Insanity. A. J. Givens.
2. The Newer Teachings of the Diseases of the Alimentary Canal. M. I. Knapp.
3. The Commoner Contagious Diseases of Childhood. C. Herrman.
4. The Glycyltryptophan Test. G. A. Friedmann.
5. The Prognosis of Tuberculosis of the Larynx. S. von Ruck.
6. The Pathology of Chorea. F. A. Hulst.
7. Chorea. F. C. Eastman.
8. The Proteins. D. D. Van Slyke.

1. The Prevention of Insanity.—A. J. Givens alludes to the tendency to expend time, labor, and money more in dealing with the results of mental diseases than in preventing these diseases; and to the wastefulness and danger of pursuing such a policy. There is an apparent connection between increasing longevity and increasing insanity. The marriage of the unfit should be prevented. There is urgent need for the adoption of more practical measures for the lessening of the production, sale, and consumption of alcoholic beverages. There is a disproportion of foreign to native born insane, and a necessity for the distribution of the foreign element outside of cities. There are unappreciated opportunities offered by New York State and New England for the health-preserving life of the country.

3. Contagious Diseases of Childhood.—C. Herrman emphasizes the following points: As practical sanitarians physicians should know how contagious diseases are usually spread, not how they may be occasionally spread. These diseases are spread by persons and not by things. In the vast majority of cases the infection is due to contact either with a recognized or an unrecognized case or a carrier. The spread of contagious disease through the air, through desquamating scales, and through healthy third persons, not carriers, seldom occurs, and for prac-

tical purposes may be neglected. The disinfection of fomites, rooms, etc., is to a great extent unnecessary, especially since all infected individuals and carriers cannot be controlled. The carrier represents the crux of the problem. This difficulty will probably never be entirely overcome. On account of the existence of carriers, isolation, disinfection, improved medical school inspection, and special hospitals alone cannot have a marked influence on the reduction of morbidity. This reduction can be accomplished only by a method of temporary or permanent immunization against these diseases.

4. The Glycyltryptophan Test.—G. A. Friedmann reports the results that he has obtained with this test in nineteen cases in addition to the twenty-one previously reported. Only once in the first series of cases was this test positive in benign pyloric obstruction. This occurred with an enormous amount of sarcinæ in the contents of the stomach on fasting. On the other hand, the test was found frequently positive in gastric cancer. In this disease the test is of value, but cannot be considered pathognomonic.

5. Prognosis of Tuberculosis of Larynx.—S. von Ruck calls attention to the following points: Tuberculous changes are present in the larynx of patients suffering from pulmonary tuberculosis much more frequently than is generally recognized. The disease in the larynx in its early stages causes, as a rule, no definite or but slight subjective symptoms. For this reason the physical examination of every tuberculous patient should include, as a matter of routine, as much the inspection of the larynx as an examination of the chest. Slighter degrees of thickening of the mucosa which many observers are willing to accept as catarrhal are not infrequently tuberculous in nature, and may well suggest to the laryngologist who notes them in the course of his routine practice the propriety of a physical examination of the chest. The prognosis of tuberculosis of the larynx in the earlier stages is no worse, von Ruck maintains, than is that of the disease in the lungs.

6. The Proteins.—D. D. Van Slyke states that these are amphoteric electrolytes capable under proper conditions of combining with either alkali or acid. They are optically active. Many of the most striking physical properties of the proteins as a class bear no relation to their chemical composition, but are due to the fact that these substances are colloids. Similar to other colloids the proteins form solutions of almost no osmotic pressure, and have an unusual capacity to adsorb other substances in solution and to be adsorbed themselves. Adsorption is the term used to designate the concentration of a dissolved substance in the surface layer of the solvent. In discussing the chemistry of protein assimilation the author states that the explanation that the proteolytic products are resynthetized into protein while passing the intestinal wall must now be given up for the simpler one that the products enter the blood directly and are taken directly from it by the body cells. By the delicate and quantitative nitrous acid reaction the author has succeeded in demonstrating that amino acids are constantly circulating in the blood, although they are taken from it so rapidly by the tissues that they do not accumulate in amounts sufficient for isolation by present methods. It does not appear that the liver removes or destroys the amino acids before they reach the other tissues. During the height of digestion the blood from the femoral artery shows almost as much amino acid nitrogen (within one milligramme) as blood directly from the mesenteric vein. The amino acids entering the blood from the intestine circulate through the entire body, and apparently are offered directly to all of its cells for their individual necessities, to be either burned as sources of energy, or synthetized to form new cell protein.

Journal of the American Medical Association.

August 17, 1912.

1. A Broader View of Pityriasis Rosacea. G. H. Fox.
2. An Experimental Study of the Treatment of Cancer with the Body Fluids. E. J. Ill and W. D. Munningham.
3. The State Institutions and Some of Their Problems Which Medical Men May Help to Solve. A. L. Bowen.
4. The Bacterial Etiology of Acne Vulgaris. M. Haase.
5. Sarcoma of the Vagina. P. B. Bland.
6. The Pathology and Classification of Chronic Joint Disease. L. W. Ely.
7. Recent Advances in Our Knowledge of Typhus. J. Goldberger and J. F. Anderson.
8. Immunity and Specific Therapy in Experimental Cancer. I. Levin.
9. Four Cases of Typhus Fever (Brill's Disease) in One Family: With Successful Inoculation into Guinea Pigs and Monkey. M. Nicoll, Jr., C. Krumwiede, J. S. Pratt, and J. G. M. Bullowa.
10. The Preservation of Tissues and Its Applications in Surgery. A. Carrel.
11. Prophylactic Vaccination Against Epidemic Meningitis.
12. Erythromelalgia. G. A. Moleen.
13. Diet and Hygiene in Diseases of the Skin. L. D. Bulkley.
14. Intrammammary Injections of Oxygen in the Treatment of Eclampsia. E. Williams.
15. Note on a Peptid-Splitting Agent in Human Blood-Serum F. Smithies.
16. So-Called Precocious Menstruation Combined with Occurrence of Milk in the Breasts of an Infant; A Case with Hereditary Features. J. L. Valley.
17. Intrahepatic Hemorrhage of Traumatic Origin; Operation; Recovery. G. Torrance.
18. Suspended Heart Action in Acute Dilatation; Cardiac Massage; Recovery. I. Bram.
19. Hernia of Diverticulum of the Bladder. G. J. Bergener.
20. Another True Hermaphrodite. R. K. Smith.

2. Treatment of Cancer with Body Fluids.—E. J. Ill and W. D. Minningham report the results they have obtained in the treatment of twenty-seven cases of carcinoma and sarcoma by means of injections of ascitic fluid from a cancerous patient. The fluid used was the same kind as that employed by Hodenpyl. The fluid was drawn under the most careful aseptic conditions into sterilized bottles which were kept in a refrigerator, and all injections were given by siphoning the fluid directly from the container through a sterile rubber tube to the lower end of which a needle was attached. No cures were obtained, but the improvement in subjective symptoms was very marked in most cases and the last reports of some patients were that this improvement still continued. In one case where there was glycosuria this discontinued during the time of injection, but reappeared on discontinuance. Only one of the patients knew the character of his disease while being treated.

4. Bacterial Etiology of Acne Vulgaris.—M. Haase reviews at length the principal literature of the subject and notes that a diversity of opinion exists at the present time as to the bacterial etiology of acne. That there is a bacillus constantly present in all enlarged sebaceous follicles after the age of puberty, which may remain harmless under normal conditions, is probably the present view of dermatologists. The preponderance of opinion is in favor of its pathogenicity in susceptible individuals. Acne, in all of its various clinical manifestations, is apparently due to this bacillus which may appear under different forms in different conditions. The author has employed a stock vaccine of this bacillus in a number of cases, and, while he cannot claim for it the brilliant results obtained by some observers, he has found it so beneficial that he would be loath to treat a patient without its assistance.

7. Recent Advances in the Knowledge of Typhus.—J. Goldberger and J. F. Anderson conclude that satisfactory evidence has not yet been adduced that the blood of the monkey infected with typhus is virulent in the prefebrile stage. They also conclude that the blood of the monkey may still be virulent twenty-four to thirty-two hours after the return of the temperature to normal. Just as a considerable number of leucocytes are entangled and carried down by the red blood cells in centrifugating blood, so, they believe, is the virus carried down by the precipitated blood cells. Transmission by the louse apparently explains why typhus has been a disease peculiarly associated with misery and poverty, why it has been a

vagabond's disease, and a disease of jails and army camps. It has been demonstrated that this disease instead of being the exotic plague that it has almost universally been considered, has actually been endemic in this country for many years.

8. Immunity and Specific Therapy in Experimental Cancer.—I. Levin states that Wassermann's results obtained by means of chemotherapy seem to be the most successful of all those reported. The presence of immunity in the tumor animals makes it quite certain that ultimately a specific method of treatment in experimental cancer will be found. But it is impossible to predict whether the methods of chemotherapy, serotherapy, or ferment therapy will be the most fruitful of results. Chemotherapy is not the ideal method of treatment, but seems the most promising at present. It is difficult to predict the chemical nature of the most successful drug of the future, though one does not need to search for a substance absolutely fatal to the life of the tumor cells. The end may be achieved when a substance is found that will possess the power of arresting the active proliferation of the tumor cells.

10. Preservation of Tissues and Its Application in Surgery.—By A. Carrel. (See MEDICAL RECORD, June 29, 1912, page 1245.)

11. Prophylactic Vaccination Against Epidemic Meningitis.—A. Sophian and J. Black state that it is probable that the immunity produced by meningitis vaccination lasts for a long time, at least for a year. Vaccination is followed by an immediate febrile reaction, febrile leucocytosis, and an increase in immune body content, as determined by agglutination and complement fixation tests. Complement fixation tests will probably give the most satisfactory results, the agglutination and opsonin tests with the meningococcus, as with other Gram-negative cocci, giving frequently very irregular results. All evidence, especially the experimental, points to the efficacy of the injection of dead meningococci for prophylactic vaccination, as a measure which would confer considerable immunity in most cases, probably partial in all, against the infection of epidemic meningitis. It is very likely that only a moderate degree of immunity will give very considerable or complete protection against epidemic meningitis, which is caused by an organism of low virulence, infecting only a very small percentage of those who are exposed and who harbor the organism temporarily in their noses and throats. It is likely that if the disease subsequently develops in those vaccinated, it will be considerably modified and will run a much milder course with much better outlook for recovery, as is seen in those who develop smallpox after vaccination.

12. Erythromelalgia.—G. A. Moleen states that this disease is seen in association with diseases of the spinal cord and peripheral nerves, but is occasionally seen in a pure form. It is often difficult to differentiate it from the neurotic edemas which it somewhat resembles. The pain in some cases would appear to be the result of disturbance in the peripheral nerves, the posterior roots or, possibly, the lateral columns of the cord, while in other cases the burning and aching might be due to mechanical irritation of the peripheral nerve-endings primarily. In the treatment, rest in bed has been in most severe cases already made necessary by the pain aggravated by the upright position. In view of the vasomotor theory in the production of vasoconstrictor paralysis, the apparent influence of suprarenal substance in the author's case would seem to justify its use in plain or uncomplicated cases. Constitutional treatment is usually indicated to overcome the results of inactivity and confinement. A rubber bandage may at times render it possible for the patient to be on his feet with less discomfort and thus contribute to the betterment of his general condition.

The Lancet.

August 10, 1912.

1. Some Points in the Decline of the Birth Rate and Death Rate. Sir S. F. Murphy.
2. The Diagnostic and Prognostic Value of Leucocyte Counts in Cirrhosis of the Liver. L. Rogers.
3. Surgical Tuberculosis: Its Needs and Treatment. H. J. Gauvain.
4. Mercurial Administration: Some Uncommon Methods in the Treatment of Syphilis. D. Freshwater.
5. The Vascular Symptoms in "Cervical" Rib. T. W. Todd.
6. A Case of Multiple Gummata with an Unusual Deformity of the Liver. J. J. Jervis and A. L. Dykes.
7. Congenital Absence of the Gall-bladder, Associated with Imperfect Development of the Pancreas, and Imperforate Anus. H. Blakeway.
8. Industrial Employment of Married Women: Its Influence on the Birth Rate and the Sex Ratio at Birth. H. R. Jones.
9. Observations on the Neuron. H. Campbell.

1. The Decline in the Birth Rate and Death Rate.—Sir Shirley P. Murphy believes that much of the well-known decline of the death rate, not only in England, but also in Europe generally, which has occurred during the past fifty years, is a natural phenomenon which has appeared independently of the designs of man. The author does not deny that much of the improvement of the conditions of life, tending, as it does, to increase resistance to disease, is due to human agency, but he desires to show that, making full allowance for what man has done, nature has largely determined the decline of the death rate. Passing to a consideration of the birth rate and its parallelism to the death rate, both in London and elsewhere, the author compares definitely the behavior of the rates in three groups of districts, the grouping being based on the social condition of the parents. The surprising conclusion is reached that the decline in both birth rate and death rate has been least in the most favored classes. The author suggests that the rates of birth and death are so intimately connected that they are probably interdependent; and further, that inasmuch as fertility is inherited in man, and susceptibility to some diseases is possibly inherited, morbidity also may be inherited in a much wider sense than is now held to be the case. The evidence apparently indicates that the decline in the birth rate has not been voluntarily brought about. The author questions whether any artificial measures could possibly have such widespread and synchronous results as the decline in the birth and death rates.

2. Leucocyte Counts in Cirrhosis of the Liver.—L. Rogers states that leucocytosis is common in ordinary cirrhosis of the liver, a high degree of immediate very bad prognostic significance. On the other hand, a marked leucopenia is diagnostic of the disease being secondary to kala-azar. The latter conclusions appear to be of some practical value, as now that operative measures are frequently undertaken in the treatment of cirrhosis of the liver, it is obviously a matter of great importance, if by means of a blood count it should be possible to exclude cases which are likely to prove fatal at an early date, and to confine the surgical procedures to those in which there is a fair chance of permanent benefit resulting.

4. Mercurial Administration.—D. Freshwater concludes that either the intramuscular injection or the inunction treatment is by far the most satisfactory way of treating syphilis and least liable to be followed by relapses. For the ordinary routine treatment of syphilis intramuscular injection is preferable; it is more convenient and cleanly, and does not take much time during the day, but in nervous lesions following on late syphilis—*e.g.* tabes—the inunction treatment is as a rule more satisfactory, the results being sometimes marvelous. Treatment by the mouth should be carried out only when it is not possible to give injections or inunction; it is certainly often useful to give mercury by the mouth between the routine courses of injection. The intravenous method is better left alone except in very severe cases where other means have failed, and in acute lesions of the ophthalmic apparatus where there is danger of loss of sight. Treat-

ment by means of the "mask" is the most satisfactory method of introducing the mercury by respiration; it is certainly very suitable as an alternative method to the oral administration, being cleanly, simple to carry out, and effective. The same applies to the "mercurial bib," but somewhat better results are obtained with the mask; the bib is very suitable for children. Suppositories offer a good alternative method and may be continued off and on for a long time; they are *par excellence* the simplest method of giving mercury secretly when it is necessary. Fumigation is excellent for chronic lesions. The application of a mercurial plaster will often cause a chronic lesion to heal. Baths are somewhat dangerous and unreliable, but may be employed where a syphilitic lesion is complicated with a parasitic one.

5. Vascular Symptoms of Cervical Rib.—T. W. Todd states that in the condition known as cervical rib, any explanation of the vascular phenomena may be found inadequate if it depends only on direct mechanical pressure on the subclavian artery. Clinical and anatomical evidence suggests that the vascular symptoms may be trophic in character and caused by a lesion of the sympathetic fibers in the lower part of the brachial plexus. Certain anatomical facts indicate that damage may occur to the sympathetic fibers to the arm in the situation where a lesion of the spinal fibers is likely to occur in cases of cervical rib. The anatomical disposition of the parts around the subclavian artery as it passes from thorax to axilla indicates that this cannot be the site of injury to the vessel or to sympathetic nerves surrounding it.

8. Industrial Employment of Married Women, the Birth Rate, and the Sex Ratio at Birth.—H. R. Jones has found that the employment of married women in industrial occupations tends to diminish the birth rate. Such employment tends to the birth of a larger proportion of girl infants. Low birth rates tend to the birth of a larger proportion of girl infants. The rate of infantile mortality is higher as the proportion of employed married women rises. The question naturally follows whether the higher mortality is due to the quality of the offspring or to the environment during the year of infancy or to both factors. To answer this requires a more detailed analysis of the causes of death in infancy than is included in the Decennial Report of the Registrar-General, but it is pointed out that the mortality from puerperal fever and childbirth is higher in the textile than in the non-textile districts or in the colliery districts, being 6.74 against 5.12, respectively, and therefore the quality of the offspring is likely to have suffered. Lastly, the author calls attention to the relative influence which the birth rate and the rate of infantile mortality exert on the number of survivors. With a low birth rate and a low rate of infantile mortality the number of survivors out of 1000 infants born is greater than if a high birth rate and a high rate of infantile mortality prevails. But if the survivors out of the number of births per 10,000 inhabitants be calculated, it is found that the number of survivors is greater with a high birth rate and a high rate of infantile mortality than with a low birth rate and a low rate of infantile mortality.

British Medical Journal.

August 10, 1912.

Section of Dermatology.

1. Introductory Remarks by the President. Physics and Biochemchemistry in Relation to Dermatology. W. G. Smith.
2. Discussion on Acne and Seborrhea, Their Causation and Treatment. Introduced by A. Whitfield.
3. On Sporotrichosis. L. de Beurmann.
4. The Treatment of Nevi, Based on More than Two Thousand Cases. J. L. Bunch.
5. Types of Dermatitis Seborrheica. G. G. S. Stopford-Taylor.
6. A Rational Method of Treating Syphilis. J. E. R. McDonagh.
7. The Vacuum Electrode in Neurodermitis. J. Goodwin Tomkinson.
8. Papilliform Lesions (Lymphangiomata) of the Scrotum, associated with Multiple Petechial Spots on the Trunk and Limbs. F. C. Madden.
9. Chronic and Recurrent Maladies of the Skin in Relation to Heart Disease. D. Walsh.
10. Systematic Study of Morbid Conditions of the Nails. G. N. Meachen.
11. Sebaceous Carcinoma and Its Relation to Rodent Ulcer. L. Savatard.
12. Fibro-Sarcoma on Lupus Scar Tissue. L. Savatard.
13. Xanthoma Multiplex. W. C. Oram.

1. Acne and Seborrhea.—A. Whitfield outlines the following treatment of the seborrhea: Attention to the digestion and general hygiene and a diet low in those substances which have an action in increasing secretion. The use of the *x*-rays as causing temporary suspension of sebaceous activity. The use of caustics such as sulphur (probably acting as sulphuric acid), acids (acetic and hydrochloric), strong alkalis, and soft soap. The treatment of the comedo includes mechanical extrusion, the *x*-rays, and the use of microbacillus vaccines. The treatment of the suppuration includes surgical procedures, antiseptics as ointments or fomentations, and the use of staphylococcus vaccines.

9. Chronic and Recurrent Diseases of the Skin in Relation to Heart Disease.—D. Walsh notes that a large number of chronic and recurrent skin eruptions are associated with disease of the heart. Unsuspected organic heart trouble is comparatively common among patients attending a skin hospital. Prognosis in skin diseases largely depends on the state of the heart. Attention to the circulation is imperatively demanded in a large number of skin affections. The success or failure of much of skin therapeusis depends on the attention paid to the circulation. The circulatory inadequacy which determines the onset and duration of many chronic or recurrent skin eruptions might likewise affect internal organs. What is called "idiosyncrasy" might in many cases simply describe a pathological reaction, natural or acquired, to moderate traumatism. In this way the irregular incidence of trade and of drug eruptions might in many cases be explained —predisposition simply being another name for central cardiac inadequacy and disturbed balance of capillary circulation. In all cases of delayed healing or of chronic skin disease the state of the circulation should be carefully investigated. When it is proposed to administer any drug, such as mercury or arsenic, known to act as an organic irritant, the possession of a normal or a fully compensated central circulation should be regarded as a *sine quâ non*. The delayed healing of wounds and the persistence of inflammatory conditions, external or internal, often afford a clinical test of cardiac inadequacy more delicate than the shortness of breath, palpitation, and other ordinary evidence described in the textbooks. The dermatologist who wishes to do justice to himself and to his patients, Walsh says, will have to keep a constant eye upon the heart and its treatment in relation to diseases of the skin.

10. Diseases of the Nails.—G. N. Meachen submits the following conclusions with regard to nail diseases: It is difficult to work up an enthusiasm for a comparatively unimportant section of a special branch of medicine; nevertheless, onychology as a sub-branch of dermatology is worthy of the serious and earnest attention of those interested in the latter subject. In every case of skin disease presenting itself for treatment, either at hospital or in private practice, the condition of the nails should be briefly noted at the time of the examination. Were this carried out systematically in every instance, not only would abnormalities of a most interesting description be frequently found, but also many signs of cutaneous and systemic disease would be discovered. In the great majority of cases of nail disease it is possible to diagnose the morbid condition from careful inspection alone. Two general principles enunciated by the author—the "law of symmetry" and the "law of diminishing intensity"—are applicable in all cases of nail disease except those due to injury or parasitic causes.

Berliner klinische Wochenschrift.

July 29 and August 5, 1912.

Etiology of Malignant Granuloma.—By this term O. and K. Meyer refer to pseudoleucemia, so-called. Hodgkin's disease is also a convenient designation. The authors have been making some very radical studies in the etiology of the same. It was necessary to find typical cases free from all suspicion of tuberculosis. A young woman aged twenty had been ailing for four years with anemia and enlarged cervical glands, and subsequent implication of the glands of the axillæ and groins. Death took place from marasmus. There had not been at any time bacilli in the sputum, although clinically there were thoracic symptoms and fever. Autopsy revealed lymphoid tumors in the lungs and the type of spleen found in Hodgkin's disease. After the histological examination other lesions were reported showing a very extensive infectious process. The lesions were typical of the disease, and the most sensitive tests failed to disclose the presence of tubercle bacilli. A pulp was now made of some of the tumors and animals of several species were inoculated. Structural alterations followed, which while slight in character were similar in part to those of malignant granuloma. The liver contained nodules, while lymphnodes and spleen showed enlargement. In some animals the results were negative throughout. The results were on the whole unsatisfactory and the experiments were repeated with matter from a second patient. In this series all the animals inoculated gave positive results which were pronounced quite conclusive. The fact remained, however, that two of the three animals inoculated died of generalized tuberculosis, the natural inference being that a small focus of the latter had become activated by the artificial granulomatosis. The same association has been encountered before. The Gram-positive bacilli and granules believed to be characteristic of malignant granuloma were obtained in pure cultures, but these later appeared to represent a strain of tubercle bacilli which had undergone some unknown modification. Hence either the tubercle bacillus is the actual cause of malignant granuloma or some unknown, not yet isolated microorganism accompanies it through its cultural life. In any case a pure granulomatosis is able to set up miliary tuberculosis which cannot be set down to mere accidental coincidence.

Mutation and Adaptation in Microorganisms.—Pringsheim discusses the possible changes from the acclimation of high temperatures, as suggested by Dallinger's work with flagellates, the latter, used to 16° C., being adapted through years of effort to 70° C. After this adaptation they were killed by the original temperature. A second type of adaptation is the toxic. Ehrlich found this extremely difficult, his work being done with trypanosomes. It has been effected for a number of species of microorganisms. Once secured it may be transmitted intact through many generations. Naturally, this problem involves the whole of acquired immunity. A third mode of adaptation is to a diminished oxygen supply, this naturally involving the change from aërobes to anaërobes. Adaptation to nutrient media is, of course, well known. The question now arises, do adaptations produce other variations? But to study variability it should be advantageous to isolate organisms who most exhibit departures from the standard. This has been known by Barber, using a special refinement of method, which would be very difficult for routine use. The author believes that research along this line had better be directed for the present to variations in nutrient media. In regard to the practitioner whose interest lies in the pathogenicity of a given germ and not in purely biologic aspects, the author states that virulence variation is at present a subject not adapted to purely scientific research. We must first have more exact information about microorganisms in general.

Treatment of Bacterial Infections with Chemicals.—Blumenthal alludes to the former belief that a chemotherapeutic remedy should be able to kill its bacteria *in vitro,* although atoxyl, the supposed prototype of such a remedy, had no action *in vitro* upon typanosomes. It then became evident that the remedial efficacy of some substances can be explained only through the fact that somehow they mobilize defensive substances. This view is further strengthened by the discovery that a given substance may have a chemotherapeutic action in one kind of animal, yet be inert in another. If mercury were a newly discovered substance and were being tested on animal disease, there could be nothing in the results to warrant a belief that mercurials can cure human syphilis. Recent studies have shown that atoxyl and salvarsan increase the amount of agglutinins, and this indirect action reinforces any direct action upon the microorganisms themselves, for it is of course beyond doubt that a direct action is exerted upon them. This is apparent in contrast to the action of mercurials in syphilis. Long after the remedy has been mostly eliminated the chancre is still alive with spirochetes. The remedial property of mercurials is indirect then, but none the less specific and chemotherapeutic. It is now known that all the efficacious preparations of mercury are fixed in the liver, while inert combinations are not; hence the drug acts somehow by grace of the liver. The rousing of the defensive forces naturally touches upon opsonotherapy, although the author is dealing here with specific chemotherapy.

Intraarterial Therapy.—Bleichroder, Lob and Unger discuss this subject from separate viewpoints. The first-named caused collargol to be thrown into the femoral artery in cases of puerperal sepsis in which the infection was later found to have passed beyond the uterus. In but one case was any favorable action noted, nor was any expected save in the contingency that the infection was still limited to the uterus. The author also considers the possibility of throwing tetanus antitoxin into the carotid artery during compression of the jugulars. This would saturate the brain with the remedy and perhaps be superior to trephining and injecting. Unger discusses systematic animal experimentation with certain injections, as in arterial anesthesia. Lob gives the technique.

Oxaluria.—Rosenberg states that we are still ignorant of the causation of this phenomenon, aside from the exogenous type, and that is not entirely clear, for the alkaline secretions of the intestine should render oxalic acid insoluble. In endogenous oxaluria, the acid could be formed from the glycocoll derived in turn from the gelatine of connective tissues, the nucleiniferous substances, the carbohydrates, glycuronic acid, etc. A study of individual cases of oxaluria may throw light on the mechanism of the single case. For example, a patient with oxalic acid calculus was subject to chronic diarrhea, due evidently to enteritis, in which the reaction of the stools was acid. This pointed to exogenous oxaluria, but the patient ate hardly any vegetables. After a ten-day period of unchecked diarrhea, a new attack of renal colic occurred. Then with a period of alternating constipation oxalic acid disappeared from the urine; not only in this but in another patient as well the author has seen acid diarrhea followed by oxaluria. But how explain this phenomenon? The oxaluria was endogenous, yet must have come about from changes in the food in the alimentary canal. No such etiology has ever been recognized absolutely, although Minkowski once suggested such an occurrence.

Deutsche medizinische Wochenschrift.

August 1 and 8, 1912.

Medicines and Poisons.—Professor Traube first mentions the common assumption of the necessity of a chemi-

cal reaction to explain the action of a remedy or a poison. In recent years the development of the new physical chemistry has shown that purely physical laws also have to be reckoned with in this connection. In certain cases the latter are clearly sufficient for fixing the rationale. This is true of certain remedies which produce blood changes, so that a law may be enunciated as follows: in the blood and in other colloid systems the toxins which are causing diseases are detoxicated when their colloid particles are enlarged. These molecular changes may be ultramicroscopic, microscopic, or macroscopic. From this point of view an antitoxin simply produces its effects by enlarging the colloid particles. The larger the latter, the less the toxicity. The physical theory serves to illuminate already many puzzling features in pharmacodynamics. It shows why in this field one and one do not necessarily make two. Two half doses in succession are often stronger than a single dose because the concentration enters into the reaction. The optimum action of drugs is explained, also that of agglutination and hemolysis. The reenforcing effects upon one another of synergists (Bürgi) is also illuminated, also the frequently noted fact that a certain drug acts better when given in connection with another which is not a true synergist.

Mutations of Bacteria.—Baerthlein reports further upon this subject, upon which he has long been employed. He has developed mutation strains of the prodigiosus by growing on special media and propagating special colony forms. The new strains showed special coloration, although the stock culture was colorless. He also succeeded in producing new colony types of the pyocyaneus, both moist and dry, further showing color mutations. The golden staphylococcus was grown white and in propagation remained white. Conversely he produced the golden staphylococcus from the white. He does not go so far as to assert that he actually transforms the species, but simply produced mutations closely resembling them, although still showing individuality in the colony. Apparently he had little trouble in producing mutations of many germs. With some mutations differences in virulence were also obtained, but this field of work is evidently a matter for the future, although much work has been done already in this field, for example, in the hemolytic activity of different strains of streptococci. A solid foundation concerning the various mutants produced must underlie a study of the pathogenicity.

Epidemic of Jaundice.—Weissenberg describes an epidemic in Southern Russia. Only a certain number of these episodes are entitled to the name of Weil's disease; the latter is severe and often fatal in character. In the present epidemic there were forty-four victims. It began in the summer and lasted for a year and a half, the victims being urban residents. The affection was decidedly mild and as a rule the patients were not laid up. In a certain number there was considerable enlargement of the liver and albuminuria. One fatality from acute yellow atrophy occurring during the epidemic may have been a coincidence. In the absence of autopsies or bacteriological examinations, no data can be advanced to throw light on the intimate nature of the disease, which was in part an ordinary acute catarrhal jaundice of epidemic incidence.

Oxygen Poisoning.—Bornstein and Stroink refer to the consequences of breathing compressed air and of employing oxygen inhalations as a prophylactic before compression or before decompression. The English authorities have taught that compressed oxygen is a strong poison, able to kill animals amid convulsions. The contrary was claimed many years ago and has been confirmed in part in recent years. The authors have had a chance to study a mild case of true oxygen poisoning in one of their own persons. Bornstein had inhaled oxygen while in two atmospheres of air up to forty-eight minutes with impunity on many occasions. On a particular occasion he began to inhale oxygen while working in compressed air and at the fifty-first minute noticed contractions in the right lower extremity. In the course of a minute the left limb was similarly affected. Having determined the low limit of oxygen toxicity the experiment was broken off. Animal experiment also shows abundantly that respiration of oxygen in a compressed atmosphere has toxic consequences.

Spread of Typhoid.—Brückner on a basis of his personal studies of epidemics comes to the following conclusions: Koch's teaching that the subject who gives off bacteria is solely responsible for spreading the disease has received the most completee confirmation. In tracing the spread of an epidemic we always see the characteristic uncleanliness and filth which surrounds patients and carriers. This not only renders the immediate neighborhood dangerous to others, but more remote neighborhoods through contamination of food supplies. Contact infection plays a minor rôle. Destruction of the bacilli in the feces and urine is the principal reliance; next comes the inculcation of cleanliness and strict supervision of milk and other food supplies. All carriers ought to be found, controlled, and sterilized.

Adrenal Therapy in Addison's Disease.—Klein relates the case of a powerful man who without apparent cause developed typical Addison's disease within a few months. The picture comprised loss of weight, pigmentation, a general collapsed appearance, and great muscular weakness. This was followed by marked gastroenteric disturbance of a sort well calculated to end his life from inanition. His weight had come down from 186 to 95 pounds. None of the remedial measures used were of the least avail. He was then placed upon fresh adrenal glands from the sheep, taking them raw and minced. As he developed repugnance to these a compressed extract was substituted. The improvement was striking, all the symptoms showing change for the better. The treatment was suspended at times, but if for more than two weeks always with detriment. He had recovered fifty pounds of his weight, and his improvement otherwise was harmonious, when suddenly and without apparent cause acute gastritis set in, with prostration. There was no evidence of a return of the disease. It was learned, however, that he had suspended his adrenal treatment for over three weeks. His stomach was now unable to retain anything. Cerebral symptoms now set in and death took place from coma. The lesson of this case is that we have not sufficiently tested organotherapy in these cases. Others have obtained equally favorable results, and the best evidence of the efficacy is the aggravation of these cases when the treatment is suspended.

Tertiary Specific Ulceration of the Pharynx Undergoing Malignant Transformation.—D. McKenzie reports the case of a man, aged eighty-one years, whose throat had been troubling him for three months. The syphilitic element was still active; it had destroyed the uvula and much of the soft palate, and had eroded the tissues in the tonsillar regions. In the region of the left tonsil a raised area, rather nodular in appearance and hard to the feel, made the author ssupect the existence of malignancy. The nodule was therefore removed and examined for malignancy, with a positive result. There was a small, hard gland under the left angle of the jaw. The Wassermann reaction was negative. The patient was given iodide of potassium and had already benefited by it. The occurrence of epithelioma in the midst of what seemed to be an active tertiary ulceration was an interesting clinical experience.—*Proceedings of the Royal Society of Medicine.*

Insurance Medicine.

SHOULD NON-ORGANIC HEART MURMURS BE REPORTED?

To the Editor of the Insurance Department:

Sir:—I have noted your articles in the Medical Record with interest and have felt that they would prove of considerable value. I must, however, take exception to some of the statements concerning non-organic murmurs in the issue of June 29, 1912. We agree that an examiner should satisfy himself as thoroughly as possible whether a murmur is or is not organic, and the company must be given the benefit of the doubt, but we do not agree that an examiner, if convinced that the accidental sound is not significant of a pathological lesion, should not report it. An examiner should report his findings just as they are and he can further express his opinion on findings, but the Home Office Medical Department is responsible for the estimation of the effect the conditions found have with the rating of the risk.

I am under the impression that the statements made in this issue of June 29 will, in some respects, produce an undesirable result, leading some examiners to give the home office their opinion of their findings and not record what they may hear. Please let us have a statement from you as to the opinions we have expressed above.

J. Allen Patton, M.D.
Assistant Medical Director the Prudential Insurance Company.

Before discussing the question we desire to thank Dr. Patton for bringing up this point. It gives us an opportunity to supplement our views, as there may be others who have the same feeling in regard to the statements in the article referred to by Dr. Patton.

Medical directors are generally too busy to afford the time so often exacted in clearing up those statements by examiners which, while they apparently convey no significance, must nevertheless be further explained on the ground that anything which is important enough to incorporate in the report is of sufficient consequence to call for investigation until all doubt is removed. In other words, the reporting of some unimportant abnormality or of some trivial or extraneous matter with positively no underlying diseased condition and, consequently, no bearing upon the insurability of the risk, only serves to increase uselessly the work of the home office staff. A non-organic murmur does not affect the acceptance of a risk any more than one of the well-known physiological differences in auscultation and percussion between the two sides of many healthy chests or some anomaly of the radial artery. It is our belief that while examiners are being taught to be rigidly careful in their search for pathological conditions, they should also be encouraged to refrain from clouding up their reports by references to inconsequential matters.

In the case that an examiner does report a non-organic murmur, after heeding the strict injunctions in the article referred to (it would be well for examiners reading these lines to consult the article), the responsibility of the home office medical department ends when after more or less correspondence it is found that the examiner holds to his opinion, for, after all, he must be relied upon and his findings must be accepted if he is worthy of the position he holds. A medical director would naturally choose to have his own ear to the chest when estimating the value of a risk, since he assumes the final responsibility in accepting it, but this proceeding can be resorted to only in the extremely small percentage of cases which come under his personal observation.

We hold to the view that the medical department of every company should maintain so high a standard of efficiency among its examining force that the opinions of its field examiners may be depended upon. The medical profession have to admit that the membership includes men of all grades of efficiency from excellent to poor. Knowing this, the medical department should maintain a continuous effort to weed out the incompetent and unreliable, by replacing them by some of the better equipped men found in almost every community. The writer can speak with authority on this subject and claims without hesitation that an organization of this degree of excellence can be built up, the company which he represents having succeeded in this direction after years of hard and persistent work. There is no reason to doubt that Dr. Patton's company has undertaken this task with an equally satisfactory return and that he may exercise the same readiness to accept the reports of the examiners.—Editor.

The Medical Department Organization and Method of Procedure.—H. A. Hoppe says there is a dual function to be exercised in the acceptance of risks. The one, purely advisory, is controlled by the medical director; the other, executive in its nature, belongs to the approving officer who passes on the cases submitted. It is necessary that these two officials work hand in hand, for only by the freest exchange of opinions can the work be successfully accomplished. Hoff thinks that there is no valid reason why the doctrine of scientific management should not be as successfully applied in the medical department of a life insurance company as the now classic example of the handling of pig iron in the Bethlehem steel plant. Refering to death-loss records, the explanation is given that this is a record of death losses by examiners, giving all essential details and bringing together all losses which have occurred among cases examined by any one examiner.

According to Hoff, one of the most trying features of the work in the Medical Department is the frequency with which agents will employ unauthorized examiners. Many and varied are the explanations advanced in support of such action, but it will be found a paying proposition never to accept such explanations without thorough investigation.

In conclusion it is stated that the scheme of organization outlined by Hoff is based on the following considerations: 1. That the ultimate object of all activities in the medical department is the attainment of a favorable mortality experience. 2. That the means by which this can be secured is a careful selection of risks and an effective control of medical examiners. 3. That one of the principal duties of the department is to so arrange the machinery as to serve adequately, promptly, and easily the interests of the men in the field. 4. That this desideratum can be best secured by bringing together under one responsible control all activities relating to the consideration of risks.—*Second Mid-Year Meeting of the American Life Convention*, February 28, 29; March 1, 1912.

Book Reviews.

An Index of Differential Diagnosis of Main Symptoms. By Various Writers. Edited by Herbert French, M.A., M.D. (Oxon.), F.R.C.P. (Lond.), Assistant Physician in Guy's Hospital. With sixteen colored plates and over two hundred illustrations in the text. Price $8.00. New York: William Wood & Company, 1912.

This work is a new departure in medical literature and is in a sense a corollary to the index of treatment written after the same general plan. The title "index" is not absolutely accurate, for while it is true that the articles are arranged in alphabetical order those on the more important symptoms are really well and carefully written monographs in which differential diagnosis is dealt with. There has long been felt a want for a work of this description, and in editing this volume Dr. French has fulfilled the object at which he has aimed with remarkable painstaking care and ability. This guiding principle has been to suppose that a particular symptom attracts special notice in a given case, and that the diagnosis has to be established by differentiating between the various diseases to which the symptom may be due. As may be easily understood in editing and compiling a work of this sort one of the chief difficulties met has been as to where to draw the line with respect to symptoms themselves. However, this difficulty has been solved in a satisfactory manner. There are a few omissions in the book, that is, there are a few subjects which would seem to have been worthy of discussion at some length. Still it must be borne in mind that if bacteriological and pathological tests had been included the size of the book would have been increased to such an extent as to have made it unwieldy. In its present form the volume covers the entire range of medicine, gynecology, ophthalmology, dermatology, and neurology, and for an initial effort in the particular direction of differential diagnosis must be esteemed wonderfully complete. The general index itself is commendably full, covering some 167 pages. Whilst the body of the book deals with symptoms, the general index collects these under the headings of the various diseases in which they occur. Moreover, those minor symptoms and physical signs which have not been thought of sufficient importance to merit separate articles will be found in the general index. The plates and illustrations are good and the list of contributors should be a guarantee that the subject matter is treated both from a medical and literary standpoint with knowledge and ability. No medical book brought out in recent years has been so well adapted to the use of the busy general practitioner, and Dr. French is to be congratulated on the acumen he has displayed in adventuring into hitherto untrodden fields.

The Edward Bok Books of Self-Knowledge for Young People and Parents. How Shall I Tell My Child? by Mrs. Woodallen Chapman; When a Boy Becomes a Man, by H. Bisseker; Instead of "Wild Oats," by Winfield Scott Hall. Price 25 cents each. New York, Chicago, Toronto: Fleming H. Revell Company, 1912.

The vexed question of how and when to discuss the facts of the sex life with the young is *so* vexed that it is often pusillanimously evaded by the very people whose duty it is to meet it frankly and with courage. These well turned out and convenient little text books on the subject, which we are told are to be followed by others, meet most admirably the needs of all those, and they are many, who crave wise words of guidance on the subject. The first of the series, "How Shall I Tell My Child?" is written for the parent, and would seem to answer the question adequately for us all; the others are written to be placed immediately in the hands of the youth (the second for the boy, the third for the young man) and are, like the first, little masterpieces of clean, straightforward frankness.

Primary Malignant Growths of the Lungs and Bronchi. A Pathological and Clinical Study. By I. Adler, A.M., M.D., Professor Emeritus at the New York Polyclinic, Consulting Physician to the German, Beth-Israel, Har Moriah, and People's Hospitals, and Montefiore Home and Hospital. Price, $4.00 net. New York: Longmans, Green & Company, 1912.

This little monograph on tumors of the lung is a gratifying evidence of the increased interest in pathology in this country. The author, well known as a clinician of ability and scientific training, has for years been interested in tumors of the lung, bronchi, and mediastinum, and has collected the results of his observations in a volume devoted to his teacher, Prof. Dr. Julius Arnold. The actual text occupies 109 pages, being divided into introductory and historical portions, a section on the influence of tuberculosis and other conditions on the production of malignant tumors, chapters on morphology, and finally a clinical discussion of symptoms and surgical treatment. The pathological portion is admirably illustrated with a series of sixteen photogravures showing the gross and microscopical appearances of the lung tumors. The remaining 215 pages are devoted to a tabular report of all the known cases of primary malignant tumors of the lung. The volume is unquestionably the most important treatise on this special subject.

Manuel d'Histologie Pathologique. Par V. Cornil, professeur à la Faculté de Médecine, membre de l'Académie de médecine, médecin de l'Hôtel-Dieu, et L. Ranvier, professeur au Collège de France, membre de l'Institut, membre de l'Académie de médecine, avec la collaboration de MM. A. Brault, membre de l'Académie de médecine, médecin de l'hôpital Lariboisière, ancien chef des travaux pratiques d'anatomie pathologique à la Faculté de médecine, et M. Letulle, professeur à la Faculté de médecine, membre de l'Académie de médecine, médecin de l'hôpital Boucicault. Troisième édition. Tome quatrième. G. Millian, Poumon.—L. Decloux et L. Ribadeau-Dumas, Bouche, Pharynx, Osophage.—D. Critzman, Estomac.—L. Decloux et L. Ribadeau-Dumas, Intestin, Colon, Rectum.—A. Brault et Th. Legry, Foie.—Klippel et Lefas, Pancréas.—A. Brault et A. Courcoux, Rien.—N. Hallé, Appareil Urinaire. Avec 438 gravures en noir et en couloures dans le texte. Price, 45 francs. Paris: Librairie Félix Alcan, 1912.

In the third edition of Cornil and Ranvier's manual of pathology, the fourth volume of which is devoted to the gastrointestinal tract, liver, pancreas, and genitourinary region, a good many improvements and additions have been made which render the work a valuable repository of pathological anatomy, though the point of view is, as possibly it should be, predominantly that of the French school. The quotations from German and English writers are more noticeable for their infrequency than for any other reason. Yet in this way the book retains a certain personal quality and novelty which is refreshing to those who spend their time in reading the German pathological works. The only possible criticism is of the inferior quality of many of the cuts, which by their crudeness and poor printing do not reflect much credit on the present French school of illustrators who have departed sadly from the high standard set in the illustrations of the famous tomes of the old French anatomists.

Die Prostatahypertrophie. Ihre Pathologie und Therapie. Für Ärzte und Studierende dargestellt von Dr. Med. Wilhelm Karo, Berlin. Price 1.60 marks. Berlin: Oscar Coblentz, 1912.

This is a pamphlet of fifty pages giving a good résumé of the pathology and therapy of prostatic hypertrophy. It is well written but contains nothing original.

Massage and the Swedish Movements. Their application to various diseases of the body. Lectures before the Training Schools for Nurses. . . . By Kurre W. Ostrom, from the Royal University of Upsala, Sweden. Seventh edition, revised and enlarged. With one hundred and fifteen illustrations. Price $1.00. Philadelphia: P. Blakiston's Son & Co., 1912.

This small book consists of a clear and conservative presentation of the technique of massage and the results that can be obtained by it and by well-regulated gymnastic exercises. The author lays stress throughout on the necessity of a physician's supervision over the work of the masseur. The book should prove valuable to nurses, to masseurs, and to physicians. Its usefulness is proved by the calls for a seventh edition.

Manual of Surgery. By Alexis Thomson, F.R.C.S. Ed., Professor of Surgery University of Edinburgh; Surgeon Edinburgh Royal Infirmary, and Alexander Miles, Surgeon Edinburgh Royal Infirmary. Volume III. Operative Surgery, with 220 Illustrations. Price $3.50. Edinburgh, Glasgow and London, 1912.

This compact volume is the third of the excellent series on surgery by two distinguished Edinburgh surgeons. The Edinburgh medical school not long ago enjoyed a far-famed reputation for the thoroughness of its teaching and the series referred to and this work in particular well maintain this high standard. In concise but adequate language the writers describe operative surgical measures as they are practised to-day, modified to some extent by the cautious conservatism of Scotch and English surgeons. The volume contains a large number of fine illustrations, and from all points of view may be strongly recommended as a textbook for advanced students and as a reference book of value for the surgeon and general practitioner.

Special Article.

A REPORT UPON THE HEALTH CONDITIONS IN THE PUBLIC SCHOOLS OF NEW YORK CITY.[1]

BY THE COMMITTEE ON PUBLIC HEALTH HOSPITALS, AND BUDGET OF THE NEW YORK ACADEMY OF MEDICINE.

Objects of the Report.—This study of health conditions in the public schools has been carried on with the following main objects in view:

1. To summarize the present methods of safeguarding the health of school children employed by the Department of Health and the Department of Education.

2. To analyze these methods and their results from a strictly medical point of view.

3. To enlist the interest and cooperation of the medical profession as a whole in the problem of school hygiene.

4. To give medical advice and assistance to the Departments of Health and Education in their efforts to solve these problems.

5. To support the reasonable demands of these Departments for sufficient city funds to maintain proper health conditions in the public schools.

It is desired to make this report, upon the one hand, educational to the general medical profession, and upon the other, helpful to the two departments of the city government which are mainly concerned.

It is inevitable that such a study should contain criticism. We have attempted to offer such criticism in a spirit of helpful suggestion rather than of indiscriminate faultfinding. This attitude has been the more easy to maintain for the reason that our study has mainly impressed us with the magnitude and complexity of the problem, and with an appreciation that both departments have been making earnest efforts to solve it, in spite of very little outside interest or support.

No body of citizens should be more concerned in matters of school hygiene than physicians, yet none has been more remiss in evincing an interest in them.

Definition of Medical Inspection of School Children and Its Purpose.—Efficient medical inspection includes a complete and detailed physical and mental examination of every child in the school. The purpose of such inspection is: First, to conserve the health of the children, and second, to afford them physical comfort—two indispensable conditions of proper education.

Extent of Its Adoption.—Medical inspection in schools was first made compulsory in Austria in 1873, and was subsequently adopted in Sweden, Argentina, Hungary, Norway, Switzerland, Servia, France, Japan, Roumania, Russia (1899) and Great Britain (1907). In Germany and in the United States it is done locally and is not compulsory.[2] According to the report of the Child Hygiene Department of the Russell Sage Foundation of 1911, 1038 cities in the United States had medical school inspection.

Reasons for Its Wide Introduction.—The justification of medical examination lies in the fact that large numbers of school children are found to be suffering from physical defects of one kind or another, and that these defects hinder the progress of the child in its growth and in its studies.

PHYSICAL EXAMINATION FOR NON-CONTAGIOUS DEFECTS.

Number examined	1911 230,243		1910 266,426		1909 231,081	
	Found Defective	Per Cent.	Found Defective	Per Cent.	Found Defective	Per Cent.
Needing treatment	166,368	72.2	196,664	73.8	172,112	74.4
Found with defects other than teeth alone	75,857	32.9	101,602	38.1	102,150	44.2
With defects of teeth as only defect	90,511	39.3	95,062	35.6	69,962	30.2
With defective vision	24,514	10.6	29,634	11.1	30,408	13.1
With defective hearing	1,491	.6	1,519	.5	2,340	1.0
With defective nasal breathing	27,316	11.8	40,946	15.3	43,393	18.7
With hypertrophied tonsils	34,639	15.0	50,012	18.7	50,934	22.0
With defective nutrition	5,845	2.5	8,691	3.2	7,249	3.1
With pulmonary disease	483	.2	656	.2	744	.3
With cardiac disease	1,661	.7	2,370	.8	1,503	.6
With orthopedic defects	1,190	.5	1,683	.5	1,461	.6
With chorea	861	.3	951	.6	940	.4
With defective teeth	135,843	58.1	164,250	61.6	131,747	57.0
With defective palate	85	....	153	....	324	.1
With tuberculous lymph nodes	418	.2	759	.2	810	.3
Reported treated[4]	65,150	86.0	64,861	64.0	84,968	83.0

[4]These figures do not include children reported with defective teeth as the only defect, whose treatment consisted only of instruction in oral hygiene.

Statistics of Defects Found in New York Public School Children.—Of the total number of 231,081 school children examined for non-contagious defects in 1909, 172,112, or 74.4 per cent., were found to be needing treatment. About 60 per cent. of children suffer from bad teeth, 33 per cent. from defects other than teeth alone, 12 per cent. from defective nasal breathing, 15 per cent. have hypertrophied tonsils, etc., as seen from the accompanying table.[3]

Children Suffering from Communicable Diseases of Eye and Skin.—Of a total of 674,667 children in public schools, 286,591, or 42 per cent., were found suffering from communicable eye and skin diseases in 1910. More than a half are pediculosis cases, and 16 per cent. trachoma.

The following is a table (from records of the Health Department) showing distribution of these cases by diseases for the years 1909-1911.

COMMUNICABLE DISEASES OF THE EYES AND SKIN.

Year	Trachoma	Conjunctivitis	Ringworm	Impetigo	Scabies	Favus	Pediculosis	Molluscum Contagiosum	Miscellaneous	Total
1909	45,615	49,807	7,788	12,516	4,006	409	151,585	154	14,621	286,591
1910	20,888	26,855	9,052	2,251	.....	290	153,797	143	41,660	263,828
1911	15,245	25,941	4,083	7,713	1,768	220	152,045	96	11,660	248,771

Elements of the Health Conditions in Public Schools.—The health work in the schools consists in:

1. Medical examination of school children for contagious and non-contagious defects.
2. The elimination of children found suffering from contagious diseases.
3. Calling of parents' attention to the defects of their children.
4. Direction of children to physicians and dispensaries.
5. Following the children up to see whether they received treatment.
6. Treatment in schools.
7. Instruction in personal hygiene.
8. Physical training instruction.
9. Segregation of backward and mentally defective children.
10. Sanitary care of schools.

[1]This report has been prepared by E. H. Lewinski-Corwin, Ph.D., Executive Secretary of the Committee, and has been closely supervised and edited by members of the Committee, who are also responsible for the summary and recommendations: Dr. Charles L. Dana, Chairman; Dr. James Alex. Miller, Secretary; Dr. Algernon T. Bristow, Dr. Haven Emerson, Dr. Arpad G. Gerster, Dr. S. S. Goldwater, Dr. Thomas W. Hastings, Dr. L. Emmett Holt, Dr. John H. Huddleston, Dr. Abraham Jacobi, Dr. Theodore C. Janeway, Dr. Egbert Le Fevre, Dr. Samuel Lloyd, Dr. Frank S. Meara, Dr. W. Gilman Thompson, Dr. Linsly R. Williams, Dr. Philip Van Ingen.

[2]Dr. A. P. Knight, in "Publication" No. 4, issued by the Medical Faculty of Queens University, Kingston, Ontario.

[3]Monthly Bulletin of the Dept. of Health for April, 1912, p. 101.

The administration of the school health work, as outlined, is in this city, as in almost all of the larger American cities, carried on by the Department of Health and the Department of Education jointly, the work of one, however, not overlapping the work of the other.

1. *The Bureau of Child Hygiene: Its Duties.*—The work which the Health Department does in this connection is under the care of the Division of Child Hygiene, created in August, 1908. Medical inspection and examination of school children is only one of the multifarious duties of the Division. At the present time the activities of the Division in addition to medical inspection of school children are:

1. The control and supervision of midwives.
2. The reduction of infant mortality.
3. The supervision of foundling babies boarded out in homes.
4. The inspection of institutions harboring dependent children.
5. Inspection and sanitary supervision of day nurseries.
6. The enforcement of that part of the Child Labor Law which relates to the issuing of employment certificates.
7. The vaccination of school children.

Organization of the Division of Medical School Inspection.—The organization for the medical inspection of school children is as follows: Director, 1 assistant director, 5 borough chiefs, 15 supervising inspectors, 76 school medical inspectors, 1 superintendent of nurses, and 172 nurses. The duties of the director, the assistant director, the borough chiefs and the superintendent of nurses are not confined to school work exclusively.

The Bureau of Municipal Research criticized the dual system of supervision—one for physicians and one for nurses, as carried on up to Jan. 1, 1912.[1] Since Jan. 1, 1912, the nurses and their supervisor have been under the direction of the Supervisor of Inspectors, in whom all responsibility is centered.

Statistics of the Work of the School Physicians.—For purposes of school medical inspection, the Bureau of Child Hygiene has divided the city into 76 districts, the size of which is based on the number of children in the schools. One medical inspector is assigned to duty in each district. Where the schools are smaller, more of them are found in one district. In Manhattan, Bronx and Brooklyn the number of schools to every inspector averages from 4 to 5, in Richmond the average is 10, and in Queens it is 13. The average number of children to each inspector varies from eight to nine thousand in Brooklyn and Queens and about four thousand in Richmond.

Amount of Time and Work Required of Each Inspector.—There is no definite daily amount of time or work required of the inspectors. On the average, however, they work from 3 to 4 hours daily. They are not required to make a definite number of examinations a day, but they average from 20 to 22 a day each. The frequency of visits to one school depends on the number of schools assigned to each inspector, and how widely the schools are separated from each other. The inspector spends two days in each school in rotation.

Frequency of Examinations.—Each child is examined upon entering school and again before graduation and in addition every two and a half years, on the average, in the interim.

The examinations are made chiefly for the various noncontagious or more or less chronic physical defects of the eye, ear, throat, nose, heart, lungs, and joints. The child's clothing is not removed at the examination. One of the reasons for this, given by the New York Department of Health officials is that parents would object to having examinations of girls made by school physicians. Owing to this, as well as to the fact that the length of time allotted to each child is a few minutes at the most, the examinations are not thorough.

Accuracy of Examinations.—How accurate the examinations have been since the formation of the Child Hygiene Division, August 26, 1908, we have no means of telling. In 1908 the Bureau of Municipal Research, in co-operation with the Department of Health, conducted an inquiry into the methods and results of the examinations. It was found then that the inspectors differed widely in the number and kinds of defects found in the same children examined. Discrepancies as great as between 30 and 92 per cent. and between 43 per cent. and 84 per cent. occurred in the same schools, while the variation in percentages found defective in the whole of Manhattan was from 100 per cent. to 32 per cent. and from 100 per cent. to 18 per cent. in Brooklyn.[2]

Statistics of the Work of School Nurses.—The nurses' districts are assigned similarly to the physicians' districts, on the basis of school population, and its density. In Manhattan and the Bronx two is the average number of schools assigned to a nurse, three in Brooklyn, seven in Queens and five in Richmond. The average number of children to each nurse is: In Manhattan, 4100; Bronx, 3978; Brooklyn, 3965; Queens, 3902; Richmond, 1878; New York City, as a whole, 3968.

The nurses are on duty from 9 to 4 every day with an hour off for lunch, their working day thus being six hours. They make routine examinations, recommend children for exclusion, notify the parents of the defects of their children, instruct the children in personal hygiene, treat minor skin diseases, and follow up cases in the homes.

Details of the Nurses' Work.—1. Exclusion of contagious disease cases. Beginning Jan. 1, 1912, the duty of exclusion of children from school for major and all minor contagions was assigned to the nurse, in accordance with the plan suggested by the Bureau of Municipal Research and tested successfully by the Department of Health, for several months before adoption, in a number of schools.

In the morning the nurse examines all the children referred to her by teachers as suspicious. If she finds any symptoms of a contagious disease she so informs the principal, who excludes the child from the school. In cases of sore throat she takes cultures and excludes the child for a period till the report of the Laboratory is given. If the culture is negative, the child is returned to school, otherwise the case is turned over to the Division of Contagious Diseases. In cases of measles, scarlet fever, chickenpox, whooping cough, erysipelas, mumps, and tuberculosis the nurse, after excluding the child, notifies the school medical inspector, who visits the case at home and makes the diagnosis. From the accompanying table showing the number of exclusions for five corresponding months of last year, and this year, it is evident that nurses exclude more unnecessary cases than physicians. Cases in the Borough of Manhattan are given below, as the complete records for 1911 are available for this borough only.

In cases of scarlet fever 63.8 per cent. of nurses' exclusions were true cases, while 66.6 per cent. were true in cases of physicians'; in measles 56 per cent. were true with nurses and 85 per cent. with physicians; in the case of mumps 78 per cent. were true while 100 per cent. were true with physicians. The small number of true cases of diphtheria on both the physicians' and nurses' diagnoses is due to the fact stated already, that all sore throat cases are excluded. As a rule the nurses are very cautious and exclude all the suspected cases.

The Division of Child Hygiene is of the opinion that the efficiency of nurses in diagnosing contagious diseases

EXCLUSIONS FROM SCHOOL ON ACCOUNT OF MAJOR CONTAGION

	JANUARY 1 TO JUNE 1, BOROUGH OF MANHATTAN					
	1911			1912		
	Total Number of Exclusions	True Cases	Per Cent.	Total Number of Exclusions	True Cases	Per Cent.
Diphtheria	233	34	14.5	165	30	18
Scarlet fever	48	32	66.6	47	30	63.8
Measles	203	172	85	221	124	56
Chickenpox	343	334	99	580	497	85.7
Whooping cough	81	81	100	81	57	71
Mumps	597	597	100	598	408	68
Erysipelas	1	1	100	2	1	50
Tuberculosis	89	89	100	13	12	92
TOTAL	1,595	1,340	.....	1,707	1,159	.....

[1] Report of Bureau of Municipal Research, September, 1911, p. 17.

[2] Cf. Report of the Bureau of Municipal Research, "A Bureau of Child Hygiene," 1908, p. 11-14.

is probably as high as that of physicians, but that they are much slower in their work. It is, however, impossible to determine accurately the comparative rapidity of the work of physicians and nurses from the data at the disposal of the Division of Child Hygiene. The experiment is too new to warrant any positive opinion on its expediency. The charge made that the contagion bred in the schools this year was due to the fact that nurses were making exclusions cannot be proven nor does it seem at all probable.

2. Routine examination of children.—Each classroom is, on the average, examined once a month by the nurse. Individual instruction in personal hygiene is given to children, and, in cases of communicable eye and skin diseases, notices to parents are sent out informing them of the condition of the child, and asking to have him treated.

3. Treatment of communicable skin diseases.—If no treatment is obtained, and the child's family is too poor to employ a physician, the nurse treats such cases in the school, following a procedure outlined by the Department of Health. A copy of the instructions to nurses in this respect is found in the appendix to this report. As to the efficacy of this measure, the Monthly Bulletin of the Department of Health for April 1, 1912, says (p. 100): "In this connection it is interesting to note, that the employment of nurses for the treatment in the schools of contagious diseases of the eye and skin has resulted in a marked decrease in the number of exclusions necessary. In 1903, 57,665 children were excluded on account of contagious diseases of the eye and skin, while in 1911 it was necessary to exclude 3361."

From the point of view of the scholastic standing of the children and the diminution of truancy, this decrease in exclusions is a distinct gain.

4. Non-contagious defects.—The non-contagious defects are never treated in schools. Nurses are under positive orders from the Department of Health not to give any treatments in non-contagious diseases, except first aid in emergencies. The nurse tells the children what is the nature of their defects as diagnosed by the medical inspector, and advises them to see a physician. If this fails, she sends for the parents and explains the situation to them, or as the last resort, she visits the homes of the children for the same purpose.

5. The follow-up work.—It is the nurse's duty to see that all the defective cases receive treatment and that all the excluded cases are under the care of physicians. This follow-up part of the medical work in the schools is the most important one. Unless the discovered defects are remedied, medical examinations are an unnecessary expense to the community. Much more stress should be laid on the follow-up work than is being done at the present time, owing to the insufficiency of the staff of nurses to do it thoroughly in each case. In view of the great prevalence of defects among the school children, the number of children per nurse is at the present time much too high.

The Cost of Medical Inspection of School Children.—For the year 1911, the costs of the work are given by the Department of Health as follows:

1. The cost of inspection for the detection of contagious diseases amounted to $0.57 per 1000 children inspected.

2. The cost of each physical examination amounted, on an average, to $0.00⁷ and

3. The cost of the home visits of the nurses averaged as high as $0.60 for each case.

STATISTICS OF THE TOTAL COST OF THE SCHOOL MEDICAL WORK COMPARATIVELY FOR 1911 AND 1912

1911 School Work	
126 medical inspectors @ $1,200 per annum	$151,200
134 nurses @ $900 per annum	120,600
260	$271,800
1912 School Work	
76 medical inspectors @ $1,200 per annum	$91,200
172 nurses @ $900 per annum	154,800
248	
6 additional inspectors, *i.e.*, supervisors @ $1,200 per annum	7,200
10 additional nurses, *i.e.*, supervisors, @ $900 per annum	9,000
4 medical inspectors (for physical examination of children for employment certificates) @ $1,200 per annum	4,800
	$267,000

Cost of school work year 1911, $271,800; 1912, $267,000; difference, $4,800.

Advantages of the 1912 System Over That of 1911.—1. *Economy.* In 1911 there was a force of 260 nurses and inspectors at a cost of $271,800. In 1912 the force was decreased to 248 (that is, the force of those actually working with the school children), the cost being $267,000. That is, the actual gain in economy is $4,800

2. *Increased number of working hours.*—It was thought that there would be a marked increase in the number of hours given to the work as the number of nurses was increased and they were expected to work seven hours a day, while physicians work only four hours. They actually do work 6¾ hours a day, and the inspectors work 3¾ hours a day, so that the total gain by this substitution proves to be 69 hours a day.

126 x 3¾=472½ hours given by medical inspectors last year.
134 x 6¾=904½ " " " nurses " "

1377 " Total

76 x 3¾= 285 hours given by medical inspectors this year.
172 x 6¾=1161 " " " nurses " "

1446 " Total
1377

69 " a day difference

3. *Increase in physical examinations.*—Under the present system, though the number of inspectors is only 76, the number of inspections made during the first five months of this year was 19,484 larger than it was during the corresponding period of last year with 126 inspectors. The number of physical examinations that the inspectors were able to make this year has been increased from 1169 to 2195 per inspector, which is almost 100% gain.

During 5 months (Jan. 1-June 1), 1911—*i.e.*, in 100 days—126 inspectors made 147,313 inspections, or about 12 a day.

During the same period in 1912, 76 inspectors made 166,797 inspections, or about 20 to 22 a day.

4. *Increase in class inspections.*—The number of inspections of children was 2,244,696 last year and 2,837,038 this year, making a gain of 581,342.

5. *Increase in number of treatments for physical defects received by children owing to stronger pressure by nurses.*—The number of children receiving treatment for physical defects was 74,864 in 1911 and 82,158 in 1912, making a gain of 7,294. The larger number is due to the larger number of nurses.

6. *Increase in total number of home visits by nurses.*—The number of home visits by nurses, which is the most essential part of efficient school work, was, owing to an increase in the staff of nurses, larger by 10,492 cases during the period from January 1 to June 1 of this year than it was during the corresponding period of last year.

	1911	1912
Number of nurses on duty	134	172
Number of home visits	95,919	106,411
Average number of calls to each nurse	715	612

Disadvantages of the 1912 System.—The following is a summary of the reports of four borough chiefs, 15 medical supervisors, and 14 supervising nurses with regard to the present system of medical inspection of school children.

1. *Morning Inspection for Contagious Diseases.*—The reports are unanimous in disapproving of nurses diagnosing and excluding contagious cases, for the following reasons:

(1) Their training has not fitted them for it physically or mentally.

(2) They are overworked and unable, for lack of time, to perform their other duties, especially home visits, which is the essential part of their work. According to the statement of the Board of Health, based on 300 cards selected at random, the amount of time devoted to home visits last year averaged three hours per nurse per day; this year the average is 43 minutes.

(3) There is a duplication of work, because the inspectors have to visit each case excluded.

(4) The nurses exclude many false cases, thereby causing the inspectors to waste much time in making unnecessary visits. From the table on page 9 it can be seen that in 100 days they excluded 1,505 cases, or 16 cases a day, for 150 schools, and in 1912, 17 cases a day for 150 schools, which would seem to take not very much time.

(5) The medical inspector is not able to keep in close touch with the school on account of the infrequency of his visits, so the "school physician" no longer exists and the nurse can not take his place. Principals and parents naturally do not have the same confidence in her judgment that they have in the physician's.

3. *Physical examinations.*—It is claimed that the in-

crease in the number of examinations made under the present system is not as large as was expected. This is attributed to the many interruptions by nurses and principals and to the fatigue of making examinations for three hours at a stretch. This assertion has no basis in statistical facts, which prove that the average number of examinations per inspector has almost doubled.

4. *The follow-up work.*—Although the total number of home visits of nurses has increased, the number of visits per nurse decreased, from 715 during the first five months of last year to 612 during the same period of this year.

5. *Consultations with parents.*—The consultations with parents in schools which the physicians were having and the home visits which, up to January 1, 1912, the physicians were making have been discontinued because it was impossible to carry them on under the present system.

6. *Employment certificates.*—Last year the children wishing to apply for employment certificates were referred by the principal to the school physician for physical examination. Owing to the infrequency of the physician's visits this plan has had to be abandoned and the children referred to the borough office of the department, while extra inspectors have had to be detailed to these offices to perform this work.

7. *Tuberculosis.*—The detection of tuberculosis in school children is a matter of vital importance. Last year the inspectors during their morning and routine inspections found many cases requiring immediate exclusion and care. This year the nurses are overlooking these cases, and in any event are unable to make a diagnosis. The results may be seen in this statement:

Number of cases of tuberculosis excluded from schools in Manhattan, January 1 to June 1, 1911, 142; the same period, 1912, 17.

8. *Clerical work.*—In all the reports there are complaints about the time taken for keeping records, and special bitterness is shown against the copying of the health record of the child, which is kept on file by the nurse in the school and copied by her on the class card—an absolutely unnecessary work. The class card goes with the child to different schools and is always on file in the nurse's office.

Cooperation of Parents.—The cooperation of parents in the school medical work is very satisfactory on the whole, although not as effective as it was during the first year. At that time the parents believed treatment to be compulsory. Now they are aware that they need not have their children treated unless they wish to. This knowledge detracts from good results. In many instances it was found that while parents were willing to have their children treated, they were unable to give the time necessary for attendance at a dispensary for that purpose. At a written request of the parents a nurse accompanies the child to a dispensary.

Cooperation of Physicians and Dispensaries.—Private physicians and dispensaries lack cooperation and take little interest in the work, which is detrimental to efficiency, as the Department of Health considers a case closed when it receives notice from a physician that the child is under his treatment. The Department does not question the fact that a child is under medical care if a statement to this effect signed by a physician is presented. All the children presenting certificates of treatment are reexamined by the medical inspector, who notes on the child's record and forwards to the Department of Health a statement as to whether, in his opinion, such treatment is adequate. There is no law by which the Department of Health can enforce any further action. The Department has information that some physicians take advantage of this and carry on a trade in certificates sold at 10 cents apiece. A certain druggist is said to be using pads signed by a physician and selling them as certificates for school purposes. He is said to advertise these certificates at moving picture shows. Another physician in the Bronx had certificates printed and sold them at 25 cents apiece.

Out-patient departments of hospitals, dispensaries and clinics to cooperate very little in reporting the results of treatments, although they have been asked many times to do so and special blanks for reporting were distributed among them. The need of free dental clinics is very urgent, as there is a great lack of free dental facilities for the poor.

Cooperation of Principals and Teachers.—In exclusion cases the cooperation is perfect, the principals excluding children whenever they are referred for such purposes by either the inspector or the nurse.

In recommending children to the inspector or the nurse for special examination, cooperation depends largely upon the interest of the teacher or principal in the work. The teachers have so many other duties to attend to that they find little time to devote to inspection of children or to assisting the nurse. They do, however, recommend cases for special examination in instances where marked defects exist.

In helping in follow-up work and in application of corrective measures advised by the inspector the efficiency of cooperation reduces itself again to the personal equation with principals and teachers. All depends on the interest of the individual teacher and principal. In the four downtown schools which were visited the principals showed great interest in the work, and there was perfect cooperation with the work of the nurses.

Results Obtained by the Division of Child Hygiene.—The department reports that during 1911, according to their records, 86 per cent. of the children found to be suffering from defects other than bad teeth were placed under treatment. The following is the record of treatment:[1] (58 per cent. of the cases were reported as under treatment by private physicians.)

Kind of Cases Treated	Number Treated by Private Physicians	Number Treated at Institutions or Dispensaries	Total
Medical	20,621	11,067	31,688
Surgical	11,835	10,431	22,266
Glasses	5,530	5,666	11,196
TOTAL	37,986	27,164	65,150

The number refusing treatment was reported as 6,431 and the number discharged from school as 5352.

II. *Responsibility of the Department of Education in the Matter of the Physical Condition of the Child.*—The Department of Education is at present responsible for three factors in the health condition of the school children; and these are: (1) The sanitary condition of schools; (2) Instruction in physical training, and (3) the segregation of backward and mentally defective children.

The first matter, the sanitary condition of schools, is under the control of three committees of the Board of Education: The Committee on Buildings, which has charge of the planning of the buildings, the placing of furniture, and determining the character of the ventilating plant; the Committee on the Care of Buildings, which has charge of the running of the plants and of the janitors; the Committee on Supplies, which has to do with the furnishing of all class room supplies.

The instruction in physical training and the care of backward and mentally defective children are under the City Superintendent of Schools. There is no concentration of all the activities of the Department of Education pertaining to health; there is no uniformity of policy, as the administration is scattered; and there is no localization of responsibility. Orders with regard to health matters travel from committee to committee, undergoing many changes on the way. The janitors, who are theoretically under the orders of the principals, form an independent body under a supervisor of janitors. Instead of being hired to keep the schools in good condition, the schools are farmed out to them on contract. They receive a lump sum of money for which they agree to keep the school in good condition. The results of this system are unsatisfactory. The advisability of changing the system is being considered by the Special Committee on Schools of the Board of Estimate and Apportionment.

Heating and ventilation in the schools of New York City are so poor as to be a matter of great concern. The subject has received much attention on the part of various civic organizations and some studies on heating and ventilation have been made.

There is no consensus of opinion as to the best system of ventilation, but experience has shown that there are serious defects in the artificial plants prevalent in the schools to-day, and many are advocating a return to the old-fashioned method of ventilating solely by open windows. It cannot be said, however, that the system of ventilation by artificial means has had a fair trial, because in most cases the plants have been under the management of janitors who are not fit for handling this kind of delicate machinery. In one or two instances, where the apparatus was intelligently used, the results were found to be satisfactory. But it is the opinion of those people who have had success with the ventilating plants that at present they must be expensive in order to yeild good results.

[1]Monthly Bulletin of the Department of Health for April, 1912 p. 103

Mrs. S. S. Wise visited a number of schools for the Public Education Association and found that in most of them the ventilating systems were out of order, and in some of the rooms the temperature was from 75° to 80° F.

The committee has not inspected the sanitary conditions of the grammar schools, but it has made an investigation of the high schools, which may be taken as typical cases, because they are under the same management as the other public schools.

1. *Sanitory Conditions of the High Schools.*—(1) System of ventilation.—Only one school reports ventilation by doors and windows, three report direct and indirect ventilation, and the rest have the mechanical apparatus.

(2) Average dimensions of class rooms and average number of students per room.

Feet	Number of Pupils	School
25 x30	30	Richmond Hill
30 x35	35	Bushwick
20 x25x13½	32	Manual Training
26 x26	36	Stuyvesant
21 x25	38	Wadleigh
22 x25	35	Morris
21 x25	33	Erasmus
22 x28	38	Eastern District
28 x22	30–35	Commercial
26½x20½	..	DeWitt Clinton
25 x25	41	High School of Commerce

The size of classes in other schools varies so much that no average can be stated.

(3) Kind of desks used.—Six schools have adjustable desks, others use the non-adjustable kind.

(4) Windows.—There is an average of three windows to a classroom.

(5) Cleaning.—Most of the schools use damp or oiled sawdust for sweeping and cloths or feather dusters for dusting. In the majority of cases the floors and windows are washed once a month, in some only two or three times a year.

(6) Temperature and Humidity.—The average temperature of the classrooms is 68°. In none of the schools is there a test for humidity. In many the heating and ventilating systems are not working properly.

2. *Physical Training.*—No study was made by the committee with reference to the physical training of children in the grammar schools. Inquiries with regard to high school gymnasium equipment and attendance were made by the committee in connection with a study of medical inspection of high school students, and the following is a summary of the conditions found.

The gymnasium equipment in most schools is fairly adequate. Only one, the High School of Commerce, has a swimming pool.

The number of shower baths varies from 1 to 24, with an average of 10 to a school. Seven have none.

Only one school has special exercise rooms for physical defectives.

All the schools except one report that a number of talks on hygiene are given during the year by physical training, or biology teachers, or both. Students are required to pass examinations in hygiene in some of the schools, but not in all.

Gymnastics are generally required twice a week and attendance is compulsory. In all but one school there are periods after lunch. Most of the schools require gymnasium suits for girls but not for boys, the time being too short to allow for change.

The ratio of gymnasium instructors to pupils is, on the average, 1 to 500. At the Curtis High School there is one instructor to 986 students.

3. *Study and Provision for Backward and Defective Children.*—The worst cases of backwardness are selected by the principal and reported to the inspector on graded classes, a physician who visits in various schools and examines mentally and psychologically. If there are enough of these children found in one school, they are put into classes by themselves and a special teacher is engaged. These special teachers are under the direction of one superintendent.

There is a good deal about the system that is lacking. In the first place, the principal does not know "backwardness" in its various phases. Only the worst cases have been examined and segregated, while there are many border-line cases which get no special treatment or instruction. There should be more physicians engaged in this work—one cannot do it satisfactorily. At present the children receive no medical care.

Medical Inspection in High Schools.—With regard to medical inspection in high schools the following is a summary of the facts obtained, in answer to a questionnaire sent out to all the high schools of the city, some of which were visited in this connection by the Executive Secretary of the Committee.

1. *For contagious diseases.*—Of the eleven schools reporting medical inspection for contagious diseases, examinations are made by physicians, in five, and by teachers or nurses in the others. In a few instances inspections are made daily and in the others only in suspected cases. Most of the schools keep no records of the number of cases detected. One, however, reports from 25 to 50, and another 31 for last year. A number of schools send the suspected cases home, only two reporting that the Board of Health is notified. On the whole, responsibility is left with the class teachers, who are often indifferent and ignorant in this respect.

The daily list of contagious sick reported to the Board of Health is too long for the teachers to go over every morning, and as a rule little attention is paid to it.

2. *For vision and hearing.*—Five schools report that examinations take place either by a physician or physical training teachers once a year or once a term. All others report that no examinations are made. Only three of the schools reporting examinations keep records, and in them 710 cases were found defective last year. In all of the schools where examinations are made, the pupils are advised to consult a physician or, go to a dispensary. Only three schools require the students to bring from their parents an acknowledgment of the school notice as to their defects.

3. *For defects other than those of eye and ear.*—In seven schools no examinations are made. In two only are general examinations made by a physician. In others they are made by physical training teachers. In one school the examination applies to candidates for athletics only. In the twelve schools reporting examinations, some inspect the students once or twice a year, some once during the school course. One school reports that examinations are made for teeth; another (Wadleigh), where a physician is employed permanently, inspects for teeth, glands, nose, throat, heart, lungs, back, skin, nervous disorders, digestion, and nutrition. Other schools do not specify the kind of examinations made. No special rooms for examinations, outside of the offices of the physical training teachers, are provided. Records are kept in all but one school. Six schools notify the parents of the defects and advise them to have the children treated by physicians and dispensaries. Seven schools give corrective gymnastic exercises.

The number of remediable defective cases found last year was 764 out of a registration of 7,255.

Only two schools examine for tuberculosis, and three for parasitic skin diseases. Only one school (DeWitt Clinton) keeps a record of what is being done after the defects are pointed out to the students and their parents. This school reports 59 cases of flat foot, 59 cases of scoliosis, 8 cases of hernia, 27 of bad teeth, and 8 miscellaneous ailments rectified

Need of Medical Inspection in Parochial and Other Free Schools.—There are more than 209 parochial and other free schools existing in this city, which are either entirely out of the pale of the Department of Health control, or the control is minimized, owing to the lack of funds for carrying on this work. The Catholic parochial schools alone have, according to the statement of the superintendent of the schools, made at one of the conferences on the health condition of children arranged by the committee, a registration of about 130,000. The schools do not have their own physicians, and the health control existing in them is very unsatisfactory.

Respectfully submitted,

E. H. Lewinski-Corwin,
Executive Secretary of the Public Health,
Hospital and Budget Committee of the
New York Academy of Medicine.

Appendix.

Department of Health, Division of Child Hygiene, Borough of Brooklyn.

Instructions to nurses.—The following methods will hereafter be used in treating children sent to the nurse by the Medical Inspector of schools:

Pediculosis.—Saturate head and hair with equal parts of kerosene and sweet oil, next day wash with solution of potassium carbonate (one teaspoonful to one quart of water), followed by soap and water.

Favus, Ringworm of Scalp.—Scrub with tincture of green soap, cover with flexible collodion. Severe cases: Scrub with tincture of green soap, paint with tincture of iodine and cover with flexible collodion.

Ringworm of Face and Body.—Wash with tincture of green soap, and cover with flexible collodion.

Scabies.—Scrub with tincture of green soap, apply sulphur ointment.

Impetigo.—Remove crusts with tincture of green soap; apply white precipitate ointment.

Molluscum Contagiosum.—Express contents, apply tincture of iodine on cotton tooth pick probe.

Conjunctivitis.—Irrigate with solution of boric acid.

SUMMARY.

The matters pertaining to the health and comfort of the school children are confided partly to the care of the city Health Department and partly to that of the Department of Education. The Health Department does this work through the Bureau of Child Hygiene; the Department of Education through a number of committees.

I. *The Department of Health.*

1. The work of the Child Hygiene Division is carried on by physicians and nurses.

(1) The duties of the physicians.—The physicians make physical examinations, diagnose suspected contagious disease cases excluded from school, make absentee and other home visits.

(2) The duties of the nurses.—The nurses exclude suspected contagious disease cases, make class inspections, and do follow up work in the homes.

2. The present system differs from the original plan in several particulars.

(1) The nurses exclude suspected cases daily, instead of the physicians who used to visit the assigned schools every morning for that purpose.

(2) The routine class inspections are made by the nurse once a month instead of by the physician once a term as formerly.

(3) The physician visits each school for two days in succession, at an average interval of about ten days, making physical examinations and visiting the excluded and absentee cases, while last year he devoted only the time that was left after the morning inspections to physical examinations in the school last visited.

3. Advantages of the present system.

(1) It has brought about some economy of money.

(2) It has markedly increased the total working hours of the staff by substituting nurses working 7 hours for physicians working 3 to 4 hours daily.

(3) It resulted in an increase of physical examinations made by inspectors almost double that of last year.

(4) The number of treatments for physical defects received by children has increased, due to the better supervision by the increased corps of nurses.

(5) The total number of home visits made by nurses has increased, although the average number of visits per nurse has decreased.

4. Disadvantages of the present system.

(1) The dissatisfaction on the part of some physicians, nurses and school principals with the innovation of having nurses exclude children for contagious diseases.

(2) The loss of school work occasioned by unnecessary exclusions due to faulty diagnosis.

(3) The duplication of work caused by the inspectors visiting excluded cases at their homes to confirm diagnoses.[1]

(4) The infrequent visits of the medical inspector to the school instead of former daily visits.

(5) The discontinuance of physicians' consultations with parents.

(6) The discontinuance of medical examinations for "working papers" at the school.[2]

(7) The overlooking of cases of tuberculosis by nurses in class inspections.

(8) The markedly decreased amount of time devoted to home visits by nurses.

(9) The diminished control of the contagious eye and skin diseases, especially trachoma.

5. The per cent. of New York school children needing treatment for physical defects is over 70, about 40 per cent. are found with defects other than teeth, and as large a number suffer from communicable eye and skin diseases.

6. The proportion of children to one nurse is 3,968, and to one school physician 8,124.

7. The physical examinations are not thorough. The children's clothing is not removed.

8. There is almost a total lack of free dental facilities for poor children.[3]

9. The cooperation of parents in following the advice of the physicians is fairly satisfactory.

10. There is very little cooperation on the part of medical practitioners and dispensaries.

11. The cooperation of teachers and principals varies greatly, according to the individual school. It is largely a matter of the personal interest of the teachers and principals.

12. The high schools have almost no medical inspection or supervision for their students.

13. The parochial and other free schools have no, or very little, medical supervision.

II. *The Department of Education.*

1. The control of the factors affecting the health of school children which are under the care of the Department of Education are scattered among a number of committees, so that there is no concentration of responsibility, which interferes with efficiency of administration.

2. The various matters pertaining to the health of the school child for which the Department of Education is responsible are as follows:

(1) The sanitary conditions of the school rooms, *i. e.* cleanliness, light, ventilation, and temperature.

(2) Proper janitor service.

(3) The detection of and provision for backward and defective children.

(4) Intelligent cooperation on the part of the teachers in the detection and correction of physical or mental defects.

(5) Physical training.

3. With the exception of physical training the control of these factors influencing the health of the child is at present unsatisfactory.

4. Physical training in the schools and the gymnasium equipment may be considered satisfactory.

RECOMMENDATIONS.

1. The present system of medical inspection in the schools by the Department of Health has not had a fair trial and should be continued for another year at least, before any definite judgment as to its efficacy can be safely reached. Meanwhile the possibility of an arrangement by which the physician, rather than the nurse, could see the suspected cases every day and also have frequent consultations with parents should be seriously considered.

2. In addition to their present work, the school inspectors should make a routine inspection of every class at the beginning of each term in order that the control of tuberculosis and some contagious eye and skin diseases may be stricter.

3. The average number of children per nurse and per inspector is too large at the present time. Efforts should be made to make the budget estimates on a basis of school population. In view of the prevalance of physical defects, the average proportion at the present time should be one nurse to every 2,500 children and one physician to every 7,500.

4. Physical examinations should be made more thorough and more frequent. The children, or at least the boys at first, should be stripped to the waist at physical examinations. The present plan of examining the child when it enters school, when it graduates and once in the interim should be changed. A child should be examined when it enters school and then every two years. The examination just before graduation does not have any particular importance.

5. In the nurses' work special emphasis should be laid on the follow up work. The burden of clerical work should be lightened. The unnecessary copying of the nurses' and physicians' record on the class card of the child should be eliminated.

6. The salaries of the nurses should be graded. Instead of their receiving, as a uniform wage, $900 a year, the initial wage should be $800, after a certain period of time increased to $900 and then again to $1,000. The gradation will act as a stimulus to efficient work.

7. Medical inspection should be instituted in the high schools which are entirely deprived of it at the present time.

8. The city should appropriate money for the enlargement of the force of the Child Hygiene Department so as to enable them to undertake the inspection of parochial and other free schools.

9. The medical practitioners and the dispensaries should be impressed with the importance of this work to the com-

[1] This is not actually very great, as during the 5 months, Jan.-June, 1911, 16 cases were excluded daily from 150 schools in Manhattan, while in 1912 during the same period the daily average was 17 for 150 schools, or 1 case to every 4 or 5 inspectors.

[2] 5 and 6 entail considerable loss in the efficiency of the system.

[3] Dr. S. A. Knopf made an investigation of the dental facilities of the dispensaries of New York City for the Public Health Committee of the City Club. He found that over 16 dispensaries have dental departments with the average number of dentists in attendance 1-3. In only three dispensaries are special hours for school children arranged so as not to conflict with school hours.

munity and be urged to cooperate. Provision for dental clinics should be made, this being done if possible through the existing dispensaries.

10. In the Department of Education the responsibility for the conditions affecting the health of the school child should be concentrated. An improved organization should be worked out, which would bring under the jurisdiction of one committee the sanitary conditions in schools, the instruction of children in physical training and personal hygiene, the segregation and treatment of backward and mentally defective children, the instruction of teachers in matters of hygiene, mental defects and the commoner diseases in children, and cooperation with the Health Department which is a condition *sine qua non* for successful medical work in the schools.

It is suggested that this might be done by extending the scope of the present Division of Physical Training so as to include in it all of these activities, thus forming a special bureau of school hygiene.

11. There is an urgent need of a larger corps of physicians in order to extend the facilities for the examination and study of backward children.

12. An effort should be made to so modify the present system of employing and supervising janitors of school buildings that the principal of each school should have full authority over and responsibility for the work of the janitor.

Society Reports.

AMERICAN THERAPEUTIC SOCIETY.

Thirteenth Annual Meeting, Held at Montreal, Canada, May 31 and June 1, 1912.

(Special Report to the MEDICAL RECORD.)

DR. ALEXANDER D. BLACKADER IN THE CHAIR.

(*Concluded from page 226*)

Sodium Nitrite in Arterial Hypertension.—Dr. WILLIAM H. PORTER of New York read this paper. After some preliminary remarks on the actions of medicinal agents in general and what they could and could not accomplish, he said that sodium nitrite should be classed among those remedies which acted indirectly, for it in no sense tended to remove directly the causes of hypertension in the vascular system. We knew exactly what could be accomplished with it, but the exact modus operandi by which it produced a dilatation of the over-tense vessels was not so clear. It was probable, however, that in the presence of water and HCl in the stomach, it was decomposed, and that its decomposition products, NO_2 and NO, were disengaged in the form of vapors which were irritants and strong oxidizers. These ultimately produced an impression upon the centripetal nerve-endings in the gastric mucosa, which impulse was carried to the vasomotor center and by the centrifugal nerves conveyed from the center of the vascular wall, thereby causing the expansion of the vessels. The slow decomposition of sodium nitrite, as compared with amyl nitrite and nitroglycerin, rendered it far more valuable when a continuous effect was desired; and its continuous action had been demonstrated both experimentally and clinically. Undue vascular contraction was very much more damaging than over-expansion, and from a purely nutritive point of view there was the greater necessity for modifying hypertension; for, without an ample and well-distributed nutritive supply, pathological conditions could not be removed or physiological ones reestablished. Sodium nitrite was, therefore, extremely valuable when employed before the vascular system had become too pathological to be easily influenced by its power to expand the unduly contracted arterioles. The dose should be from one grain up, at frequent intervals, until the arteries softened Under its action, when properly given in suitable cases, the distressing symptom, dyspnea, nature's indication of tissue-starvation, was completely relieved, while oxidation reduction was greatly augmented, as evidenced by the changes for the better in the catabolic products found in the urine. Now, if at the same time, by other measures, the etiological factors were removed and the diet and digestion rendered perfect, the metabolic processes of the body could be, and often were, changed from an absolutely pathological state to one which was perfectly normal. It was the misuse of sodium nitrite, as, for instance, when the arterial system was contracted in connection with an enfeebled cardiac muscle, or when there was engorgement of the general venous system, that had caused many to doubt its efficacy. When, however, employed when and where it could assist nature, we had no more certain and reliable remedy in the whole materia medica.

DR. OSBORNE said that stimulation of the thyroid was indicated, but for this purpose large doses of thyroid were not required. Of the iodides, he preferred sodium iodide, as less irritating than the potassium salt. As to the nitrites, we did get a continuous action from them unless actual Bright's disease were present. Baking had not been mentioned, but he believed it to be one of the best measures at our command. There were times when it was not proper to lower the blood pressure, and therefore we could not make any fixed rule in this regard.

DR. GALLANT said there was one remedy which seemed to have been avoided, namely, water. He had found that sometimes great relief could be afforded by keeping the patient in bed for ten days at a time, without food, and giving him a gallon of water a day.

DR. CROFTON said it was a fact that very small doses of digitalis had the effect of reducing the blood-pressure in cases of intestinal intoxication. He had made a series of experiments in which large and small doses of digitalis were injected into rabbits, and as a result of these he was now accustomed to giving very small doses of digitalis, which he found had the action of the nitrites.

Saturday, June 1—Second Day.

The Proper Treatment of Diabetes Mellitus.—Dr. LOUIS KOLIPINSKI of Washington, D. C., said that the greatest fact in the treatment of diabetes was that it was curable by diet, though that it was curable by diet did not state the principle completely. Rather, it should be said that diet alone was the cure for the disease, and that by any other means this was an impossibility; moreover, that the use of any drug, organic extract, ferment, or enzyme was worthless, and therefore injurious. Gout, obesity, and diabetes were hereditary affections. Diabetes was caused, not by alcohol, but by over-eating to a degree of robustness in a laborer and over-fatness in the sedentary, and every diabetic had a previous habit of obesity or of excessive eating, with a fondness for special foods containing an excess of vegetable carbohydrates. The lesions of diabetes resulted from a permanent increase of glucose in the blood and its persistent discharge with the urine, and the essential cause of this was the destruction, more or less permanently, of the glycogen-making function of the liver. The subject of the disease was permanently bereft of the power of extracting sustenance from sugar and starch. He must henceforth abandon the proverbial staff of life, bread, or death would be the consequence. If, however, a diet were used which contained little or no carbohydrate, but on which he could live and thrive, no evidence of the continued existence of the disease could appear, no abnormal sensation or manifestation would be perceived, and he would live on in continued good health. The diet regularly prescribed by Dr. Kolipinski was as follows: *Breakfast.*—Artificial milk, eggs, ham or bacon, beefsteak, lamb, mutton, fish (fresh, salted, or smoked), raw tomato, a small cup of coffee or tea with cream. *Dinner.*—Artificial milk, clear broth, raw tomato and lettuce with mayonaise dressing, onion, cucumber, pickles; any kind of meat, fish, game, fowl, sausage, tongue, brain, sweetbread; any kind of cheese. *Supper.*—Artificial milk, fish eggs, cold meat, cheese, curds, a glass of cream, tea or coffee with cream. *At bed-time,* if desired.—Artificial milk or a glass of cream. The artificial milk was composed of raw egg, 2 teaspoonfuls of malt extract, and 4 teaspoonfuls of olive oil, which were beaten up together and to which was gradually added, while stirring, one pint of water. It was seasoned to the patient's taste with salt. In three or four months various vegetables and fruits might be allowed, if found not to produce glycosuria. Varied and repeated experience, he said, had proved that this dietary furnished food even more than enough for life, health and comfort. The only medicines used in the treatment were saline purgatives, given when the patient had constipation, hemorrhoids, or the fat habit. The diet mentioned, when partaken of for three or four days, invariably brought the specific gravity of the urine to normal or subnormal, and not a trace of glucose could be detected by the ordinary tests. The diabetes was cured as it were by crisis and the continuance of the cure depended upon the faithful observance of the regimen. Under this method the disappearance of glycosuria was absolute, irrespective of how recent or how old the case, how mild or severe the symptoms, or what the quantity of sugar in the urine. In essential diabetes of man glucose did not come from fat or proteid, whatever might be the case in experimental glycosuria. It was of great importance to guard a cured patient from his former habit of over-eating and obesity, and it might be necessary to reduce the daily

quantity of the artificial milk. The sparing use of alcohol and tobacco need not be prohibited. Having referred to various complications of diabetes, he said that beginning acidosis might vanish and the acids, fat derivatives, found in the urine in advanced cases might likewise be removed together with the sugar, but where evidences of the onset of diabetic coma presented themselves, the case was a lost one. In conclusion, he stated that in the cases treated by him, the previous duration of the malady had been from one month to twelve years, while the ages of the patients varied from young adult life to old age. The results obtained were precise and invariable when the dietary was faithfully adhered to, and it was with confidence that he reiterated the claim that by this method any diabetic free of terminal disease could be speedily and permanently cured.

Dr. CROFTON said he was convinced that a person once a diabetic was always a diabetic. The sugar in the urine might be reduced by diet, but as soon as a carbohydrate diet was resumed it would return. In light cases it was easy to keep the sugar down, but more difficult in the severer ones, as the patient continued to manufacture sugar even if the diet were restricted to meats and fats. Diabetics should be allowed a certain amount of carbohydrate—say, 100 to 200 grams of white bread. To maintain a strict diet for an indefinite period was not only bad practice, but decidedly dangerous, even in mild cases. In the severer ones it was still more dangerous, and therefore we had to strike a balance in the matter. It was more important to keep the patient in good nutritional form than to have his urine free, or comparatively free, from sugar.

Modern Methods of Drug Standardization.—Dr. F. E. STEWART of Germantown, Pa., having stated that his object was to present to the Society a plan for teaching drug standardization which he had recently employed at the Philadelphia College of Pharmacy, reviewed, as a means of gaining an adequate idea of the subject of modern standardization, the standardization work of the U. S. Pharmacopœial Convention and its Committee of Revision during the past two decades. He then went on to say that drug standardization, in its large and comprehensive meaning, consisted in fixing a scientific nomenclature, in providing methods for insuring uniformity in composition, physiological action, and therapeutic effect; in adjusting finished products to fixed standards and keeping them up to the standard for a sufficient length of time to permit their proper application as therapeutic agents; in reducing this knowledge to law and embodying it in such system that we may have a science of materia medica; in embodying this knowledge in text books and teaching it to the medical and pharmaceutical professions, so that it may be used by physicians and pharmacists in their respective arts. Therefore, the importance of drug standardization could not be overrated. He next described chemical standardization, botanical standardization, pharmacological or physiological standardization, the bacterial-count method of standardization used in preparing bacterial vaccines, standardization by testing for the absence of contaminating bacteria, serological standardization, therapodynamic standardization, and clinical standardization. The object of therapodynamic standardization was to determine the activity of individual lots of the drug or preparation tested by observing and, if possible, measuring its effects upon diseased tissues, while that of clinical standardization was to determine the value of the drug as a therapeutic agent. Then followed the tabulated classification of the subject which he had of late been employing in his lectures. Methods for the determination of the identity, purity, and strength of medicinal chemicals, and standards for these, Dr. Stewart said, were well exemplified in the U. S. Pharmacopœia, and the extension of this work to the unofficial materia medica was rapidly being brought about by the American Medical and the American Pharmaceutical Associations. Pharmaceutical assaying might be defined as the art of determining the amounts of medicinally active constituents of drugs and their preparations. As such, it was an exceedingly important link in the chain of progress binding together medicine and pharmacy under the inclusive science of pharmacology. The possibility of deterioration was an important consideration for the therapeutist; but, fortunately, only a few drugs and their preparations were subject to rapid deterioration. Among these were digitalis, strophanthus, and ergot preparations. A considerable portion of the paper was devoted to the subjects of standardization of biological materia medica, including diphtheria and tetanus antitoxins, and botanical or pharmacognostic standardization. In speaking of pharmacodynamic standardization he took up the consideration of a number of individual substances, describing the blood-pressure method for the standardization of epinephrin and products of the suprarenal gland, and the physiological standardization of ergot, cannabis indica, cardiac stimulants, such as digitalis, strophanthus and apocynum, and cardiac depressants, such as aconite and veratrum.

A motion having been made that Dr. Stewart's paper be referred to the Council, with the request that they should bring it to the attention of the Revision Committee of the U. S. Pharmacopœia and of the American Pharmaceutical Association, an amendment was offered to the effect that the paper be referred to the Committee on Therapeutic Research, which should confer with Dr. Stewart as to the best steps to be taken to have it considered by the bodies named; and the motion, so amended, was carried.

The Value of Enterostomy in Ileus.—Dr. LEWIS H. TAYLOR of Washington, D. C., read a paper in which the conclusions were as follows: (1) Enterostomy offers an excellent chance to a class of ileus cases formerly always fatal. (2) It should be done before complete bowel paralysis and before the abdominal muscles are stretched beyond their limit of tonicity. (3) The lower ileum should be the region of election for the operation. (4) The opening should not be made in the colon. (5) Old people, fat people, and people whose abdominal muscles are weakened from any cause offer an unfavorable prognosis. The paper was based on a series of twenty cases occurring in his practice during the past two years. The object in opening the bowel, he said, was to permit the escape of gas and fluid content, and upon the gut's ability to empty itself would depend the success or failure of the procedure. In ileus, or at least those cases of it where the condition was good enough to warrant enterostomy, peristalsis had either ceased or become so feeble as to be negligible, and we had to rely on the contractions of the diaphragm and of the parietal abdominal muscles. If either of the latter forces was much weakened we could not expect to get much result. Therefore to allow tympanites to go on to a high degree was to invite disaster. The ideal time for enterostomy was before peristalsis had ceased, but when it had become apparent that it was going to cease, in spite of the ordinary remedies; and the only reliable ways to determine this were by the frequent use of the stethoscope and careful observation of the character of the vomitus. The larger number of his cases had been operated on for the cause of the condition, and in such, a loop of bowel could be drawn out through the original incision after the sutures had been cut. Where the patient was nearly moribund sensation was so much obtunded that no anesthetic was required; when this was not the case he had given a light primary ether anesthesia. In reflex ileus where there had been no previous incision he had used local anesthesia. A patient needing enterostomy for ileus was in no condition to be moved. The operation should be done in the patient's room, and should, furthermore, be of the simplest and quickest character. It was his firm conviction that a slow, deliberate operation, with the usual operating room paraphernalia, technique, and courtesies, would kill every patient. Having described the technique of the procedure, he said it was extremely important to get the enterostomy low down in the ileum for two reasons: first, the further away it was from the pyloris, the larger the area of distended gut that would be drained; second, the nearer the pyloris, the more acid would be the character of the discharge which later would be thrown out over the skin and the greater the interference with nutrition when food could be recommended and the wound expected to heal. In appropriate cases, where the abdominal muscles were not stretched beyond their limit of tonicity and there was still some bowel power, the relief was immediate, and the quantities of gas and pea-soup bowel content discharged enormous. Cessation of vomiting took place almost at once, and as a rule did not recur. If it did, gastric lavage, to clean out the bowel content which had regurgitated before the enterostomy was done, would usually suffice to check it. The character of the pulse soon improved, and in a few hours there was a change in the patient from the appearance of imminent death to one of comparative comfort. In but two instances had he found it necessary to resort to operative interference to close the fistula. So far as his individual judgment went, he had no hesitation in saying that, in his opinion, everyone of his twenty-one patients would have died promptly if enterostomy had not been performed. Sixteen of the series were cases of peritonitis due to various causes, two were incident to toxemia outside the abdominal cavity, one followed on the third day after a high-forceps delivery and post-partum hemorrhage, and one was reflex. Of the two toxemic cases, in both of which the patients died, one was due to lobar pneumonia in a woman 8½ months

pregnant, and the other to a general gas bacillus infection in a woman operated on for a large, partially strangulated uterine fibroid. Excluding these two, the series showed a mortality of 16.6 per cent.

Note on the Treatment of the Gastric Neuroses.—Dr. Reynold Webb Wilcox, in this paper, said that formerly all the neuroses of the stomach, generally enumerated as twelve, were grouped together under the title "nervous dyspepsia," and from the therapeutic standpoint perhaps this was not so illogical as might be supposed. Accuracy in diagnosis was by no means to be deprecated, but in the careful cultivation of the narrower field the greater general condition was not to be lost sight of. From the standpoint of the therapeutist even the substitution of the term gastric neurosis for nervous dyspepsia had not been altogether fortunate, for it had favored the conception of a gastric neurosis as a morbid entity. The conclusion was tenable that the chemistry of gastric secretion and the physics of stomach motility were not elucidated in textbooks built on an isolated laboratory investigation. This should be predicated upon what the organism might do when its pathology was physiology gone wrong and a neurotic subject was doing his or generally her, utmost in the way of vagaries. In general to the treatment given under the several divisions of the subject, as presented in the standard books, but little exception could be taken. Criticism, however, needed to limit what seemed to be the extensive and improper use of sodium bicarbonate in the treatment of hyperchlorhydria. Reflection and a more careful study of the chemistry of gastric secretion should lead to the substitution for this of magnesium oxide if one looked toward permanent benefit. As there was no panacea for the neurotic condition dominating the individual, so there was no specific for any one of the twelve varieties of gastric neuroses. Each individual should be studied as an entire organism. With many neurotic women in the higher walks of life, in addition to the regulation of habits of life and the employment of various physical agencies, much benefit often came from the administration after meals of ten drops of tincture of nux vomica, six grains of resorcinal and a drachm of peppermint water diluted in two ounces of water. This paper, Dr. Wilcox said, was a plea, not for the less consideration of morbid gastric processes, but for better and more attention to the individual who unfortunately possessed an unruly stomach.

Other papers read were: "The Treatment of Somatic Death" by Dr. W. Wayne Babcock of Philadelphia; "The Therapeutics of Sacroiliac Relaxation," by Dr. A. Ernest Gallant of New York; "Medical Treatment of Gastric and Duodenal Ulcer," by Dr. L. M. Gompertz of New Haven; "Filariasis; with Report of a Case Treated with Dioxydiamidoarsenobenzol," by Dr. Noble P. Barnes; "Dioxydiamidoarsenobenzol in the Treatment of Various Clinical Forms of Syphilis," by Dr. J. M. Anders of Philadelphia.

Election of Officers.—The officers elected were as follows: *President*, Dr. Noble P. Barnes, Washington; *First Vice-President*, Dr. Howard VanRensselaer, Albany; *Second Vice-President*, Dr. Robert T. Morris, New York; *Third Vice-President*, Dr. Francis Marion Pottenger, Los Angeles; *Secretary*, Dr. Lewis H. Taylor, Washington; *Treasurer*, Dr. A. Ernest Gallant, New York; *Chairman of the Council*, Dr. Reynold Webb Wilcox, New York; *Members of the Council*, Drs. James C. Wilson, Philadelphia, Alexander D. Blackader, Montreal, and J. Madison Taylor, Philadelphia; *Committee on Admissions*, Drs. Frederic H. Gerrish, Portland; R. D. Rudolf, Toronto, and Philip King Brown, San Francisco; *Committee on Competitive Therapeutic Research*, Drs. Wilcox, Thomas E. Satterthwaite, New York, and Spencer L. Dawes, Albany; *Editor of Transactions*, P. Brynberg Porter, New York. The next annual meeting will be held in Washington, D. C., in May, 1913.

The Heart Sounds of Sick and Healthy Children.—W. Schlieps states that in older children suffering from severe forms of infectious disease the first sound of the heart becomes inaudible. The relaxed condition of the skeletal musculature suggests a similar condition of the heart muscle. The softening of one heart sound at the same time that the blood pressure remains normal indicates that it is the first sound that is muffled. The remaining audible tone is louder over the pulmonic area than at the apex. The administration of camphor causes both tones to become more distinct, even in cases with a normal blood pressure.—*Monatsschrift für Kinderheilkunde.*

Medicolegal Notes.

Itinerant Physicians' License—Discriminatory Exemption Renders Statute Invalid.—In an appeal from a conviction of practising medicine within the State of South Dakota as an itinerant physician without first having obtained a license from the board of medical examiners, the constitutionality of Section 22 of South Dakota Laws 1903, c. 176, was raised. The act provides that any physician attempting to practise as an itinerant physician shall, in addition to the ordinary physician's license required under the act, procure an itinerant's license from the State Board of Medical Examiners, for which he is required to pay the sum of $500 per annum. Section 22 of the act provides that it shall not apply to resident physicians and surgeons of the State regularly licensed and practising in the State at the time of taking effect of the act.

Those portions of the act regulating the practice of medicine, prescribing the qualifications therefor, and appointing a medical board of examiners are within the police power of the State; and the provision permitting those practising within the State at the passing of the act to continue without other evidence of competency is not invalid as being discriminatory.

The provision of the act, however, providing for an itinerant's license and the payment of a fee therefor, is not, and does not pretend to be, legislation involving the exercise of police power. It contains nothing requiring fitness or qualifications. It is an occupation tax, involving only the exercise of the taxing power. But by Section 22 of the act all physicians licensed to practise in and residents of the State at the time of taking effect of the act, as well as certain other persons named, are exempted from payment of the itinerant license, or occupation tax. The statute, being an exercise of the taxing power, is subject to the constitutional provision requiring that "all taxation shall be equal and uniform."

The Legislature may lay an occupation tax on physicians and surgeons as upon other professions and occupations. The classification of medical practitioners into two classes, those who practise as itinerant physicians and those who do not, is not unreasonable, and the imposition of a tax on itinerant physicians is not in conflict with the constitutional provision.

But Section 22 of the act attempts to exempt all resident physicians and surgeons licensed and practising in the State when the act took effect from payment of the tax. Viewed as an attempt to exempt a portion of a class conducting a professional practice as itinerant physicians in identically the same manner, the provision is unconstitutional. Its practical effect would be that every physician residing in and licensed to practise in the State prior to the date of the act may practise as an itinerant, free from the tax, while every person who, even though a resident of the State where the act passed may have been licensed as a physician after that date, as well as every physician whether licensed or not, who became a resident of the State after that date, would be subject to the tax.

If, however, the section is regarded as an attempted classification of itinerant practitioners, the classification rests solely upon the fact of residence and practice in the State prior to a certain date when the act became operative. Such a statute discriminates against citizens of other States, and is in violation of Article 14 of the Federal Constitution. Residence within or residence outside of a State cannot be made the basis of discrimination in taxation of persons engaged in the same occupation or profession.

The invalidity of Section 22 rendered the act void so far as it relates to itinerant physicians; but the remaining portions of the act relating to examination and matters incident thereto remain valid.—State v. Doran, South Dakota Supreme Court, 134 N. W. 53.

Privileged Communication Statute Applied to Result of Autopsy.—In an action against a municipality for injuries alleged to have caused the death of the plaintiff's wife by reason of a defective highway, the physician who had attended her, and who, without the plaintiff's permission and against his protest, had performed an autopsy to ascertain the exact cause of death, was offered as a witness for the defendant. The plaintiff contended that as neither the deceased nor the representative of her estate had waived the statutory privilege it was error to allow the physician to testify as to the results of the autopsy and his conclusions therefrom as to the cause of her death.

This question does not seem to have been decided before. The court held that the evidence was erroneously admitted.—Thomas v. Byron Tp., Michigan Supreme Court, 134 N. W. 1021.

Medical Record

A Weekly Journal of Medicine and Surgery

Vol. 82, No. 10.
Whole No. 2183.

NEW YORK, SEPTEMBER 7, 1912.

$5.00 Per Annum.
Single Copies, 15c.

Original Articles.

FALSE GIGANTISM, COMPLICATED BY TRAUMATIC OSTOSES.

By WALTER WILSON GRIFFIN, M.D.,

NEW YORK.

SURGEON TO THE FRENCH HOSPITAL, ST. MARK'S HOSPITAL, AND BELLEVUE DISPENSARIES.

THE clinical features of the following case have seemed to me to be of sufficient interest to justify publication. The history of the case is as follows:

S. G., a boy of eleven, of Russian Jewish parentage, born in the United States, came under my care on September, 1911, in the Surgical Clinic of the University and Bellevue Hospital Medical College. Family history yielded no facts of clinical interest; furthermore, a physical examination of both parents was made and they were found healthy.

Personal History.—The third of four children; a full term child; labor was normal. He sleeps and eats well, bowels regular, urination normal, weight at a standstill. He had gastroenteritis when six weeks old of two weeks' duration; measles at three years. Except for these periods of illness the boy has been well. A careful questioning of both the patient and his parents failed to furnish any venereal history.

Present illness began six weeks previous to the time of his first visit, when he fell from a wagon, striking his right shin. A localized painful swelling of the leg was immediately noticed. The pain from the trauma subsided within a few days, but the swelling persisted and has gradually increased to the time of his first visit, September 16, 1911. There was at no time any fever or disability. Since the injury the parents have observed that the injured leg is longer than the other. Of late they have also noticed the presence of two hard, painless immovable masses upon the bone. Even now, except for an uneven gait due to the unequal length of the legs, there is no other cause for complaint. There is absolutely no pain, the boy sleeps and eats well, and can sustain his weight on the longer leg as well as upon the shorter without any discomfort. The right foot is likewise larger than the left, since the boy requires a shoe two sizes larger on that side than on the other.

Physical Examination.—A spare, somewhat sallow boy, fairly well developed for his age, and in good general condition. His face appears small according to the normal ratio between face and cranium; the left eye is smaller than the right and placed one-quarter of an inch lower than it. The tongue is patchy, presenting smooth atrophic areas which are situated anteriorly. The skin presents several small fibroneuromata; similar ones are also seen in his male parent. The glands in the groin are palpable but not tender.

Examination of the thorax, abdomen, rectum, and genitals reveals nothing abnormal.

Bony Skeleton.—The frontal bones are unusually prominent. The upper extremities are equal both in length and circumference. The thorax and spine are normal. The lower extremities reveal an inequality in length below the knee, the femora being equal.

Measurements.—The right leg from the knee to the ankle is 1¼ inch (3.39 cm.) longer than the left. The right foot is longer than the left, and

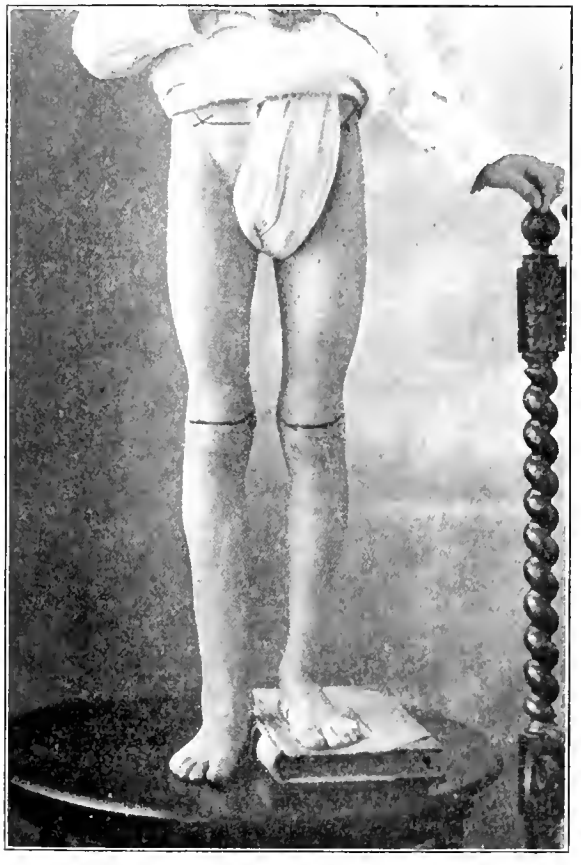


Fig. 1.—The left leg supported by a ledger 1¼ inches thick brings the anterior superior spines and patellæ on a level. The general swelling of the leg and the distinct tumor formation are well shown.

also broader, though this is less apparent. Attached to the right tibia are two smooth, dense, hard, painless masses, apparently consisting of bone, the larger one situated 6 inches (15.54 cm.) from the tuberosity of the tibia, and measuring 2 inches long and 1¼ inch broad (5.18 cm., 3.39 cm.), the smaller tumor situated 9 inches (23.31 cm.) from the tuberosity and measuring 1⅛ inch by ⅞ inch (2.93 cm., 2.28 cm.).

X-Ray Plates.—The *x*-ray plates show the local swellings of the right leg due to two subperiosteal bony masses and also to a certain amount of thick-

ening of the soft parts. In contradistinction to the two masses seen attached to the surface of the tibia there is a diffuse subperiosteal thickening of the fibula not apparent in its fellow of the opposite

Fig. 2—An *x*-ray picture of both legs, showing tumor of the right leg, lengthening of the right tibia and fibula, and the parallel lines in the lower third near epiphyses.

side. The difference in length of the legs, 1¼ inch (3.30 cm.) is confirmed by the *x*-ray.

In *x*-ray pictures of young individuals lines parallel to the epiphyseal lines occur; they are symmetrically placed under normal conditions. In the case under consideration they are wider apart in the right (affected) tibia than in the left. This probably indicates that the increased growth of the right leg (lengthening of the bones) has not been merely since the trauma, but that it has existed since very early life.

X-ray plates of the feet show that the right astragalus and os calcis are distinctly larger in all dimensions than their mates on the opposite side, and that, all in all, the entire skeleton of the right foot is slightly larger than the left.

The interesting points of this case are best understood by examination of the appended photographs and *x*-ray pictures: The tumor mass consists of two sections attached to the bone, and these two subperiosteal bony masses do not encroach upon the shaft or marrow canal, so that their presence apparently does not account for the lengthening.

Other clinical data in reference to the case are: The blood count, which showed a slight anemia, but no foreign cellular content, and no relative percentage change from the normal. One Noguchi and three Wassermann reactions were independently made by three observers, and all were reported negative. In spite of this, a therapeutic test was now made, 0.02 gms., Ehrlich's 606 being injected, with no resultant change in the physical signs after two weeks.

A section of the tumor for microscopical examination was then removed. The Pathologist, Dr. Doughlas Symmers, reported as follows: "Microscopical examination of the bone reveals the presence of some sclerosis of the cancellous spaces. Microscopical examination of the soft tissues removed from the immediate vicinity of the bone reveals a quantity of poorly nourished fibrous tissue in which there are a number of empty vascular spaces, apparently of lymphatic nature. There is nothing in the histology to indicate the presence of syphilis or of a new growth."

The two diagnostic possibilities considered up to this time had been syphilis or new growth (sarcoma). Another explanation was now sought.

It is known that local overgrowth in the limbs occurs—sometimes an hypertrophy of all the tissues takes place. This is true gigantism. Again the hypertrophy may affect but one form of tissue, such as the adipose tissue, blood vessels, lymphatics or the bone—false gigantism. Such overgrowth, involving one or more toes, or fingers, or the foot, or hand, is of much more frequent occurrence than the more extensive types reaching to the knee or hip (elbow or shoulder).

It seemed reasonable to conclude that this is a case where the hypertrophy involves the bones more than the soft parts, a condition constituting the aforesaid false gigantism. I might add here that *x*-ray plates of the skull show no enlargement of the pituitary fossa. Further, it seems that the two bony tumors of the tibia represent subperiosteal effusions of blood which had become organized into bony tissue—traumatic ostoses.

This case is therefore an hypertrophy mainly of the bony skeleton of the right lower limb below the knee, complicated by two traumatic ostoses.

Fig. 3—An *x*-ray picture of both legs taken at a different angle from Fig. 2, but showing the same features.

I wish to thank Dr. J. C. A. Gerster for permission to report this case and for valuable assistance; also Dr. Lewald of the Edward Gibb's *x*-ray laboratories, for his admirable *x*-ray plates.

64 West Fifty-sixth Street

RESEARCH WORK IN LIFE INSURANCE MEDICINE.*

By FREDERICK L. HOFFMAN, Ph.D.

NEWARK, N. J.

STATISTICIAN, PRUDENTIAL INSURANCE COMPANY OF AMERICA

THE scope of life insurance medicine is constantly broadening and the general and specific functions of the medical director and the medical examiner were never of as much practical importance to life insurance companies and life insurance applicants as they are at the present time. The business of life insurance has so enormously increased during recent years that insurance protection has practically become a universal thrift function indispensable to the social wellbeing of the vast majority of the people. The average amounts insured for are much larger today than in former years and in a fair proportion of individual cases these amounts assume the size of a considerable fortune. Since the primary object of life insurance medicine is to safeguard the interests of the company and its policyholders against adverse selection, it is obvious that the duties of the medical director and the medical examiner are among the most responsible in life insurance administration and that they are essential to the attainment of the best possible financial results.† Life insurance medicine is, therefore, a separate and well-defined branch of general medicine, but its sphere is all-inclusive of the innumerable factors and circumstances which condition the duration of life in the individual and the mass of mankind.

The *fundamentals* of life insurance medicine are quite clearly defined and generally understood. The textbooks on the subject and the manuals of instruction are, broadly speaking, adequate to the purpose of protecting the interests of life insurance companies against the ever-present menace of adverse selection. Granting this much, and especially with regard to the elements of physical diagnosis, the evidence is quite conclusive that life insurance medicine has not made the brilliant progress attained in so many other and equally highly specialized branches of medicine. That this has not been the case is primarily to be attributed to the neglect of individual and collective research work, of which we witness the first beginning in the medico-actuarial investigation, the results of which will become available in the near future. To the truth-seeking mind, it has properly been said, "there are no obligations except the incontrovertible evidence." In the practice of life insurance medicine, perhaps as much as in the practice of medicine in general, much is still being taken for granted upon the basis of more or less questionable authority, some of which dates back to remote antiquity. Modern methods of science discountenance the acceptance of principles and beliefs which are not sustained by incontrovertible evidence warranting approximately identical conclusions, irrespective of circumstances or time. It is not my intention to make a special plea for the utility of the statistical method in medicine. It is quite possible to be led astray by conclusions derived from a large number of observations not subjected to a qualified and critical analysis, but in the light of past experience the assertion is warranted that this method has obvious advantages over any other yet devised as regards the determination of the factors of human mortality. It is, no doubt, true that the statistical method is often unsuitable for purposes and matters of medical detail, but the present discussion has reference only to the predominating factors of human mortality, which can be determined by means of the statistical method and most accurately and conclusively by that method alone.

Life insurance medicine may broadly be divided into seven sections—(1) the function and duties of the medical director; (2) the function and duties of the medical examiner; (3) medico-actuarial problems; (4) medico-statistical problems; (5) medico-legal problems; (6) medico-sociological problems; (7) insurance medicine in its relation to public health. The fundamental principles which underlie all of these is *the law of human mortality* and the factors which condition its duration from the hour of birth to the highest attainable age. There is no agreement, even among the most generally accepted authorities, as to what constitutes a precise definition of life, death, and disease. Even the term "law of mortality" has never been defined with scientific precision, as this is essential in the case of scientific laws which admit of no variation in point of space or time.* In the words of Corbaux, who was probably the most learned and philosophical writer on the subject, "Permanence is not an attribute of the law of mortality." I am not prepared to accept this conclusion, which, of course, depends largely upon the exact definition of the term. Most of the writers on the law of mortality have in mind the rate of mortality, which, of course, is subject to wide variations in space and time, in that it is fundamentally conditioned by innumerable circumstances which tend to lengthen or shorten the duration of life. When Süssmilch first laid down his principles of the order of God in the duration of life, he also was influenced chiefly by the observed regularity in the declinate of life from birth to the highest attainable age. Curves drawn on the basis of death rates, even for quite different classes of people or for different periods of time, conform in their broad outline quite closely to each other. The true law of mortality, as deduced from these curves, may be expressed in the statement that among equal numbers living the proportion dying will be greatest at birth, diminish rapidly to a minimum at about age 12, increase slowly to about age 50, and very rapidly thereafter to the highest attainable age. This law has all the elements of permanency, for it has not been found to vary essentially in any one of the numerous investigations which have been made by different methods to determine the rate of mortality or the average age at death, or the expectation of life, or other measures of life's intensity with a due regard to age and sex.

The work of Corbaux is practically unknown to modern readers, for, unfortunately, a contribution of the highest scientific character was printed in an edition of only 250 copies. In the discussion by Corbaux there are most useful observations on life's absolute intensity, on life's specific intensity, at each exclusively considered year of age, of the eight periods which naturally divide the course of human life, and finally, on the law of mortality developed under its modifications as conceived by the author and explained at considerable length. A reprint of this work would make a most useful contribution to

*Read at the annual meeting of the American Medical Editors' Association, June 1 and 3, 1912.

†The total amount paid for the medical services of legal reserve life insurance companies in 1910 was about $6,000,000.

*See also Jevon's "Principles of Science," Vol. II.

insurance knowledge and a study of this author cannot but broaden the conception of life insurance as it is related to medicine, biology, and even philosophy. It is true, however, that speculations of this kind throw no light upon the profound problem of age, growth, and death, which has been so admirably presented by Minot in his lectures at the Lowell Institute in 1907. It is a sad commentary on the neglect of the scientific study of normal and abnormal man, that while the rate of growth or physical development is known and understood with scientific accuracy for rabbits and guinea pigs, it is practically as yet a mere matter of scientific conjecture with regard to civilized man. The positive dearth of accurate data was never more precisely illustrated than in the paucity of facts confronting the Parliamentary Committee on National Deterioration, which desired to ascertain whether there had been a positive decline in the physique of the people of the United Kingdom. The *anthropometric data* contained in the archives of life insurance companies, if subjected to a qualified statistical analysis, would yield a veritable treasure store of useful and conclusive information. The best work of its kind in the field of American anthropometry is the classical report by Gould on the Physique of the American Soldier, prepared under almost inconceivable difficulties soon after the close of the Civil War. The investigation by Gould had its inherent limitations on account of the peculiar age distribution of men engaged in active military service and the conclusions, therefore, do not apply to the whole of the adult population, with regard to which it is so essential that the fundamental laws of growth and physical proportion should be better understood.

What is true as regards our ignorance of the true laws regarding the growth and physical proportions of civilized man, is equally true as regards the rate of human mortality as conditioned by the innumerable factors and circumstances which more or less determine the duration of the individual life and of life in the mass. The philosophical essay by Karl Pearson on *the Chances of Death* is one of the most illuminating contributions to the theory of applied statistics and the practical utility of the theory of probability. Having in mind the suggestion of Prof. Lexis that death in old age only is normal death, Pearson investigated the details of human mortality and he came to the conclusion that, regardless of the many diseases and accidents from which men die, these could be substantially classed into five great groups centering around five distinct ages in life. His mathematical researches lead him to the further conclusion that the curve of mortality should be made to include the waste of pre-natal life and by utilizing such data as could be had concerning deaths during the different periods of uterine gestation, he constructed a curve which practically conformed to the theoretical conceptions derived from the law of pure chance.

Karl Pearson is largely responsible for improved methods of statistical research. No writer has emphasized more emphatically the proper methods of science which should underlie research work in every field of human inquiry.* His definition of life and its origin and perpetuity are a most valuable introduction to the student of insurance medicine in its broader aspects. His observations on the *selective and non-selective death rate* are probably preliminary to more extensive investigations, which would seem to be required to precisely determine the truth of a most important assertion. In his discussion of the inheritance of the duration of life, Pearson states that the non-selective death rate or that portion which is conditioned by man's environment, is about 20 per cent., while the selective death rate or that portion which is conditioned by heredity, is about 80 per cent. of the total death rate. It is not shown upon what numerical basis these conclusions were arrived at, but there are few more important problems in insurance medicine than the exact ascertainment, if possible, of the probable inheritance of the duration of life.

The value of *family history* in life insurance medicine would not appear to hold the important position assigned to it in the earlier years of life insurance development. If the conclusion of Pearson is correct that the selective death rate accounts for 80 per cent. of the total mortality, then the family history of the applicant attains to very considerable practical proportions. In the absence of trustworthy registers containing the required proofs of the ages and causes of death of persons of former generations, it is obviously most difficult, if not impossible, to secure trustworthy answers to the questions relating to ancestry in the application blank. But, in a general way, however, these questions, at least with regard to life and death in general, are correct, as shown by insurance experience, according to which in the case of every 100 male applicants 37.4 per cent. of the fathers were living and in the case of female applicants 37 per cent. As regards mothers, it was shown that for male applicants 48.9 per cent. were living and for female applicants 47.6 per cent. These results are, of course, influenced by the age distribution of applicants, but it is quite clear that, in a general way, the essential facts of parental life and death at least are probably accurately returned. The subject becomes much more complicated as regards the causes of parental death, which there are strong reasons for believing are often deliberately misstated and particularly in the case of the most important causes, such as tuberculosis, cancer, insanity, suicide, etc. Research work in this direction would unquestionably disclose valuable facts which could be applied to the development of a more satisfactory theory of risk selection, for it has been shown by the investigations of Marsh, in behalf of the Mutual Life, that a family history of consumption is of serious significance as disclosed by the subsequent mortality experience. And much the same conclusions have been established by Hesse on the basis of the experience of the Life Insurance Company of Bale, who, in a report published in 1899, presents a most interesting analysis of the causes of death in the family history of insurance applicants.

In forecasting the probable longevity of the individual, it is necessary to take into account the *factors of safety* in the human economy, which have been so admirably described by Dr. Meltzer of New York City. It would be most useful to have these factors more precisely defined, for some of the conclusions of Meltzer and others on this subject may be questioned. Is it true, for illustration, that "every medical man knows that one kidney can be removed with entire impunity if the other kidney is normal?" As far as I am aware, no trustworthy data are available to show that the normal expectation of life of persons who have undergone this operation is not substantially curtailed. Is it true, as it is so often alleged, that the removal of the appendix is not, in at least a considerable proportion

*See Pearson's "Grammar of Science" and "Chances of Death and Other Essays."

of the cases, followed by a decrease in the average longevity? I am not aware that the conclusions advanced with regard to the non-injurious after-effects of the removal of the appendix are sustained by an adequate basis of statistical data subjected to a critical analysis by those qualified to do so. In fact, the whole subject of the after-effects of surgical operations and their relation to longevity has never been investigated with the required impartial medical and statistical skill. It would be difficult to conceive of a more complex problem confronting the seeker after truth. Considering the vast amount of hospital experience, it is lamentable that the subsequent results, like nearly all records of disease, should be so generally wasted. I am aware, of course, that some of these questions have been taken into account in the Specialized Mortality Experience, prepared under the direction of the American Actuarial Society, but the point may be raised whether the results are really useful for general purposes, since the number of cases considered was small and representative of a selected class. It must be self-evident that if any class of impaired risks is most carefully selected, the subsequent mortality must be considerably less than would be the case with a similar class of persons in the general population. The conclusion derived from the Specialized Mortality Experience that, contrary to expectation, those who have had otorrhea appear to be good risks, would hardly be accepted by the general practitioner, and certainly not by the specialist on diseases of the ear. The most serious shortcoming of the Specialized Mortality Experience is the absence of medical information, and particularly as to the causes of death. It is to be hoped that the forthcoming investigation by the Medico-Actuarial Committee will present in full the actual number of deaths and their causes for every specialized group considered. It would also add much to the practical utility of the investigation if the observations and comments were made with less brevity and with some attention to medical matters of detail, which, according to circumstances, may assume considerable importance. It may further be suggested that it would seem better to limit the groups to specific and well-defined medical terms, than to combine more or less similar but, according to circumstances, widely different diseases or abnormal bodily conditions. For illustration, the combination of inflammation, peritonitis and appendicitis, invalidates all conclusions with respect to any one of these three well-defined but quite dissimilar affections. The same is true of the combined group of renal colic, calculus, or gravel.

It is a distinctly hopeful sign that the requirement of the *blood pressure* test in the practice of medicine and life insurance is becoming more general, at least in the examination of applicants for large amounts. The classical treatise by Janeway constitutes a thoroughly scientific foundation for a more comprehensive future inquiry into the whole subject of blood pressure in its relation to life insurance medicine. The discussions by Cook, of Minneapolis, and Lankford, of San Antonio, on "Blood Pressure in Life Insurance," are indications of the direction which investigations of this kind are bound to take. Jackson, of Boston, in 1911, published some very interesting remarks on high blood pressure and arteriosclerosis, but the most scientific work of recent years are the admirable clinical observations on blood pressure, by Cook and Briggs of Johns Hopkins Hospital. According to Lankford, many thousands of tests have been made of healthy people of all ages and the systolic pressure has been found to range from 110 to 120 for young adult females and from 115 to 125 for young adult males. For older ages the range was from 145 to 160. For life insurance purposes, a much more precise statement, however, is required, and it would be desirable to have a sufficient number of tests made for, say, every ten years of life, commencing with age 20 and ending with age 70. The more exact requirements would also necessitate similar tables for the variation in blood pressure in disease in conformity to the methods adopted by Cook and Briggs.

The significance of a normal *pulse rate* is conceded by every one familiar with the elementary principles of medicine. The elaborate treatise by Mackenzie on the Study of the Pulse, would seem to constitute a complete guide to the use of this factor in physical diagnosis, as an indication of abnormal conditions of the heart and circulation. Tigerstedt's table showing the maximum and minimum frequencies of the pulse from ages 15 and upwards, is based on a comparatively small number of cases, which would certainly seem to make this table more or less unsuitable for life insurance purposes.* A minimum pulse at age 21 of 41 and a maximum of 96, may or may not be evidence of abnormality in the body, but when such figures are based on only 54 such cases the question may properly be raised as to whether the conclusions should apply to a business involving such large financial considerations as insurance. A more extended consideration of the subject by Gould in his report on the Anthropometric Statistics of the Civil War, also fails to meet modern requirements, in that most of the observations relate to men of comparatively young ages. It would seem, therefore, that the whole question should be made a subject of original inquiry, with a due regard to age and sex, and possibly to race and occupation.

While much has been written upon the effect of *alcohol* on the human body and the relation of drink to longevity, it is only within very recent years that really scientific contributions have been made to this important subject. The earlier work by Norman Kerr quite clearly established the incidence of alcoholism as a factor in the mortality experience of life insurance companies, and this has been fully confirmed by the mortality of the United Kingdom Temperance and General Provident Institution. In general terms it has been said "that the feature of the abstainers' mortality is a great saving after early manhood throughout all the working years of life; which saving increases up to middle age, and gradually rises to the normal rate of healthy life as old age is reached at, say, ages 70 or 75."

The scientific evidence of the effect of *alcohol* as a beverage has been most ably assembled by Sir Victor Horsley in his treatise on "Alcohol and the Human Body." The value of this work to life insurance companies cannot easily be overrated, more so in view of the statistical evidence disclosed by the analysis of the experience of insurance institutions differentiating abstainers from non-abstainers, with a considerable saving in premium charges to the former. Such work as has been done by Karl Pearson and others to determine the influence of parental alcoholism on the physique and ability of the offspring, is indirectly of value to life insurance com-

*See also table of pulse rates as given in Minot's "The Problem of Age, Growth, and Death," p. 15

panies as disclosing a method of research, which on the basis of large numbers may establish a correction at present entirely unknown. The thoroughly representative character of the Twelfth International Congress on Alcoholism indicates the direction in which the experience of life insurance institutions may prove of value to the cause of temperance and the general progress in public health. The lines of future research are made evident by recent contributions to the study of the "Influence of Alcoholism on the Degeneration of the Offspring" by Laitinen, the "Relation of Alcoholism and Tuberculosis" by Henschen, the "Action of Alcohol on Muscular and Mental Development" by Rivers and Webber, etc., etc. As a suggestive indication of the modern trend toward practical methods of influencing public opinion on the drink question, reference may be made to a "Manual on Alcoholism in Industry," published by the American Museum of Safety of the City of New York. The subject confronts life insurance companies not only with regard to the habits of non-abstaining applicants in general, but also in the case of applicants engaged in the manufacture and sale of intoxicating drink. The practice of companies with regard to these questions is quite varied, largely because of the absence of conclusive data. Every analysis of the mortality of persons employed in the manufacture and sale of alcoholic beverages, however, sustains the conclusion that the death rate in general is excessive and that in particular the mortality from tuberculosis, respiratory diseases, and liver diseases is considerably above the average. Research work along these lines is practically certain to bring forward a considerable amount of useful information, alike for the purposes of improved methods of insurance administration and the needs of the community at large.

It would carry me entirely too far to even briefly discuss the elements of *climate* in their relation to human mortality. Most of the works on climatology give very superficial consideration to the question of health. It has been pointed out in a recent editorial in the *British Medical Journal* (April 6), in a review of a notable work on the Climate of Africa, that "it is a great pity that the healthiness or unhealthiness of the different colonies or protectorates, that is, the medical status of each place, was not equally dealt with." This conclusion applies to most of the works on climate, including the treatise by Ward and the earlier work by Ham. The investigations of Dexter on "Weather Influences" would seem to prove quite conclusively that there are definite physiological effects of certain meteorological conditions, and as emphasizing the object in this field of research, reference may be made to a recent and admirable paper by Dr. Gordon on the "Influence of Strong Prevalent Rain-Bearing Winds on the Course of Phthisis." This investigation would seem to prove that exposed parishes have a decidedly higher proportion of comparatively short cases of phthisis than the sheltered parishes and a lower proportion of cases of comparatively long duration. In its broader aspects the subject of climate is of importance, in view of the rapidly increasing population of the United States in the humid regions of the South with a high dew point and in the elevated regions of the West at altitudes of over 2,500 feet. In the more restricted consideration of the climate and health of hot countries, it requires to be said that within recent years many valuable contributions have been made to the subject of tropical climatology, but the available statistical information has been utilized to only a very limited extent. The investigations of Woodruff on the "Effects of Tropical Light on White Men" open a new field of discovery in a most promising direction. His observations on actinotherapy are decidedly suggestive, but further research is required to establish Woodruff's conclusions by means of a more decisive array of facts. The experience on the Isthmus of Panama and in many other intensely tropical countries has shown that it is not impossible to control most of the health-destructive factors which menace the white race in hot countries, but there is serious danger of erroneous conclusions on account of only apparently satisfactory results. Considering the extreme mobility of modern populations, together with the more generally accepted conformity to rules for residence in the tropics, the temporary and permanent effects of tropical residence may not in their entirety become a matter of statistical record. The tropical death rate of white populations fails to reflect precisely the full effect of tropical residence, since an ever-increasing proportion return to temperate regions for the recovery of health or the prevention of physical deterioration. A much longer period will be required to establish the truth of the assertion that residence on the Isthmus is to-day absolutely free from health-injurious consequences, and in any event it may safely be asserted that the Isthmus is not a health resort for Americans at the present time. The sanitary progress which has been made challenges the admiration of the world, but it may do serious harm to overdraw the conclusions based upon a superficial study of the facts.

The *geography of disease,* or geographical pathology, furnish subjects of research which are bound to attract much more attention in the future than in the past. The classical works by Hirsch and Davidson have been followed by a most useful treatise by Dr. Clemow, who gained much practical experience as British delegate to the Ottawa Board of Health. An excellent summary account of health progress and health administration in the West Indies has been published within a year or two by the late Sir Rupert W. Boyce, Dean of the Liverpool School of Tropical Medicine. Increasing attention is being given to the subject in the official reports of governors and medical officers of the tropical possessions of European countries and the United States, but special mention requires to be made of the excellent medical reports for the German tropical possessions in East and West Africa, Cameroon, New Guinea, etc. It is to be hoped that the contents of these reports will be made more accessible to English readers through the "Annals of Tropical Medicine," published under the direction of the Wellcome Laboratory at Khartoum, in the British Soudan. The scientific Memoirs of this laboratory are among the most encouraging evidences of the sanitary control of tropical countries, which is reflected in a gradual fall of the death rate of the white population, a decrease in some respects, however, more apparent than real.

The field of *tropical medicine* is immense, but one of considerable practical importance to American life insurance companies, on account of the ever-increasing proportion of American residents temporarily or permanently residing in the countries of the Torrid Zone. The general death rate of India has been reduced to 30.9 per 1,000 in 1909, but the rate for the Christian population only was 19.4 per

1,000. The principal cause of mortality is fevers, chiefly malarial, accounting for a death rate of 10.8 per 1,000 in 1909, followed by a cholera death rate of only 1.06. The highest death rate from cholera during recent years occurred in 1900, when it attained to 3.8 per 1,000, and the highest death rate from plague occurred in 1907, when it reached 5.2 per 1,000. In due appreciation of the great practical importance of sanitary reforms, the government of India has actively interested itself in preventive measures, and in 1909 an important scientific Memoir was published on "Malaria in India," followed in 1907 by an exceedingly instructive report on the "Causes of Malaria in Bombay," and suggestions for measures of sanitary control. Reference may be made to the work of the Liverpool School of Tropical Medicine, which in 1903 published the results of the "Malaria Expedition to the Gambia," followed by equally suggestive reports on "Anti-Malaria Measures at Ismalia," the "Distribution and Control of Sleeping Sickness in the Congo," "Yellow Fever Prophylaxis in New Orleans," etc., etc.

The admirable sanitary results of the Japanese occupation of Formosa emphasizes possibilities of the greatest practical importance. The mortality of Formosa, for illustration, has been reduced for Japanese residents from 20.1 per 1,000 in 1906 to 16.8 in 1909. The local incidence of malaria has been determined by means of a bacteriological survey for every section of Formosa and also the geographical distribution of malaria-carrying mosquitos. For nearly every tropical country under European or American administration to-day, the available records indicate at least a fair measure of sanitary progress achieved during recent years. The European death rate of Egypt has been decreased from 18.9 per 1,000 in 1902 to 13.5 per 1,000 in 1910. In Hongkong the malaria admission rate for European troops has been reduced from an average of 625 per 1,000 during the four years ending with 1904 to 228 per 1,000 during the six years ending with 1910. The death rate of Calcutta for 1910 was 20.7 per 1,000, or the lowest recorded mortality for twenty years. In the Island of Ceylon the death rate of Europeans has decreased from 20.6 per 1,000 during the decade ending with 1908 to 15.6 per 1,000 during 1909 and 13.7 for 1910.

The average death rate of Americans in the Philippine Islands was 11.1 per 1,000 for the five years ending with 1911. Granting that most of the Americans are of the age period when the normal death rate would not exceed 8 or 9 per 1,000, and that a fair proportion leave the Islands while impaired in health as the result of tropical residence, it is a safe conclusion, sustained by abundant evidence, that by conformity to well-established rules it is not a difficult matter to preserve health in the Philippines at the present time. The death rate for all races continues high, having been 37.2 per 1,000 during the period under consideration, and it is particularly suggestive that the mortality from beriberi should have increased from 1.8 per 1,000 in 1907 to 6.2 in 1911. Cholera, leprosy, malaria and dysentery are decreasing, and there is abundant evidence, official and otherwise, that with respect to sanitary control the Philippines are to-day as well, if not better, administered than our Southern States. The present occasion does not permit of a more extended survey of the sanitary progress of American tropical possessions, but from every source the evidence is quite conclusive that the deliberate efforts of recent years have been productive of excellent results and that the menace to health and life of American residents in tropical countries is decidedly less at the present time than it was a generation ago. In no direction, however, are there more promising opportunities for practical research work than in the field of tropical medicine and tropical mortality, and to no interest are such results of greater practical importance than to the life insurance companies of the United States.

There is most urgent need for the establishment and proper equipment of a School of Tropical Medicine after the model institutions of Liverpool, London, and Hamburg. Such a school, by preference, should be located at New Orleans, where a practical beginning has been made in connection with the Medical Department of Tulane University and in cooperation with the Charity Hospital. With the opening of the Panama Canal there can be no question of doubt but that the port of New Orleans will become the most important commercial outlet for the trade of the United States with the countries to the south. With an increasing water-borne traffic, the risk of the introduction of tropical diseases will become a more serious one to the nation, and for the study, as well as for the prevention of such diseases, a well-equipped School of Tropical Medicine is one of the most urgent needs of the present day. A brief reference only requires to be made to the still considerable prevalence of malaria throughout the South, to the sporadic occurrence of cases of leprosy, Oriental sore, etc., and the menace of a further spread of pellagra, which in the registration area alone in 1910 accounted for 368 deaths. The work of the Rockefeller Sanitary Commission for the Eradification of Hookworm Disease indicates the practical direction of sanitary research. The number of persons treated for hookworm disease on behalf of the Commission was 140,000, and according to a survey of 125 counties, the disease was most prevalent in North Carolina, Mississippi, South Carolina, and Georgia. It requires no argument to prove that work of this kind must needs be of practical value to life insurance companies and that the expenses incurred have been justified by the results.

In the field of *anthropology* the opportunities for research are practically boundless. As yet only a beginning has been made, and the textbook on the "Races of Europe," by Ripley, for illustration, may be referred to as evidence of the inadequacy of our present understanding of race traits and characteristics in their relation to disease resistance and longevity. Anthropometric measurements are not available for sufficient numbers, and the details of mortality by causes and with a due regard to sex and age are not available for qualified statistical analysis. The population of the United States includes to-day so large a variety of types of mankind that both anthropology and anthropometry occupy a much higher place in American political and economic science than heretofore. It is a matter of regret that the extensive investigations of the United States Immigration Commission should not have included observations in detail of the physical and pathological peculiarities of the foreign elements which have come to this country in such large numbers during recent years. The observations by Boaz, however, may be referred to as an indication of the direction which such in-

quiries are bound to take if anthropology is to be made useful for practical purposes. Racial, as well as interracial, problems have their place in life insurance to-day. The vast amount of mere opinion or conjecture requires to be replaced by trustworthy statistical data.

The precise methods of Duckworth, as adopted for his studies in the Anthropological Laboratory of Cambridge, should be applied to the scientific study of the foreign element in the United States. The thoroughly scientific contribution to the racial anatomy of the Philippine Islanders, including new methods of anthropology, should be made use of in similar research work in the United States. The proceedings of the First Universal Races Congress prove conclusively that as yet not much more than a beginning has been made to raise anthropology to the status of an exact and applied science. The ethnographic studies made in connection with the Census of India, particularly by Risley, foreshadow the direction which such investigations should take in the United States. The work by Hrdlicka on the North American Indian is a valuable contribution to a subject which as yet has been largely neglected. What is true of the foreign element and the non-Caucasian races in the United States is equally true of the natives. The researches by Baxter and Gould into American anthropometry have not been followed for half a century, although the conclusions then arrived at were of exceptional scientific and practical value. There is, however, a large amount of anthropometric data in the archives of insurance companies which could be utilized for the purpose of a national anthropometric survey. Sooner or later the question of national physical progress or deterioration will require qualified consideration. At present many of the conclusions as to what constitutes normal physical man or normal woman, and what constitutes the normal rate of physical growth according to age and sex are mere matters of conjecture.

The comparative mortality rate of the white and colored races of the United States may be referred to as a practical illustration of the importance of research work in the field of *race pathology*. The average death rate of the white population of ten southern cities during the period of 1906-1910 was 16.7 per 1,000, whereas the corresponding death rate of the colored population of these cities was 30.6 per 1,000, or 75.4 per cent. in excess. The tuberculosis death rate of the white population was 18.8 per 10,000, whereas the corresponding tuberculosis death rate of the colored population was 49.8, or 164.9 per cent. in excess. The highest death rate for the white population was considerably below the lowest death rate for the colored population, and the highest tuberculosis death rate of the white population was 22.9 per 10,000, or still considerably below the lowest tuberculosis death rate for the colored, or 28.2. The true incidence of an excessive death rate is only disclosed by an analysis of the mortality in detail, with a due regard to age and sex. It is to be hoped that the Census Office will see its way clear to publish in the near future a full account of the mortality of the several races and at least the more important foreign elements in the United States, by sex, cause, and divisional periods of life. It is true that such an analysis involves a large amount of clerical labor, but the results would be most useful for the social and economic needs of the nation.

Aside from racial and climatic factors there are *the bio-sociological factors*, particularly sex, matrimonial condition and fertility, which cannot be considered on this occasion. A brief reference may be made, however, to a very suggestive recent discussion of the mortality of eldest children in large families by Lucien March in the *Journal of the Royal Statistical Society*, which would seem to sustain the conclusion that the death rate of last-born children is higher than the mortality of first-born children. The discussion raises the whole question of the so-called Bremersche-Belastung, which by foreign authors has been discussed in some detail with reference to tuberculosis. Even granting that there is an increase in mortality with the order of birth, it, of course, does not follow that such a conclusion could be applied to practical purposes in life insurance medicine. It, however, is feasible to take such facts into account, provided they are sustained by incontrovertible evidence. It is generally admitted that the mortality of the married is more favorable than the mortality of the unmarried, but even with regard to this question much more trustworthy statistical data are required than are as yet available. Even the question of sex difference and the apparently higher mortality of insured women than insured men, in contrast to the lower death rate of women in the general population when compared with men, is a field of statistical research which has not received the attention of which it is deserving.

There has been much speculation from time to time as to *the most fatal year of life*. One quite learned discussion in the London *Evening Standard* some years ago fixed the age at 37, while, according to an article in the New York *Times*, 56 would seem to be the fatal year for persons of genius. Lord Beaconsfield appears to have been the author of the remark that 37 was the fatal age, and it has been held that this observation was sustained by much striking testimony as to its truth. Without disputing, on this occasion, the contention with reference to men of genius, it may be stated as a matter of fact that the maximum number of deaths in adult life, according to American experience, occur in the 60th year. This conclusion, derived from the vital statistics of the Census, is practically confirmed by the experience of a large industrial insurance company, according to which the largest number of deaths of males occur at the 65th year of life and of females at the 64th year. The small differences may be accounted for by the method of stating the age at death, as to whether next birthday, or nearest birthday, or more precisely by reference to months and days. There is, however, a distinct but variable rise in the actual number of deaths of males at ages 23, 31, 36, 41, 46, 51, 56 and 61, which would seem to indicate by the regularity in the periodicity that the result is partly influenced by the method of returning the ages at death. Be that as it may, the data are decidedly suggestive, and the conclusion remains unshaken that the probable age of greatest frequency in the actual number of deaths, or the year of adult life at which most deaths occur, in the United States, is about 65 or 66.*

There is one phase of the mortality problem to which there appears to be no reference in the textbooks on life insurance medicine. The late Sir James Paget pointed out that there is apparently a

*It is not at all settled that the death rate increases with every year of adult life and it is quite probable that the rate is higher at 20-24 than just before or after.

chronometry in life as well as in chemistry or mechanics, and that in the study of pathology insufficient consideration is given to the question as to how much of exact disease or of its variations may be the result of a serious disturbance of the time rate at which the organic processes should be discharged. As observed in the MEDICAL RECORD of May 31, 1902, "There is much reason in the argument that many cases of failure in health are due to these errors in the chronometry of life," and the Record quotes the conclusion of Sir James Paget, that "Pathology and sometimes our practice would be improved if local defects of working power were more often thought of as errors in the time rate of life in the defective objects and if we would think that the age of each object is not always wholly or exactly expressed by the time that has elapsed since it was first formed," and, furthermore, "If we would bear in mind that any internal organ may deviate from the general time rate of the body as much as the teeth, the hair, and the skin, which we so commonly think of as old before their time." In other words, the question should not be as to the absolute age, but as to the attained age of the heart, the brain, or any other part of the body, which may seem to be less healthy than the rest.

To this important suggestion, which obviously must be of much practical importance, if it is at all applicable, to the needs of life insurance companies, a brief reference may be made to another and equally new observation by Minot, that "We must, it seems to me, conclude that longevity, the duration of life, depends upon the rate of *cytomorphosis*. If that cytomorphosis is rapid the fatal condition is reached soon, if it is slow the fatal condition is postponed. And cytomorphosis in various species and kinds of animals must proceed at different rates and at different speeds at different ages." A discussion of this suggestion would involve the whole question of the cell and its basic function in the economy and the duration of human life. Such a discussion obviously falls within the technical qualifications of the expert in embryology and cellular pathology.

There has been much speculation during recent years as to the probable *effect* on the average duration of life *of the elimination of specific diseases*, such as tuberculosis, yellow fever, smallpox, etc., or at least of their substantial reduction. Farr, in 1875, anticipated this problem by a discussion of the effect of the extinction of any single disease on the duration of life. But long before Farr, Duvillard had calculated the probable effect of the elimination of smallpox as the result of vaccination, which, he concluded, would add three and one-half years to the existing mean lifetime. Modern writers have been chiefly concerned with the effect of average longevity as the result of a diminution in the mortality from tuberculosis and typhoid, and some very interesting calculations have been presented by learned authorities whose work is deserving of more general appreciation, as a practical contribution to the economic consideration of public health questions. Further inquiry of this kind would unquestionably lead to some practical conclusions and perhaps no other data would more fully justify the cooperation of life insurance companies with the nation-wide movement for an improvement in public health.

There is probably no disease other than tuberculosis of greater practical importance to life insurance companies as a menace to the future interests of their policyholders than *cancer*. Whether the increase in the rate is real or only apparent, it is evident that the mortality from cancer constitutes a very substantial proportion of the mortality from all causes at ages 45 and over. Cancer research is, therefore, one of the most promising fields of inquiry, and what has been done in this respect in England, Germany and Hungary suggests a similar and nation-wide investigation for the United States. The work of the Cancer Commission of Harvard University and of the Cancer Laboratory of the New York State Department of Health must be considered to be of great practical value to life insurance companies and to life insurance medicine. It is suggestive that a painstaking statistical study of cancer death rates, based largely upon American data, should have been made by Dr. Maynard of Pretoria, South Africa, but the most comprehensive statistical reports on cancer and the essential factors of its occurrence are those published by the Royal Statistical Bureau of Hungary and the Municipal Bureau of Statistics of Amsterdam. The largest number of deaths from this disease in the United States occur at ages 60 to 64, when 14.2 per cent. of the mortality of males and 12.8 per cent. of the mortality of females is the result of this specific cause.

The relative frequency of *cancer by organs* affected has been as follows for the United States, for the period 1900-1908: For males the mortality of cancer of the mouth was 3.3 per 100,000 of male population; of the stomach and liver, 24.4; of the intestines, 6.1; of the skin, 3.0; and all other organs or parts, 13.8. The total death rate from cancer for males was 50.5.

For females the mortality from cancer of the mouth was only 0.8 per 100,000 of female population; of the stomach and liver, 25.7; of the intestines, 8.6; of the skin, 1.8; of the breast, 11.5; of the organs of generation, 20.2; and for other organs and parts, 16.7. For the total female population the rate was 85.3 per 100,000.

The most suggestive recent statistical study of the cancer problem is by Dr. C. E. Green, of Edinburgh. This author adopted entirely original methods of research, based, however, largely upon statistical investigations. He made the necessary corrections of cancer death rates on account of the admission of non-residents to hospitals in large cities, and his conclusions are quite startling, but apparently are well sustained by the available evidence. In brief, he brings out a traceable relation between cancer occurrence and topography and occupation, concluding in part that "The towns lying in a cup have by far the highest cancer mortalities, while those on a level site with level surroundings show the lowest percentage. Those on hill sites are slightly higher than those on sloping sites."

I obtained, through the courtesy of the United States Geological Survey, a grouping of American cities conforming to the topographical division adopted by Dr. Green, but the corresponding cancer death rates did not exactly conform to his conclusions. I would partly attribute this result to the inherent defect in all our cancer mortality statistics, in that the deaths of non-residents were included with those of residents in the municipal mortality returns. It is quite possible that if the method of Dr. Green were followed in its entirety, the conclusions for American communities would at least partly conform to his own, but it requires to be considered that we have a much more mobile

population in the United States than is common to the large and medium size cities of Scotland, so that the degree of exposure to possible local cancer-producing conditions would be much less in the United States. The work of Green emphasizes the practical utility of original statistical research in the field of medicine, and particularly in that branch which concerns itself chiefly with the successful solution of life insurance problems.

The most gratifying evidence of American sanitary progress is to be found in the gradual, but persistent, reduction in the death rate from *typhoid fever*. In 1891 the typhoid death rate for American cities was 59.0 per 100,000 of population, against only 20.2 in 1910. The decrease has been progressive by five-year periods, from 45.4 per 100,000 during 1891-1895, to 25.3 during 1906-1910. In Northern and Western cities the rate has decreased from 43.1 during the first five years of the period, to 23.4 during the last. In Southern cities for the white population the rate has decreased from 55.4 to 37.2, and for the colored population from 73.9 to 51.0.

Regardless of the sanitary progress which has been made throughout the country at large, the typhoid rate continues unduly high in certain sections and dangerous outbreaks occur in localities heretofore considered secure. The intimate relation of typhoid fever occurrence to polluted water supplies is no longer a matter of conjecture, but it is an established fact. The research work into the origin and prevalence of typhoid fever in the District of Columbia and a number of other badly infected localities throughout the United States, by the Public Health and Marine Hospital Service, discloses precisely the underlying causes of a strictly preventable disease.

I can only make a very brief reference to *tuberculosis*, with regard to which it may be said that the death rate for American cities has decreased from an average of 32.3 per 10,000 during the five years ending with 1874 to an average of 18.5 for the five years ending with 1909. The statistical laws of tuberculosis are far from being as definitely understood as would be desirable for life insurance purposes, and this holds true particularly for the experience data of tuberculosis sanatoria. These records, with few exceptions, have not been made the subject of proper tabulation and critical analysis, but the aggregate experience would be a most useful addition to medical and insurance science. Among the factors which, among others, require consideration, are the age on admission for treatment, the Turban stage of the disease on admission and its previous duration, the lung involvement, the average weight on admission and discharge, the value of the tuberculin treatment, the history of exposure to infection, the family history, and, most of all, the post-discharge results. For German sanatoria an admirable analysis of the aggregate institutional experience is published each year and in much detail for each of the thirty-one invalidity insurance offices, providing systematic treatment of tuberculous members, almost entirely of the wage-earning class. The statistical investigations made at Saranac and Liberty, N. Y., Washington, D. C., and Fort Bayard, N. M., etc., are deserving of mention, but as yet our American data are not collected on the basis of a uniform schedule and subjected to a critical analysis, nor, as a rule, are the post-discharge results observed in the proper manner to provide a basis for trustworthy conclusions as to the medical value of sanatoria treatment and its relation to the expense incurred.

The relation of *eyestrain* to mortality and morbidity has been made the subject of painstaking inquiry by Dr. George M. Gould and others, whose investigations prove quite conclusively that defects of vision are often important contributory causes in the more obvious diseases which shorten life. It may be impracticable to require insurance applicants to wear suitable glasses for the correction of visual defects, but it may be suggested that some advantage would accrue from the inclusion of a question as to vision in the application blank.

Much progress has been made in the field of *industrial diseases*, but much requires to be done to provide life insurance companies with really trustworthy information as to what really constitutes an occupation detrimental to health. The field of specific occupation diseases is quite limited, since the predominating causes of ill-health in industry are much the same, except in an exaggerated form, as among the population at large. The distinct field of occupational neuroses has been admirably reported upon, with details of the clinical study of one hundred cases, by Dr. Charles L. Dana of New York. The investigation forms an admirable basis for further inquiry, and, as pointed out by Dr. Dana, by those, not necessarily physicians, but who are interested in industrial diseases. The subject within recent years has attracted much qualified attention on account of its relation to workmen's compensation and employers' liability laws, and the results of individual or collective investigations are not only of much interest to the State but also to life insurance companies in the more careful selection of risks.

Mental afflictions, or *unsoundness of mind*, especially in their relation to the mortality from nervous diseases, are a much neglected field of statistical inquiry. The evidence is not conclusive whether insanity is on the increase, particularly because of the difficulty of a precise definition as to what constitutes unsoundness of mind. The statistics of institutions for the treatment and cure of insane persons require to be made the subject of a much more qualified and uniform tabulation and analysis than has heretofore been the case. Possibly no field of statistical research is of greater interest to the student of social pathology. As regards the heredity of insanity, the same conclusion probably applies as in the case of tuberculosis, that it is not the defect itself which is inherited, but a lesser resistance against conditions destructive of soundness of mind. There have been innumerable attempts at the classification of insanity, but equally innumerable reasons have been advanced why a definite and final classification seems almost impossible. It is held by Haviland Hall, the well-known author on medical examination for life assurance, that "The influence of the mother's insanity is more serious than that of the father." As far as I have been able to learn, there is no substantial statistical basis for this conclusion. The same conclusion applies to the alleged heredity of suicide, although there are strong reasons for suspecting a traceable relation between suicide in the parents and a tendency to suicide in the offspring. The suicide rate has persistently increased in American cities, from an average of 14.5 per 100,000 of population during the five years ending with 1895 to 20.0 during the five years ending with 1910. The

suicidal impulse, it has been pointed out by Clouston, "constitutes the great peculiarity and the special responsibility attaching to the depressed form of mental unsoundness." There is, therefore, a close relation between insanity and suicide, which emphasizes the importance of further research in the field of neurology and abnormal psychology.

Much valuable information would be derived from trustworthy *records of disease*. Many years ago a beginning was made to collect such records under the auspices of the New York State Medical Society and subsequently the State of Michigan inaugurated a system of weekly reports of sickness from health officers, under the direction of the late Dr. Baker. In 1876 Dr. Draper of Boston in the Report of the Masschusetts State Board of Health, contributed a suggestive discussion to the subject of Registration of Prevalent Diseases, and a Bureau of Health Correspondence was established, but the history of the movement is not a matter of record. By far the most suggestive and philosophical discussion of the value of registration of disease is contained in "Essays and Papers on Some Fallacies of Statistics Concerning Life and Death, Health and Disease," by Dr. Rumsey, published in London in 1875. About twenty years later Dr. Arthur Newsholme, now the Medical Officer of the Local Government Board, read an address on a "National System of Notification and Registration of Sickness" before the Royal Statistical Society, which is a most useful and suggestive contribution to the subject. This was followed in 1897 by a small treatise on "Wasted Records of Disease," by Charles E. Paget. All of these efforts may be summed up in the statement that a clear case has been made out for the utility of such records, but it is self-evident that unless there is an earnest and intelligent cooperation of the medical profession, the practical results must be very limited. From a life insurance point of view, the accurate and complete registration of general sickness would prove a most useful addition to knowledge and emphasize much more precisely than mortality records the local causes responsible for ill-health. The present opportunity is not suitable for the discussion of the technical difficulties which at first may seem insuperable, but I am quite confident that, considering the success which has been achieved with the notification of infectious diseases, the time is bound to come when all diseases and surgical operations will be made a matter of record.

The fallacies inherent in *crude vital statistics* have been so clearly apparent for many years that it is difficult to understand why obvious errors should continue to mislead the seeker after truth. The forced elimination of secondary or contributory causes of death involves the use of more or less arbitrary methods of statistical classification, which are recognized by most registration officials, but done away with by none. The difficulty is met by the use of the Budapest system of death classification, the value of which is as yet but very imperfectly recognized in the United States, including registration officers and life insurance companies. The utility of this method is shown to best advantage in a study of the mortality from diseases of the heart and urinary organs, and also in alcoholism and diseases of the liver. In fact, there are few deaths without more or less important complications and a thorough understanding of the mortality problem is out of the question until secondary or collateral causes are also taken into account. It may sound paradoxical, but it is true, that it is seldom that persons actually die of the disease which leads to death. It is also true that the whole subject of *death* has only within recent years attracted scientific attention and most of the earlier essays and works on death and the prolongation of life are of small intrinsic value. Reference may be made to the very suggestive essay on "Thanatology" by Dr. Roswell Park of Buffalo. Innumerable tests have been suggested for the positive diagnosis of death, but there has not been much advance in this direction since 1746 when a very interesting treatise on "The Uncertainty of the Signs of Death" and the "Danger of Precipitate Interments and Dissections" was published, with numerous illustrations of persons supposed to be dead and with some illustrations of persons restored to life. The ancient practice of long-delayed interment may find its justification in the uncertainty of the signs of death, although the classical treatise by Brouardel on "Death and Sudden Death" would seem to suggest abundant means for the prevention of what cannot but be considered the most awful possibility of human existence.

The literature of longevity and *the prolongation of life* is large and constantly increasing. The researches of Metchnikoff and others have placed the whole subject upon a sound and scientific foundation. The discourses on the "Means for the Prolongation of Life" by Sir Hermann Weber emphasizes the fundamental principle as regards conduct, that "work and moderation are the main source of health, happiness and long life." There is less mystery in longevity to-day than in former years and the conclusion is gaining ground that the attainment of normal old age is largely a matter of conformity to well-established principles not difficult in their application. There is much disutility in the argument that the average duration of life is increasing, since the gain which has been made primarily affects the younger ages. The chief concern is the preservation of adult life, which is of the highest social and economic importance to the State. The attainment of extreme longevity need not be a matter of much serious concern, but there would seem to be some evidence that the number of centenarians is increasing, but, as shown by Young, the numerous alleged cases of extreme longevity require to be viewed with suspicion, in the absence of really trustworthy documentary evidence as to the date of birth. The mere attainment of old age without the preservation of all the faculties is rather a hindrance to human progress than a help. As pointed out, however, by Dorland in his admirable discussion of the "Age of Mental Virility," "some of the greatest men and minds of all ages have attained to old age and some of the greatest works of genius have been produced after the age of 70 years." Opinions may differ as to the specific cause of old age, but progress is being made toward a better understanding of the contributory causes, at least, which shorten life and bring about premature senility. Metchnikoff's conclusion is that intestinal putrefaction shortens life in the large majority of cases of adults and that lactic acid is a means of preventing such putrefaction as shown by experiments on men and mice and by the comparative longevity of races using sour milk. There can be no question of doubt that autointoxication requires to be recognized as of much greater importance than is now generally assumed and it may serve as an explanation of many deaths attributed,

more or less erroneously, to so-called acute indigestion. If it is true that lactic ferments have been advantageously employed in cases of cancer of the stomach, Bright's disease, rheumatoid arthritis, etc., it is obvious that there are vast opportunities for the future prolongation of adult life which have heretofore been neglected.

In its final analysis, the true cause of premature death is largely a question of erroneous habits of life. It is certainly suggestive that the proportionate mortality from nervous and urinary diseases should be so decidedly excessive among persons of heavy weight. The same is true also for rheumatism and diabetes. It has properly been said that few persons take the diet best suited to their requirements, and the sum and substance of sound advice has been summed up by Sir Hermann Weber in the following rule:

"Observe moderation in food and drink and all other physical pleasures. Breathe pure air at all times. Take regular daily exercise, whatever the weather. Go to bed early and rise early. Take a daily bath and let the skin be well rubbed. Perform work regularly and cultivate a hopeful or optimistic disposition. Avoid alcohol and other stimulants and narcotic drugs, and finally make a resolute effort of will to preserve health and life."

The field of life insurance medicine today includes not only the primary function of risk selection, but also the conservation of human life in the individual and in the mass. Certain companies have gone so far as to publish pertinent suggestions with regard to the preservation of health and life to their policyholders, while the Association of Life Insurance Presidents has inaugurated preliminary measures for a sanitary survey of the United States. Some of the fraternal societies have established institutions for the treatment of chronic wasting diseases and one of the largest companies has commenced the issue of a quarterly publication devoted to the human conservation problem, as it affects life insurance policyholders in particular, and amplified by definite instructions in matters of personal hygiene. As said in an editorial in the *Journal of the American Medical Association*, with regard to this movement, "It is an evidence of the wisdom and progressiveness of the insurance companies to combine considerations of humanity with good business policy." Considering the vast importance of life insurance institutions to the public and the State, it is of the utmost importance that whatever is done should be done rightly at the outset, so that the faith of the people in the superior medical administration of these companies may not be shaken by the results of ill-advised experiments.

The function of general and even experimental research in the field of life insurance medicine becomes, therefore, a duty, which I have tried to emphasize in a few matters of detail and with a due regard to the difficult situation which confronts the companies in combining considerations of humanity with considerations of business necessity and business policy.

Chloride Retention in Exudative Processes of the Skin.—V. Menschikoff has found that children with the exudative diathesis react with a greater retention of chlorides than normal children. An increased ingestion of sodium chloride has no effect on the cutaneous manifestations. Children with manifest signs of the exudative diathesis show greater variations in the chloride metabolism than children with a latent exudative diathesis.—*Monatsschrift für Kinderheilkunde.*

ACCESSORY PANCREAS IN THE GASTRO-INTESTINAL TRACT.*

By C. L. GIBSON, M.D.,
NEW YORK,
SURGEON ST. LUKE'S HOSPITAL.

THE presence of misplaced islets of pancreatic tissue in various parts of the gastrointestinal tract was first described by Klob (*Zeitschrift der Gesselschaft der Aerzte zu Wien*, 1859). Since then quite a number of observations have followed and Opie describes quite fully ten instances found in eighteen hundred autopsies at the Johns Hopkins Hospital. This fact and other important data contained in this article are taken from the valuable treatise of Opie on the Pancreas, second edition. Until quite recently the occurrence of an accessory pancreas was looked upon as of little practical significance, its existence being demonstrated as an incident of post-mortem findings.

Opie says "A true accessory pancreas is a mass of pancreatic tissue wholly separated from the pancreas and provided with a duct of its own. Such isolated masses of glandular tissue derive some importance from the possibility that they may perhaps vicariously assume the function of the main organ when it is diseased and that they may cause diverticula or hernia of the intestinal wall. They may be divided into two groups—those situated above the pancreas in the stomach and duodenum and those below the gland in the duodenum and jejunum.

"Small masses of aberrant pancreatic tissue are usually about 1 cm. in diameter, one is described as 4.5 x 3.5 across and 1 cm. in thickness. More than one may occur in the same individual."

Pathological changes affecting accessory pancreatic tissue. Opie speaks of fat necrosis occurring about an aberrant nodule. Also "the isolated nodule tends to produce chronic interstitial inflammation, and interstitial tissue is almost constantly present in greater quantity than in the normal gland." Inflammatory changes are probably dependent upon occlusion of the minute often tortuous ducts and are doubtless intensified by invasion of bacteria from the stomach or intestine.

The following case of aberrant pancreas was observed by me in June, 1909:

MISS F., age 25, milliner. Family and previous history unimportant; has never been in very good health. For the past two years she has had stomach trouble, characterized by epigastric pain, occasional vomiting, on one occasion of blood. The pain comes somewhat periodically, but is increasing in frequency and intensity, so that she is prevented from pursuing her occupation. She is somewhat pale and anemic; physical examination was negative except for some tenderness in the right hypochondrium.

I saw her in one of the attacks of pain, an unusually severe one, in which she gave every appearance of a person suffering from biliary colic. An exploratory operation was finally decided on, the presumptive diagnosis being cholelithiasis or gastric ulcer, or both.

At operation a circumscribed, slightly elevated, well marked tumor about the size of a quarter was found an inch proximal to the pylorus on the anterior wall. It was excised. The patient made a good surgical recovery and for some months the stomach symptoms were alleviated but returned, though perhaps not quite so severely. Her general condition remains poor.

The gross examination of the specimen showed

*Read before the Practitioners Society, May 3, 1912.

on the mucous surface a rather racemose conformation with a central opening as of a duct. Although I said at the time that it looked like a gland, the true nature of the condition which should have been apparent at once, if one had the condition in mind, escaped me as well as several observers. In fact, from one pathologist we had a microscopic report as adenocarcinoma.

The final report is as follows:

Diagnosis: Aberrant pancreatic tissue in the stomach wall.

Macroscopical examination: Ulcer of stomach. Specimen consists of flat oval piece of stomach wall, 2.5 x 2 x 0.5 cm. Section cut through one ragged edge and through a small nodule at one part.

Microscopical examination: Section through nodule shows masses of epithelial cells which to a faint degree simulate in their arrangement glandular tissue packed closely together with almost no stoma. There are many cysts and ducts lined with high glandular epithelium, which itself is occasionally filled with mucus. Both the adenomatous tissue and the closely packed cells lie in the muscularis. No mitoses found. The general structure of the epithelial masses suggests the pancreas, and though no islands of Langerhans can be found the tissue is probably pancreatic. The ducts and cysts also render this diagnosis probable. The mucosa of the stomach is not normal. There is considerable growth of epithelial cells in the mucosa, probably a portion of the pancreatic nodule. There is no reason to consider the specimen an adenoma or a carcinoma.

Various forms of examinations had been made before operation. An *x*-ray (bismuth) of the stomach seemed negative, but with the findings in mind the plate was reviewed and showed at the site of the pancreatic lobule a thinner and shadowy appearance which, with our greater experience to-day, would be suggestive of a pathological process.

Frankly, I doubt if this pancreatic lobule accounted for the patient's symptoms, particularly as it did not impinge on the pylorus. That such a lobule may cause mechanical obstruction if rightly situated is evident from the following case,* some of its features resembling Miss F.'s condition.

Man, 37, gastric symptoms two years, increasing severity in past three months, attacks of severe pain like biliary colic. At operation a tumor size of a large pea was found within the pylorus. Supposing it to be a growth, the pylorus was resected. Temporary relief, later return of symptoms. Examination showed that the tumor blocked the pylorus; it was an adenoma of an aberrant pancreatic lobule.

The authors state that they have been unable to find a similar case, but I am inclined to think that I had some years ago such a condition which in my ignorance of the subject I failed to recognize.

The patient was an elderly man, much reduced by a supposed carcinoma of the stomach. An exploratory operation showed the presence of a somewhat movable rounded mass the size of a small cherry springing from the anterior wall of the stomach close to the pylorus. Removed by incising the stomach, being nearly pedunculated. Relief of symptoms, restoration to health.

I believe now this condition might have been demonstrated to be pancreatic tissue, as it quite closely resembled the case just quoted.

The great bulk of these pancreatic lobules are situated in the different parts of the small intestine. Some of them are located in the usual site of the Meckel's diverticulum, that is in the last two feet of the ileum. In many, perhaps most cases, they form a diverticulum which apparently closely simulates a Meckel's diverticulum, and may give rise to pathological changes of importance, as may be judged by the following case reported by Mr. Alexis Thomson.

"*Acquired Diverticulum of Lower Ileum with Accessory Pancreas Causing Symptoms of Acute Appendicitis.*"—Man, 33 years old, acute symptoms, temperature 103°—operation. A small amount of clear serum escaped, appendix apparently healthy. About eighteen inches from the ileocecal valve a diverticulum was found of the "finger of a glove" type, presenting a bulbous enlargement resembling in shape the penis. Its peritoneal coat showed a thin deposit of fibrin, but no undue vascularity. Uneventful recovery.

Description of the specimen: The diverticulum in the contracted state (due to fixation in alcohol) measured 3 centimeters in length; the tubular portion measured 1 centimeter in diameter, while the club-shaped extremity measured 1.3 centimeter. The tubular portion presented the appearance of normal small intestine, the club-shaped portion appeared to be composed of fat; there was a hollow constriction intervening between the two portions. On section the club-shaped portion was seen to be solid and to constitute fully one-half of the entire diverticulum, its center presented a lobulated appearance, as if composed of gland tissue, while the cortex consisted of fat. . . . At the distal end of the tubular portion and confined within the longitudinal muscular coat is a minute, well-defined mass of pancreatic tissue, the lobules of which are arranged as in the normal pancreas, and are provided with an average number of ducts. . . . Transition forms are also met with between the most minute of the newly formed ducts, and the solid masses of the cells which give the cancerous appearance to the parts thus affected.

The clinical features of the case just described have put me in mind of a case operated on as a Meckel's diverticulum, the gross appearances quite closely duplicating Mr. Thomson's description. No microscopic examination was thought of then; in the light of our more recent investigation such are now imperative and may increase our knowledge.

From the embryonic standpoint diverticula due to accessory pancreatic islets should be limited to the small intestine. We do see great misplacements of other tissue such as the adrenals in unexpected places, and I have been led to speculate whether some of the diverticula of the larger intestine, particularly of the sigmoid, might not owe their origin to such a cause.

72 East Fifty-fourth Street.

*Reynier & Masson: *Bulletin de l'Academie de Médecine*, Vol. 62, 1909.

THE TREATMENT OF HYPERACIDITY—THE FRENCH VIEWPOINT.

By MARTIN E. REHFUSS, M.D.,

PARIS, FRANCE.

Notwithstanding the enormous amount of clinical material and the abundant clinical observations on the subject of hyperacidity, the precise factors which determine an alteration in gastric secretion are not known. Many concomitant conditions are constantly observed, but the relation between and the mechanism by which they induce these changes are but imperfectly understood. That definite organic conditions such as appendicitis, cholecystitis,

cholelithiasis, and nephrolithiasis can give rise to hyperacidity of the gastric juice must rest unquestioned inasmuch as removal of the cause results in prompt amelioration of all the symptoms and a lowering in the acidity as determined by analyses. That the quality of food and the rapidity of ingestion play an important rôle must be equally acknowledged inasmuch as a sensitive stomach readily reacts to these stimuli. That certain constitutional states such as gout and chlorosis as well as neurosis seem to be factors is the conclusion of men who have had great experience in this condition. The same may be said of the hyperacid states following the excessive ingestion of alcohol and the abuse of tobacco. Finally ulcerative conditions of the gastric mucosa, whether induced by it or inducing it, in turn make it play a very important part in the diagnosis of that condition. Putting aside all these causes, however, there are a certain number of cases in which none of the above named factors seem to operate and there seems to be a disposition on the part of gastric mucosa to react to the slightest stimuli with the formation of hyperacid gastric juice. Some experiments in which I have been recently engaged would seem to show that the stomach has great eliminative powers and in cases of insufficient elimination elsewhere, the stomach can partially assume this function. This is well known in the case of uremia and it is probable that many drugs can also be eliminated in this way. It is possible that during the process of elimination hyperacidity can be induced. Bourget in his "Maladies de l'Estomac," just published, says that the commonest cause of hyperacidity, however, "outside of that attending ulcerations, is certainly a neurosis with, as its habitual complement, spasm of the pylorus." Before leaving the subject of hyperacidity, an important point in the analysis of this condition is the fact that a number of medicinal substances can by prolonged usage produce hyperacidity and principal among these is sodium bicarbonate when used in too strong concentration or when used to excess.

It is therefore interesting in the study of this important condition to study the methods based on the results of an enormous number of cases used in the treatment of this condition in France. By means of the precise methods of chemical examination of the gastric juice following the method of Hayem and Winter, the careful determination of the mechanical function, and the *x*-ray of the stomach by direct vision with the screen as practised by Beclere, Bensaude, and others, gastric conditions have been more sharply differentiated and organic faults separated from those the result of purely functional disturbances.

The question of the diet in this condition is, of course, an important one and the general consensus of opinion leans toward a mixed or lacto-vegetarian diet. The fundamental idea of sedation is generally considered preferable to the use of a nitrogenous diet which although it fixes the excess of acid does not reduce its formation. In the severest cases, an absolute milk diet is enforced, but in the milder grades a lacto-vegetarian diet such as Robin indicates under the treatment of "dyspepsia hypersthenique" is the one adapted. Robin gives for breakfast a cup of extremely weak tea, a slice of well toasted bread and butter, and a compote of stewed fruit. The tea may be replaced by a thin cereal such as oatmeal or rice. To individuals with a large appetite, he permits a soft boiled egg. For lunch and dinner, a choice is made of the following: "bouillon-du-pot-au-feu," which is bouillon prepared from the ordinary ingredients, but allowed to simmer for a long time and to which many vegetables have been added—the whole being well skimmed of fat, in reality a strained vegetable soup prepared slowly. Purées of all the vegetables, prepared with water and a little butter, light fish, salads without dressings, macaroni, and much later chicken and well roasted beef, without juice or sauce. Eggs very moderately, and salt is diminished without being suppressed. As entrements beaten cream or white of egg and as dessert stewed fruit. Little bread is permitted and only when well toasted. As to drinking, he recommends pure water or Evian, or a very feebly alkaline, nongaseous water such as Alet.

In the medical treatment of this condition many methods have been extolled such as almost complete suppression of the salt, or a fatty diet, or the galvanization of the vagus or even internal galvanization of the stomach as well as intragastric sprays, but the method of choice in our present state of knowledge is alkaline medication. Bourget points out the method which nature employs to relieve this affection. He says: "You have remarked, no doubt at times in your own case, after a repast a little more copious than ordinarily that the salivary secretion is slightly exaggerated toward the third or fourth hour of digestion, and you swallow more of that saliva, which, coming from different glands, is alkaline in reaction. It can therefore feebly correct the exaggerated gastric acidity. All hyperchlorhydriacs have unconsciously contracted the habit of stimulating their salivary secretion by a form of suction of which one may readily observe the mechanism. They can therefore extract from their salivary systems a larger quantity of saliva, which they swallow and which gives them temporary relief." He adds: "I have often observed in inveterate hyperchlorhydriacs a distinct hypertrophy of the most prominent salivary glands such as the submaxillary and parotid groups, without doubt an evidence of exaggerated function." He believes that the mucus removed from the stomach by tubage in these cases is salivary in origin.

Robin ("Therapeutique Usuelle du Praticien") in his treatment of "dyspepsia hypersthenique," a condition of which the essential feature is hyperacidity, indicates one method of dealing with these cases. He gives 8 to 12 drops of the following mixture about ten minutes before meals in a little water: equal parts of tincture of belladonna, tincture of hyoscyamus, and tincture of opium. The belladonna, according to Robin is a secretory moderator and with hyoscyamus has a sedative action on the gastric filaments of the vagus. The opium calms the gastric hyperesthesia. The dose seems feeble, but he claims sufficient and without any deleterious action on the stomach. After the meal, to saturate the hyperacidity and to prevent the spasm of the pylorus as well as to inhibit prolonged irritation of the mucosa, he gives the following powder in a little Vichy water: magnesium hydroxide and bicarbonate of soda, of each 8 grams; white sugar and precipitated carbonate of calcium, of each 16 grams; mix and make 24 powders; after each meal take one in a little Vichy. This he calls the powder of "petite saturation," but when severe pains, cramps, and heartburns make themselves apparent, he gives the second powder, which he calls

the "powder of grand saturation," as follows: magnesium hydroxide, 1.60 gram; bicarbonate of soda, 1 gram; white sugar, 2 grams; codeine, 0.01 gram; carbonate of calcium and subnitrate of bismuth, of each 0.80 gram; mix and make one powder. This powder seems to border on polypharmacy, but Robin finds in each ingredient an indication. Magnesium hydroxide saturates the acids of the stomach and forms with them a chlorolactate of magnesium, which stimulates the muscular fibers and in this way gives rise to the normal evacuation of the stomach and intestines. Bicarbonate of soda has the property of combining much more rapidly with the acids than the earthy alkalies and of giving the patient an immediate feeling of relief. Soupalt claims that the relief produced by the ingestion of bicarbonate of soda is not so much due to the neutralization of acid as to the disengagement of carbonic acid gas which is distinctly analgesic. He says this explains the relief of pain seen in cases of hypoacidity, the opposite condition. The carbonate of calcium acts in the same manner as the former in its rôle of antacid, and is without laxative properties. The subnitrate of bismuth protects the mucosa and compensates for the occasional too laxative action of the magnesium. The codeine calms the solar plexus and finally the sugar is added to make the preparation palatable. The different ingredients are altered to suit each case; should there be diarrhea, the magnesium is reduced and the quantity of calcium and bismuth are increased; and in the case of constipation *vice versa*. The above prescriptions are most efficacious and freely used over here. In several clean cut cases of hyperacidity and pylorospasm, the above treatment left nothing to be desired.

Incidentally before leaving Robin's methods, it might be well to give several prescriptions for nausea pain, which is a more or less constant accompaniment, for which he recommends the following: Dionin, 0.20 gram; aq. laurier ceris (cherry laurel water), 10 grams; 6 to 8 drops to be taken with a powder of "grand saturation," or a tablespoonful of the following: Cocaine hydrochloride, and codeine of each 0.05 to 0.10 gram; lime water, 160 grams; and chloroform water, 40 grams. Finally, should this be insufficient, there is administered a teaspoonful of the following: Novocain, 0.05 gram; anesthesin, 0.40 gram; cherry laurel water, 10 grams; and simple syrup, 50 grams.

Bourget ("Maladies de l'Estomac," 1912) treats the hyperacidity in an entirely different way and gives the alkalies in considerable dilution. He advocates the use of sodium bicarbonate because it combines readily with the hydrochloric acid and forms the salt most acceptable to the bodily economy. Bourget insists on the following: (1) Solutions of the alkalies should not be given in concentration exceeding 1:100; (2) the supreme thing to be realized is not a neutralization of the acid, but a diminution to the normal point; (3) the effect of strong concentrations and powders is to stimulate the further production of acid. The following is the formula which he uses: Sodium bicarbonate, 8 grams; sodium phosphate, 4 grams; sodium chloride, 2 grams; and water, 1,000 cubic centimeters. He usually gives a prescription calling for six powders each containing the above quantity of the first three ingredients and to be dissolved in a liter of water. The addition of phosphate of soda, he claims has given him very good results, which he attributes to the exciting influence of that salt on the soluble ferments of the intestinal tract. The sulphate of soda also plays a rôle in intestinal digestion and furnishes the material for the formation of the conjugate sulphates, by which the organism can get rid of indol, skatol, and cresol, formed by intestinal fermentation. The above mixture he gives in doses of 50 to 100 cubic centimeters and if digestion is well supported without any untoward symptoms, he waits until the third or fourth hour for correction. In certain cases, there is an excess of acidity only during certain stages and it is at these times that he corrects it. He varies the proportions of the ingredients occasionally and in cases of high acidity he increases the bicarbonate to 10 grams to the liter, never more. If constipation obtains, he decreases the bicarbonate and increases the sulphate to 45 grams to the liter. He also mentions the use of mineral water in the treatment of this condition such as Vichy and Vals in France, Ems in Germany, Carlsbad and Marienbad in Austria, and Tarasp in Switzerland, though the above formula fulfills all indications.

Binet of Vichy has investigated the question of the action of sodium bicarbonate and discusses its action. Hayem accuses sodium bicarbonate of augmenting hyperacidity by excitation and also augmenting hypoacidity by draining the glandular secretions and eventually causing a gastritis. This is true after large doses or too long continued administration. Enriquez and Amba know the utility of the alkalies, but they do not consider them as medicaments capable of producing chloridization of the organism and of acting indirectly as agents producing hyperacidity of the gastric juice secreted. Binet from the result of his work comes to the conclusion that bicarbonate of soda is a substance inoffensive and invaluable in the treatment of dyspepsias providing that it does not exceed 4 to 5 grams a day, taken in 4 or 5 doses and on condition that it be combined with an appropriate dietetic régime especially suited to each case.

Fleiner in 1893, following the indication of Kussmaul, practised "pansement" of ulcer of the stomach by the use of large doses of bismuth subnitrate administered through the stomach tube. This method has been vulgarized in France by Hayem, Lion, and Mathieu. M. Agasse Lafonte, who was Hayem's chief of clinic for many years, tells me that Hayem in treating hyperacidity simply makes use of large doses of subnitrate of bismuth. He considers the other methods inefficient inasmuch as they merely relieve and do not cure. Furthermore, he claims, as stated above, that bicarbonate of soda augments the condition and begins his treatment by interdicting all medication, especially bicarbonate of soda and chloroform water. Hayem claims that subnitrate of bismuth is above all the medicament for pain as well as spasm. Especially in ulcer it causes a disappearance of pylorospasm which is one of the most fruitful causes of evil. Monneret considers it of use in hemorrhage and Lion and Ruault believe that it inhibits abnormal fermentation. Analyses have determined that there is a rapid reduction of acidity in the presence of bismuth and nearly all the chlorine is fixed on the bismuth in the form of an isoluble oxychloride. In the administration of bismuth Hayem orders in the morning 20 to 30 grams of subnitrate in a glass of water with several teaspoonfuls of syrup of acacia. The patient is put at the same time on a lactovegetarian diet and this treatment is kept up for 10 to 20 days. After 4 to

5 days of treatment distinct improvement is noticeable. The effect of the bismuth is to form a "pansement" or protecting layer and to excite the formation of a small layer of mucus, which aids in the result to be attained. Two objections apparently present themselves to this method, both of which seem to be without foundation. First, it would be supposed that such large doses of bismuth would absolutely lock up the bowels. The reverse is true and practical experience seems to show that large doses are actually laxative in action and that it is occasionally necessary to reduce the dose owing to diarrhea. Secondly, it will be urged that bismuth is toxic, especially the subnitrate. This was studied by Bensaude and Agasse Lafonte, especially with reference to accidents connected with *x*-ray work, and the conclusions which they draw are that the subnitrate only constitutes a danger when the medium in which it can act is alkaline, and in cases in which there are signs of actual obstruction. In the presence of these two factors through the action of certain bacteria the nitrates are changed into nitrites and the individual is intoxicated. This of course does not obtain in hyperacidity, where the medium is acid and clinical experience demonstrates that it is absolutely harmless. One individual has taken as much as three kilograms of bismuth subnitrate or 20 grams each on 155 successive days without any toxic symptoms. If pure bismuth is used the fear of intoxication by lead, antimony, or arsenic need not be feared.

It will be evident that each method has arguments in its favor and that each case must be a law unto itself. In ulcer without doubt the bismuth treatment is the best and has received the support of the majority of physicians. In hyperacidity accompanied by severe pain of short duration it is probable that the method of Robin offers the most satisfactory solution, while in the type of mild hyperacidity, with heartburn and pain lasting over several hours, the prescription of Bourget given in repeated small doses is best. Finally, in the mildest cases the simplest of the feebly alkaline nongaseous mineral waters might be appropriately administered.

American Hospital.

ENLARGEMENT OF MEDIASTINAL GLANDS.*

By GUSTAV F. BOEHME, Jr., M.D.,

NEW YORK.

ASSISTANT PHYSICIAN BELLEVUE HOSPITAL OUT-PATIENT DEPARTMENT; CLINICAL ASSISTANT, DEPARTMENT OF INTERNAL MEDICINE, ST. BARTHOLOMEW'S CLINIC.

The study of a case of mediastinal gland enlargement due to syphilis led to the rather careful investigation of this field, and this paper is presented as a review of the subject matter found. No originality is claimed, yet so little time is given to the diagnosis of these conditions that we feel justified in here presenting a résumé of the clinical picture of mediastinal glandular involvement.

The anatomy of the region is doubtlessly clear, the mediastinum consisting of two portions, the upper of which lies above the upper limit of the pericardium and the lower beneath it. The latter is again divided into three portions, the anterior, middle, and posterior mediastina lying relatively in front of, including, and behind, the heart. The superior mediastinum contains the arch of the aorta, the innominate artery, the thoracic portion of the left carotid and subclavian arteries; the upper half of the superior vena cava and the innominate veins; the trachea, esophagus, and the thoracic duct; remnants of the thymus gland and lymphatic glands; and the pneumogastric and left recurrent laryngeal nerves. The anterior mediastinum contains loose areolar tissue, lymphatic vessels from the liver, the anterior mediastinal glands and small mediastinal branches of the internal mammary artery. The middle mediastinum contains the heart, aorta, lower half of the superior vena cava with the vena azygos major; the bifurcation of the trachea and two bronchi, the pulmonary artery dividing into two branches; the right and left pulmonary veins, the bronchial glands, and the phrenic nerves. The posterior mediastinum contains the descending thoracic aorta, the greater and lesser azygos veins, the pneumogastric and sympathetic nerves; the esophagus, the thoracic duct, and the lymphatic glands. It will therefore be plainly evident that enlargement of any kind in these regions will press upon important structures and by this pressure cause definite symptoms. As we are particularly interested in the glandular involvement a study of these glands will be necessary.

The thoracic glands may for convenience be divided into three groups: (1) the anterior mediastinal nodes, five or six in number which lie in front of the transverse arch of the aorta. (2) The posterior mediastinal nodes which surround the esophagus, but are more numerous in front of it. (3) The peritracheobronchial nodes which are divided according to Barety into four groups: (a) the group to the right of the trachea extending from the right bronchus upward to the region of the subclavian vessels; (b) the group to the left of the trachea ascending from the left bronchus to about the arch of the aorta and the recurrent laryngeal nerve; (c) a group about and below the bifurcation of the trachea, commonly known as the bronchial glands; (d) the interbronchial nodes lying in the angles of the bifurcation of the large bronchi.

In his monograph, "Tuberculosis of the Bronchial Lymph Nodes," Professor Schlossman of Düsseldorf divides them into the tracheobronchial nodes, the bronchial nodes, and the pulmonary nodes. He further declares that "their enlargement leads most especially to pressure upon the trachea, the larger and middle sized bronchi, as well as upon the recurrent laryngeal nerve." According to Friedleben the nodes "lying below the concavity of the right subclavian are frequently affected, especially in tuberculosis." The lymph enters these glands from the anterior portion of the diaphragm, from the upper surface of the liver, from the pericardium, and from the thymus. The posterior mediastinal glands receive lymph from the esophagus, the posterior part of the diaphragm, the pericardium, and the liver.

History.—The first time mediastinal disease was mentioned was by Thomas Wells in 1670. In 1742 a steatoma of the anterior mediastinum was recorded by H. Boerhaave. Lieutaud, between 1703 and 1780, reported several cases of mediastinal disease. The first textbook description was that by G. C. F. M. Lobenstein in 1835. Since that time numerous articles have appeared, among which the study of some 520 cases by Professor H. A. Hare in 1889 and the article of Pepper and Stengel on

*Read at a meeting of the Tri-Professional Society, March, 1912.

mediastinal tumors are probably of classic interest.

Varieties of Mediastinal Lymphatic Gland Enlargement.—(1) Acute lymphadenitis: (a) hyperplastic; (b) exudative or suppurative. (2) Chronic lymphadenitis. (3) Tuberculosis of glands. (4) Syphilitic envolvement in (a) secondary stage; (b) tertiary stage (gumma). (5) Hyperplasia (lymphoma: (a) leucemic; (b) pseudoleucemic (Hodgkin's disease). (6) Tumors: (a) sarcoma, (b) fibroma, (c) myxoma, (d) chondroma, (e) endothelioma, and (f) carcinoma.

Etiology and Pathology.—Acute lymphadenitis of the hyperplastic type follows diphtheria, scarlet fever, typhoid fever, and the bronchitis of measles. It is also present in pertussis as a fairly constant symptom and, because of pressure effects, according to de Mussy, is responsible for the paroxysms of whooping cough. Pathologically the picture is one of hyperemia and hemorrhage in the lymph nodes with a proliferation of the mononuclear elements. Necrosis of the hyperplastic tissue occurs in some instances, *e.g.* in typhoid fever, diphtheria, or scarlet fever. Generally resolution occurs, or if necrosis occurs, fibrosis may fill in the area, or suppuration ensues. Acute lymphadenitis of the exudative or suppurative type occurs as a rare sequence of the acute hyperplastic type, in pyemia, and septicemia or secondary to a tuberculous process. The picture is one of a suppurative inflammation anywhere. In the type following secondary infection of the tuberculous glands grave complications may ensue. Rupture into the esophagus, the bronchi, and the aorta have been described. Sidney Phillips described a case in which the gland had ruptured into the aorta and a bronchus at the same time, giving rise to attacks of hemoptysis for a considerable period of time. Chronic lymphadenitis occurs as a result of frequent moderate degrees of inflammation and as a result of the constant inhalation of dust. This latter type is met with chiefly in pneumokoniosis. Two pathological types exist: (1) The type in which the fibrous tissue is markedly increased due to constant irritation or (2) the type in which the cellular elements are increased in number and the glands are much enlarged.

The enlargement of the mediastinal glands due to tuberculosis and its relation to pulmonary tuberculosis is a subject which in itself requires more study. It will suffice to state that up to the present time various modes of infection by the tubercle have been described. The avenues of infection are numerous and of these the following are suggested: (1) Following cervical tubercular adenitis. Here, however, we would suggest that such path of infection is not proven. Recent experiments in which the cervical lymph glands were injected with a colored fluid show no connection between the cervical and the bronchial glands. (2) Following pulmonary tuberculosis. The lymphatics of the lungs all drain into these glands and secondary infection occurs here. It is extremely easy to come to the conclusion that such glands caused the pulmonary tuberculosis when as a matter of fact a low grade pulmonary tuberculosis has been responsible for their enlargement. (3) Hematogenous infection. The lymphatics are in direct communication with the blood and tubercle bacilli in the circulation may readily find lodgment within them. Of the three possible modes of involvement the latter two seem the more logical.

Syphilitic involvement of the mediastinal glands may be of two types; that occurring in the general lymphatic enlargement accompanying the second stage of this disease, or the tertiary involvement by gumma. Of the two, the latter is the type most commonly described. The pathological changes in the glands are those of similar syphilitic processes elsewhere and do not need description here.

An interesting variety of mediastinal lymph gland involvement is that known pathologically as lymphoma or hyperplasia of the lymphatic glandular structure. This is of two types: (1) Leucemic lymphomata accompanying lymphatic leucemia or (2) the pseudoleucemic lymphomata occurring in Hodgkin's disease. The latter type is usually primary, the former more often secondary to other lymphatic enlargements due to the disease.

Of the tumors of the mediastinal lymphatic glands the most common, according to Hare's figures, are the carcinomata They may be primary, but more often are secondary to tumors elsewhere. Such secondary involvement may follow a number of avenues. It may enter through the chest wall from the breast through the lymphatics draining into the chain of glands following along the line of the internal mammary arteries. Again it may be carried by vascular embolism from an external focus. The disease may spread from abdominal organs to the under surface of the diaphragm, and may penetrate it by way of the lymphatics and thus reach the glands of the chest. Or embolism may "occur through the thoracic duct to the chest and then by retrograde metastasis to the mediastinal glands," as described by Tyson. Sarcomata may be primary or secondary and are not uncommon. They are often, when primary, mistaken for aneurysm of the aorta. All types of the tumor may be presented. Numerous other tumors have been described. Most are secondary; some, however, as the fibroma and myxoma, may be primary. Chondroma and epithelioma are usually secondary.

Symptomatology: The symptoms due to the enlargement of the mediastinal lymph nodes are manifold and present a bizarre picture. Oftentimes the condition may be entirely latent and is only recognized at autopsy. This is plainly shown by the report of the result of 7,506 autopsies at the Marine Hospital at Cronstadt, among which 158 malignant mediastinal tumors were found. The condition is suspected in so few instances, and may, as in the case to be described, be so masked by other more evident signs that it may be entirely overlooked unless careful routine physical examination is undertaken. The disease can readily be divided into two types: (1) Mediastinal glandular enlargement occasioning chiefly physical signs, and (2) mediastinal glandular enlargement occasioning symptoms and but few physical signs. The first type is more often met with in involvement of the anterior mediastinal nodes; the latter, in enlargement of the middle and posterior mediastinal nodes. As the pathological and anatomical distribution of the glands varies the clinical picture so much we shall here attempt to classify the semeiology and symptomatology according to such arrangement.

I. Lymphatic enlargement in the anterior mediastinum. This is more often only discovered on careful routine physical examination. Symptoms develop only with considerable enlargement of these glands. They may be summarized as follows: (1) Marked prominence and distention of the veins of the upper part of the body. This is usually accompanied by coldness of the upper extremities, cya-

nosis and edema. If the disease is of long standing, clubbing of the fingers occurs. These symptoms are explained by the pressure of the enlarged glands on the superior vena cava and the right and left innominate veins, damming back the blood into the upper extremities and the head. (2) Inequality of the radial pulses may appear due to pressure upon the arteries, chiefly the subclavian. The tumor may thus be mistaken for aortic aneurysm. (3) Hoarseness and even aphonia occurs in the majority of cases occasioned by pressure upon the recurrent laryngeal nerves. The left nerve is more often pressed upon because anatomically it circles below the aortic arch in close proximity to the greater number of mediastinal glands. (4) Inequality of the pupils may occur, due to pressure on the sympathetic nerves. (5) Unilateral flushing of the face sometimes is present, due to a similar cause. (6) The pulse varies. It may be exceedingly slow because of pressure on the pneumogastric nerve or it may be very rapid because of involvement of the sympathetic nerves, or the pulse may be very irregular due to both causes. (7) Cachexia may be present. This is preeminently the mediastinal lymphatic gland involvement of physical signs. Usually they do not appear until the involvement is very extensive, hence may often be missed. The signs so far described are somewhat as follows: (1) Bulging of the sternum with, in some cases, erosion of the bone itself. (2) Displacement of the apex-beat usually downward and to the left. (3) Pulsation may be present. It is synchronous usually with the systole of the heart, but it is not expansile, differentiating it from the impulse of aortic aneurysm. (4) Tactile fremitus may be increased or diminished depending entirely on the location of the tumor and its relation to the lung. (5) An abnormal area of dullness may be mapped out, in some instances, of irregular shape just above the upper cardiac limit. (6) Auscultation is usually negative. In some instances, however, there may be changes in vocal fremitus, which may be increased or diminished, depending on the locality of the glandular enlargement and its relation to the lung. A systolic bruit can sometimes be elicited which is probably due to pressure of the mass on the aorta or pulmonary artery. (7) In some instances signs of hydropericardium or hydrothorax may be present. These conditions are due to pressure on the great vessels damming back the blood and thus interfering with circulation.

Lymphatic enlargements in the middle and posterior mediastinal spaces. These may be entirely latent and are often found only at autopsy, especially those of the tubercular variety. The acute lymphadenitis is extremely difficult of diagnosis, although according to de Mussey, an area of dullness over the upper part of the interscapular region and dorsal vertebræ, as far down as the fourth, is diagnostic of posterior mediastinal lymphatic enlargement and is constant in pertussis. Such views, however, are not held by many able clinicians. The suppurative adenitis is often missed and it should not be forgotten (and here I quote Butler) that "a single profuse expectoration of pus during the course of pulmonary tuberculosis may be due to the rupture of a gland into the lung." The septic type of temperature with a leucocytosis should not be forgotten as a clinical indication of a suppurative process. In general, glandular involvement of these regions present few, if any, physical signs and the diagnosis is made by the symptomatology. The chief symptoms follow: (1) Dyspnea usually of an inspiratory type is due to pressure on the trachea or bronchi, or pressure on the recurrent laryngeal or vagus nerves. (2) Cough, which is often paroxysmal and whooping in character. It is attributed to the joint involvement of one vagus and pulmonary plexus. (3) Dysphagia due to pressure on the esophagus. (4) The pulse varies in a similar manner to the variations in anterior mediastinal involvement. (5) Vomiting occurs and is said to be due to vagal irritation transmitted reflexly to the stomach. (6) Edema of the upper part of the abdomen and serous effusion into the chest may be present and are caused by pressure on the vena azygos. Direct pressure on the vena cava inferior may cause ascites and hepatic congestion. (7) Syncope is not unusual and is attributed to pressure on the vagus. (8) Fever is moderate or may be entirely absent. (9) Cachexia is far more frequent in this type of involvement than in anterior mediastinal gland enlargement. The physical signs of this condition are slight and are those previously described under acute lymphadenitis: an area of dullness in the interscapular region extending downward to the fourth dorsal vertebra.

Diagnosis.—The presence of mediastinal lymphatic enlargement is usually missed unless the clinician is particularly interested in this field of physical examination. The type of enlargement must be determined by the history of the case, the blood picture in the leucemic enlargement and in Hodgkin's disease, and the serum reactions in syphilitic growths. Sometimes external foci may assist in clearing the diagnosis. Sputum examination and tuberculin reactions point to tuberculous involvement. The differential diagnosis from aneurysm of the aorta, pericarditis with effusion, and pleurisy with effusion must be made. From aneurysm of the aorta the diagnosis is made by the history of the case, the diastolic shock, the tracheal tugging, and the expansile pulsating tumor which is present in that condition and not in mediastinal lymph gland involvement. Careful analysis of the physical signs will readily differentiate pericarditis and pleurisy with effusion. Tumors of the thymus, pleural tumors especially endotheliomata, and other similar growths within the mediastinum must be differentiated by the particular physical signs of each case and the clinical sense of the observer. The *x*-ray is often of material assistance in outlining the tumor.

Treatment.—The treatment varies with the causative factor and as a general rule is very unsatisfactory. If there is a simple adenitis due to pertussis, one of the exanthemata or a bronchitis, expectancy so far as the local process in the glands is concerned, is the practice with the proper therapy of the underlying cause. If suppurative adenitis is suspected, aspiration may be tried with caution, followed if necessary by operative procedures. The general treatment can be outlined as follows: A. Medical: (1) Treat the cause: *e. g.* the use of mercury and the iodides in syphilitic processes; arsenic in sarcoma, Hodgkin's disease and leucemia. (2) Supportive: Proper diet and stimulation. (3) Symptomatic: Meet pressure symptoms and signs of other involvements as occasion may arise. Cough and dyspnea, the most urgent symptoms usually, are met medically with narcotics and inhalations of oxygen. B. Surgical: (1) Intubation or tracheotomy if urgent dyspnea is present, or intratracheal insufflation may be tried. (2) Opening into the

thorax under negative pressure (Sauerbruch apparatus) or positive intrapulmonary pressure (diver's helmet with compressed air). Walker of Detroit has successfully operated on a large fibrosarcoma of the anterior mediastinum. (3) The .r-rays may be used in Hodgkin's disease and leucemic enlargements. Combined with Coley's mixed toxins the .r-rays are said to have caused the subsidence of sarcoma and lymphosarcoma.

Case I.—J. R. Born in the United States. Family history negative. Previous history: Went to school from his fifth to his fifteenth year. He then worked as an order boy to his nineteenth year when he entered the United States navy. With Admiral Dewey he went to Manila and took part in that battle. He remained in the Philippines, undermining his health by all excesses. Then he returned to the United States and joined the Jersey City police force, serving for six years, and was finally forced to leave the service. He then knocked around the country as a hobo and finally returned to Jersey City. Habits: Sleeps poorly because of dyspnea. Appetite good; bowels regular. As long as he can remember his bladder control has been poor, at times being incontinent. Has a sharp pain whenever he urinates. His urine has never been smoky or cloudy. The quantity voided daily has increased; has to get up a half-dozen times a night to urinate; his first attempt at micturition results in a few drops being passed; later the stream becomes powerful. Alcoholic: Has always been a heavy drinker, taking as many as twelve glasses of whiskey daily. Coffee: Drank as many as half-a-dozen cups of coffee at one meal. Loss of weight: He declares that he has lost 50 pounds in the two months preceding this history. Has had marked night sweats. Venereal: Has had gonorrhea about a dozen times. So far as he knows he has never had a stricture nor have any sounds been passed. Ten years before the present trouble he had a chancre, followed by an eruption over the entire body, a sore throat and later leg ulcers. He never underwent any medical treatment for his venereal disorders.

Previous medical history: As a child he had measles, scarlet fever and pertussis. Appendicitis when 23 years old. Still later had half-a-dozen epileptic attacks of alcoholic origin. Yellow fever and malaria when in the Philippines. Previous surgical history: While in the Philippines was struck on the head by a bolo and lay unconscious for two days. Present illness: One year ago while in Florida he noticed a shortness of breath especially when lying down at night. While erect the dyspnea ceased. He began to cough and brought up a considerable amount of white sputum which later became blood tinged. After six months he came North and spent his summer in northern New York. His condition grew progressively worse until the shortness of breath continued day and night, and the patient entered the Utica City Hospital where he was treated for nine days for asthma with potassium iodide, under which treatment he improved. He then came to Jersey City, where he received medical treatment from various physicians. He finally entered the City Hospital complaining of shortness of breath night and day, and huskiness of voice. He also suffered from a cold with cough, which was productive of a white sputum, very scanty in amount. Physical examination: Height, 5 feet 9 inches; weight, 142 pounds. Temperature, 100.4°; pulse, 80; respiration, 24. The patient was poorly nourished, and his muscles were flabby. Mucous membranes anemic. Body showed numerous symmetrically distributed brown spots. Legs show old scars from ulcers. The patient feels weak and has a slight degree of vertigo. The eyes show a slight degree of inequality of pupils, otherwise are normal. Hearing is normal. Cutaneous sensibility is normal. No Romberg. Speech: Voice is extremely husky, sometimes descending to a whisper. Thorax: Chest is well developed; broadened in the anteroposterior diameter. Sternum convexly curved. No visible pulsations or tumors. An area of increased tactile fremitus over the left side anteriorly from apex to fourth rib and to the fifth rib posteriorly. No abnormal pulsations palpable. An area of dullness from the apex to the fourth rib on the left side anteriorly and to the sixth rib posteriorly can be mapped out. A second distinct area of dullness can be mapped out as follows: Upper border, ¼ inch below suprasternal notch; to right, 3 inches from median line irregularity; to left, 2½ inches from median line; below melts into upper cardiac dullness. Over the area of dullness on the left side bronchial breathing with moist râles. Over the area of dullness in the median line the breath sounds were obscured. No bruit could be made out. Heart normal. Abdominal: No abnormalities. Rectal examination showed an enlarged prostate. In the physical signs attention is directed to an area of dullness just above the heart.

Clinical pathological findings: The urine showed the picture of chronic parenchymatous nephritis. Blood: Red cells, 4,608,000; leucocytes, 16,000; hemoglobin, 90 per cent. Differential: Polynuclears, 78.6 per cent.; lymphocytes, 19.2 per cent.; eosinophiles, 1.4 per cent.; transitionals, .5 per cent.; mast cells, .3 per cent.; Noguchi test, positive. Sputum showed tubercle bacilli. The diagnosis made at this time was (1) chronic pulmonary tuberculosis; (2) chronic parenchymatous nephritis; (3) mediastinal tumor, probably of syphilitic origin. Potassium iodide was prescribed in increasing doses, but the next day the dyspnea grew worse and the voice more brassy. On December 15 the patient was seen by Dr. Bull, who diagnosed the condition as one of paralysis of the vocal cords due to recurrent laryngeal nerve involvement and the patient was intubated. Injection of mercury salicylate in alboline were then advised, under which treatment the patient improved, the tube being removed. The voice became clear and the dyspnea nearly disappeared. The patient, who was rather querulous and of a combative disposition, then refused further injections and his condition grew worse. Mercury protoiodide was then resorted to in doses of 1/6 grain t. i. d., and the patient again cleared up nicely. Finally on February 9 he went home much improved. On his discharge from the hospital the area of dullness in the median line had nearly disappeared, and only a small area posterior to the sternum showed any dullness.

This case then presents, besides the chronic conditions, a clinical symptom-complex as follows: A history of syphilis, a positive Noguchi test, a hoarse voice, dyspnea, paralysis of vocal cords, an area of dullness just above the cardiac area, inequality of the pupils, and reaction to specific treatment. The whole picture would seem to indicate a mass pressing upon the recurrent laryngeal nerves occasioning the pressure symptoms noted. As aneurysm of

the aorta can be ruled out, the most logical conclusion seemed to be enlargement of the middle and anterior groups of the mediastinal glands due to syphilis.

BIBLIOGRAPHY.

Coakley, C. C.: "Fatal Case of Asphyxia Due to Pressure by a Tuberculous Mediastinal Gland on Trachea and Bronchus," Report of American Laryngological Society, thirty-second annual congress.

Delavan, D. Bryson: Similar case, *Ibid.*

Kidd, P.: "Mediastinal Affections," *Lancet*, March 4, 1911.

Stoll, H. F.: "Diagnosis of Tuberculosis of the Bronchial Glands," *American Journal of Medical Sciences*, January, 1911.

Roch, M.: "Le Signe D'Espigne dans le diagnostic de l'adenopathie tracheo-bronchique de l'adulte," *Semaine Médicale*, Feb. 22, 1911.

Steinitz, E., and Joerdens, G.: "Zur Kenntniss der Mediastinal-tumoren und ihrer Behandlung mit Röntgenstrahlen," *Zeitschrift für klinische Medizin*, Berlin, LXXII, Nos. 3 and 4.

Phillipi, H.: "Das klinische Gesammtbild der endothorakalen Drüsen und Lungenshilustuberkulose der Erwachsenen."

Schulz, E.: "Das Blutbild und die Blutreaktionionen nach Tuberkulininjectionen bei endothorakalen Lymphdrüsentuberkulose."

Honeij, J. A.: "The Importance of Mediastinal Glands," *J. A. M. A.*, Vol. LVII, p. 958.

Hare: "Mediastinal Diseases," 1889.

Thielman, H.: "Surgical Treatment of Tuberculous Mesenteric and Bronchial Glands," *Archiv für klinische Chirurgie*, Berlin.

Dieulafoy: "Diseases of the Mediastinum."

Schick, B., and Sluka, E.: "Expiratorisches Keuchen als Symptom der Lungendrusentuberkulose im ersten Lebensjahre," *Wiener klinische Wochenschrift*, No. XXIII, No. 5.

Osler: "Affections of the Mediastinum," "Practice of Medicine."

Strümpell: "Mediastinal Tumors," "Textbook of Medicine," Fourth Edition, Vol. I, p. 367.

Delafield and Prudden: "Textbook of Pathology," Eighth Edition. Pages 442-451, 543, 587.

Tyson: "Mediastinal Tumors."

Pfaundler and Schlossman: "Diseases of Children," Vol. I, "Symptomatology of Children's Diseases": p. 39, 2 (*b*); p. 60, 1 (*b*) and 2 (*c*); p. 92, II (2); p. 98, A (4) and B (1); p. 105, 1 a (*b*); pp. 108-109, "Space Constriction in the Upper Mediastinum"; p. 109 (2); p. 111, B 4. Page 122, 2 (*a*); "Smith's Phenomenon" Page 214, B (2). Vol. II, "Tuberculosis of Bronchial Lymph Nodes," Schlossman, p. 600.

Johnson: "Surgical Diagnosis," "The Mediastinum," Vol. I, p. 664.

220 Audubon Avenue.

A PLEA FOR A MORE CAREFUL EXAMINATION IN DERMATOLOGY.

By BENJ. F. OCHS, M.D.,

Adjunct Attending Dermatologist to the Lebanon Hospital and Dermatologist to the Harlem Hospital, O.P.D.

While as a rule dispensary practice is a routine one and time does not allow a thorough examination of patients, nor are the accommodations sufficient for good and thorough work, yet when one gives a little additional time to the work, not only do the patients seem more grateful to the attending physician, but the doctor sees many a case which in the rush of time he would ordinarily overlook.

It has been our invariable rule, that every case that presents itself for the first time shall be thoroughly examined, and that, in dermatology, means that they should be entirely exposed. This rule, with us, is an inflexible one. No matter whether the patient comes for a lesion on the scalp or an apparent impetigo, confined to the face. In this way we have seen quite a few interesting dermatological cases, which ordinarily we would have overlooked. Thus, in examining a child for a ringworm of the arm, we also found, upon exposure, a typical lichen planus. At another time, a woman who came for an alopecia areata was found to have a gumma of the back. A young man with a barber's itch was found to have psoriasis. These and many more such instances have led us to establish the rule *always* to expose our patients, at least once, and that upon their first visit. How often a case of scabies of the most typical kind is treated only as such, when as we have seen in our service at both Lebanon and Harlem Hospital dispensaries, they are suffering from a mixed infection. We have seen scabies, combined with a maculopapular syphilid, with acne and even with lichen planus; and only a careful examination of the whole body would reveal such dual diseases.

Ofttimes an examination of the rectum will show condylomata, while careful examination of the mouth reveals mucous patches or aphthous conditions. The trouble of a thorough examination of the body is that it takes up a whole lot of time and that we meet with the refusal of patients, who do not see the necessity of such and cannot see the value of an exposure when their lesions are confined, as they believe, to the face, arms, or legs. Again, when the body is exposed to the dermatologist, he can see not only the lesion for which the patient came, but also follow the course of the disease; he will frequently be able to see beginning lesions in one part of the body—retrogressing in another part, as well as the lesion at its height, and thus have a clearer conception of the disease. Take, for instance, a case of scabies: the patient presents only his hands for inspection, but upon examination he will show lesions on his buttocks, genitals, etc., though the diagnosis may easily be established from his hands only.

A case of chromophytosis of the chest may show similar lesions on the back and will frequently show similar patches on the mons veneris. Lichen planus on the trunk may show lesions in the mouth as well as on the genitals.

So we must not be too lenient in our examinations and take for granted the statement of the patient that the body is free, but examine each case closely. And what holds good for dispensary work surely holds good for private practice. The patient feels indignant if his word is doubted that there may be lesions on any other part of the body excepting that which is presented for examination. Here, again, frequently mixed infections are found. Therefore, it is advisable always to examine the whole body and this is done to the best advantage if there is a complete exposure to the physician. Both physician and patient can but profit by such examination, and in conclusion I would recommend: *Examine your patient from head to foot.*

1990 Seventh Avenue.

A Tracheotomy Tube Worn for Fifty Years.—St. C. Thomson has recently demonstrated a tracheotomy tube which had been worn by one patient, on and off, for sixteen years. Frequently the tube was not changed more than once in two years. Altogether the patient had worn a tracheotomy tube for over fifty years. The patient did not suffer from bronchitis more than other people, and she died of senile decay at the age of eighty-one. While all are agreed as to the value of nasal respiration, this case shows that Nature is full of wonderful compensations, and that in certain cases of laryngeal stenosis it may be wiser to put up with a tracheotomy tube than risk uncertain operations with the object of being able to do without a cannula.—*Proceedings of the Royal Society of Medicine.*

MEDICAL RECORD.

A Weekly Journal of Medicine and Surgery.

THOMAS L. STEDMAN, A.M., M.D., EDITOR.

PUBLISHERS

WM. WOOD & CO., 51 FIFTH AVENUE.

See fourth page following reading matter for Rates of Subscription and Information for Contributors and Subscribers.

New York, September 7, 1912.

TUBERCULOSIS AND SUPRARENAL INSUFFICIENCY.

A PERSISTENT arterial hypotension is now regarded as one of the earliest signs of pulmonary tuberculosis. The causation of this manifestation is still veiled in obscurity. There is reason to believe that the diminished blood pressure is in some way associated with a diminished function of the suprarenals. An article dealing with various phases of this subject is presented by Emile Sergent in the *Gazette des Hôpitaux*, July 11, 1912. This observer calls attention to the fact that there are two forms of suprarenal insufficiency occurring in tuberculous subjects. In the first of these the tuberculous lesion is confined to the suprarenal capsules. In the second form there develops in the course of pulmonary tuberculosis a group of symptoms which reveals more or less completely a state of suprarenal insufficiency. The first type may present the well-marked clinical picture of Addison's disease, melanoderma, asthenia, anemia, progressive emaciation, constipation, pains radiating from the lumbar region into the abdomen, vascular hypotension, collapse, and the "white line." According to Dieulafoy and Bressy there are abortive forms of this disease, whose essential characteristic is the absence of melanoderma. But the evolution of the remaining symptoms is more rapid than in the classical type of Addison's disease, for the destructive lesion of the suprarenal capsules is greater. The development of suprarenal insufficiency in individuals presenting marked signs of pulmonary tuberculosis may reveal itself in various ways. Small areas of pigmentation may appear on the skin. This pigmentation is not the same as that characteristic of Addison's disease, in which the cutaneous discoloration grows progressively worse. The disseminated pigmentary patches of tuberculous subjects have a *café au lait* appearance. Boinet has termed this phenomenon "addisonism."

The presence of hypotension in an individual known to have or suspected of having pulmonary tuberculosis, particularly if this symptom is associated with a degree of asthenia, fatigue, anemia, and emaciation out of all proportion to the pathological process in the lungs, is strongly indicative of the presence of suprarenal insufficiency. Many patients presenting this combination of symptoms die with all the signs of acute failure of the suprarenal function, and at autopsy there may be revealed a marked sclerosis of this organ.

Sergent accepts the theory advanced in this country by Russell that a calcium starvation lies at the basis of tuberculosis, and cites the recent experiments of Carnot and Sloka, who have shown that the administration to an animal of suprarenal extract favors the deposition of calcium at the site of fractures. It is suggested also that the reason why tuberculosis is aggravated by gestation is that the latter condition is frequently associated with suprarenal insufficiency. On the basis of these observations Sergent concludes that suprarenal failure plays an important rôle in the evolution of tuberculosis. He advocates a suprarenal therapy in this disease as a means of meeting three indications: (1) The signs of suprarenal insufficiency are frequently manifest. (2) Suprarenal extract combats the tendency to collapse and sudden death. The existence of hemoptysis is, however, a contraindication to the use of this substance. (3) Adrenalin aids in the process of recalcification and tends to counteract thereby the evolution of the tuberculous lesions.

SELF-MURDER.

PROFESSOR BAILEY of the Social Science Department of Yale University gives the three most potent safeguards against human self-murder as the love of life, the sense of duty, the religious fear of punishment after death. Standards as to conduct change from age to age. Among the ancients suicide was considered an act of courage; we of to-day consider it cowardly. And yet such men as Washington, Bismarck, Napoleon, and Lincoln are said, on one or more occasions of dreadful stress in their lives, to have contemplated self-destruction. Suicide seems consonant with Oriental fatalism. The British have had no little difficulty in banishing suttee and like practices from India. The Chinese are said to regard suicide as a religious virtue, which brings them at once to the household of Paradise. The Japanese practice of hara-kiri (now obsolete, or fast becoming so, let us hope) has been or is essentially a heroic act.

Prof. Bailey has noted that males commit suicide more frequently than do females, in the proportion of three and one-half to one; between thirty and forty is the popular suicide age; there are more suicides among married men than among single men. The maximum suicide age is between 20 and 30 for single men; between 30 and 40 for married men; among widowers as also among divorced persons it is between 60 and 70. In America despondency leads as a cause of suicide; and among us shooting is the most frequent means of self-destruction, poison being second. The young favor poison; the middle aged shooting; the old hanging. Women take to drowning, gas, and poison; they avoid injuring their features. In cities suicides jump from buildings or bridges, poison themselves, or turn on the gas; in our Southern States shooting is preferred. Hanging is more popular in Northern Europe; drowning in Southern Europe.

Before comparing these data of Bailey with cer-

tain of Dr. Hoffman, presently to be submitted, we would note that there are epidemics, if not of suicide, at least of the mode or manner of self-destruction. A lay press account, for example, of suicide by shooting oneself in the roof of the mouth will very likely be followed by several cases of the same mode; read of a man who had settled himself comfortably in an armchair, had enveloped himself in a bed blanket, and had beneath this so manipulated a revolver that its bullet entered the heart, and one is likely to see very much the same thing described on several days following. One suicide by the horribly painful method of drinking carbolic acid is sure to be the first of a series of such deaths. Emerson in one of his Essays anticipated Bailey's observation that women suicides avoid injuring their features. Women would commit suicide a great deal more frequently, suggests Emerson, if they could be sure their persons would be romantically attractive after death; none among them would care to be "a demned, moist, unpleasant body," as Mr. Mantilini periodically threatened to become.

It has been noted that women commit suicide less frequently than do men; this is probably, not that they are not as much tempted to do so, but because of their more religious natures. The will-to-live militates against self-destruction; this fundamental force denotes not only resistance to annihilation but also dread of and respect for that power which can both destroy life and preserve it as well: the horror of death and of the factors tending to it, and the passionate desire for life and fear of the power which gave it.

Dr. Frederick L. Hoffman presents in *The Spectator*, a journal devoted to life insurance (July 11, 1912) records manifesting that for the first time in the history of small American cities (under 250,000 population) the suicide rate in them in 1911 exceeded the rate for the cities over 250,000 in population. Among the 100 cities tabulated 79 were in the former class; 21 in the latter (over 250,000). In the 79 cities 1,395 persons slew themselves in 1911; had the ratio of the previous decade been maintained there would have been but 957. Moreover, the rate of suicide in the 100 cities tabulated has progressed from 12.8 per 100,000 twenty years ago to 20.30 in the five years period ended with 1911. Why there is this remarkable increase in the small cities Dr. Hoffman does not essay to explain, but he considers that these data furnish "additional proof that the increase of self-murder is real, and that the subject demands the most serious attention"—as it unquestionably does.

From a tabulation of Prussian suicide statistics Hoffman finds the rate of male suicides to have been 32 per 100,000, the female being 10. The suicide mortality under 15 is 0.68, jumping immediately to 16.61 between 15 and 19 years, and to 26.84 between 20 and 24 (at which latter period defective education, mental, moral, and economic is the responsible factor). From 40 to 79 years the rates mount from 34.89 to 58.71; in those years the mentally depressed brood over physical and mental decadence. Mental unsoundness and nervous disease, then alcoholism, then sorrow and distress, are in order the chief causes tending to suicide. Dr. Hoffman concludes that suicide is a real evil of nation-wide extent; and that people contemplating suicide are on the increase in the United States under the complex conditions of American life. "It is equally safe to assume that in quite a number of cases the method of suicide is so ingenious as to preclude an accurate diagnosis. Modern education is largely responsible for social and moral discontent. The considerable amount of publicity which is given to suicides in newspapers, and to the means by which life is voluntarily brought to an end, implies a more serious menace to the community on the well-established basis of the psychology of suggestion."

THE GLANDULAR DISEASES OF CHILDREN.

The large rôle played by the glandular system in the pathology of early life is emphasized by D. Ssokolow in an important article on this subject in the *Archiv für Kinderheilkunde*, June 13, 1912. Glandular diseases, and chiefly those of the lymph glands, constitute one of the most common forms of the diseases of children. The peripheral lymph nodes, particularly those of the submaxillary and cervical regions, are the most vulnerable. Less frequently involved are the deeper lymph nodes, of which the mediastinal and tracheobronchial groups occupy the foreground. Next in order of involvement come the lymph nodes of the abdomen. Affections of any of these glands may run an acute, a subacute, or a chronic course. The etiological factor in any case may be of either bacterial or non-bacterial nature. The most common factor is the tubercle bacillus. Other common causes are the streptococcus, staphylococcus, pneumococcus, influenza bacillus, the microorganism of pertussis, and the colon and typhoid bacilli, the last two affecting chiefly the mesenteric lymph nodes. The diagnosis of disease of the peripheral lymph nodes is not difficult, for in addition to the rise of temperature there are the localized swelling and tenderness. The case is different with the lymph glands situated in the body cavities, for apart from the increased temperature there may be no objective data. The course of the temperature may be a short one with frequent sharp but fluctuating ascents, or it may be prolonged over a period of months or even years, in which case the temperature elevation is not considerable.

Ssokolow emphasizes the necessity of a strictly conservative treatment in all cases of glandular disease. Inunctions, and the practice of massage, as well as other local measures to favor resorption, are to be avoided. Likewise extirpation and premature incision before the completion of suppuration are not favored. A valuable measure in the case of accessible glands is the use of heat in the form of poultices, cataplasms, and light therapy. In the case of diseases of the tracheobronchial lymph nodes it is necessary to send the child to a climate whose atmosphere is free from dust and preferably cold. The treatment of disease of the mesenteric lymph nodes requires a non-stimulating, non-fermentative, and relatively sterile diet.

The Fordham International Extension Course.

An interesting innovation in medical teaching is to be tried this month at the Fordham University Medical School in this city. Hitherto the young graduate, and the older one too, who wished to broaden his medical horizon and to learn at first hand what Europe had to teach him in any special branch has had to spend many months and many dollars in visiting the different clinics and institutions in various countries, often, too, handicapped with a more or less imperfect knowledge of the language in which the instruction was given. The faculty at Fordham has sought to remove these difficulties of foreign study by bringing the opportunity for such study here. If the student cannot go to the professor, the professor can come to the student, and this is what has happened. The first of these "international extension courses," as they are called, will deal entirely with the nervous system and its diseases. The course will consist of a series of clinical lectures and practical demonstrations conducted daily from September 9 to 28, by various members of the faculty assisted by the following well-known European and American teachers: Nicolas Achucarro, coadjutor of Ramon y Cajal, of Madrid; Carl L. Alsberg, of Washington, biological chemist to the U. S. Government; H. H. Goddard, of the New Jersey State School for Feeble-minded Children; Henry Head, of the London Hospital; Gordon Holmes, lecturer on physiology of the nervous system, London University; C. J. Jung, associate in psychiatry, University of Zürich; Alwyn Knauer, assistant to Professor Emil Kraepelin at the Psychiatrische Klinik, Munich; J. V. May, president of the New York State Commission in Lunacy; Colin K. Russell of McGill University, physician to the Royal Victoria Hospital, Montreal; and William A. White, superintendent of the Government Hospital for the Insane, Washington. The lectures will be in English and will be illustrated by models, photographs, cinematographs, and when possible the patients. There will also be practical courses, for classes of limited size, in special subjects, and on histology, bacteriology, normal and pathological anatomy, surgery, and physicotherapeutics of the nervous system. The fees for the entire course, as announced, will be $40. This unusual experiment in transplanting the European clinic to American soil will be watched with interest, and if it is successful, as it gives every promise of being, it will doubtless mark a new era in medical teaching, as the idea will be adopted and enlarged upon by other colleges throughout the country.

A Specific Toxic Principle in the Blood in Pregnancy.

Those who speculate about autointoxications and hypothetic poisonings in general are always urged to isolate, first the offending substances so that not only may the phenomenon be reproduced at will, but the satisfaction will be afforded of knowing why and how the alleged substances are toxic. No one doubts that sooner or later definite substances will be isolated. It is already clear that these do not differ in any sense from known poisons; and it is significant also that the physiological principles (hormones) which the body produces to regulate its mechanisms are analogous to well-known toxic agencies. In regard to the toxemia of pregnancy we have had until recently not a single clue to a known toxic principle capable of producing the phenomena of that condition. There has been no end of speculation, but not a solitary fact beyond the general knowledge that certain fluids or solids of the gravida could be made to show toxic effects under certain conditions of animal experiment. Last March (*Deutsche medizinische Wochenschrift*, August 8) Grube and Reifferscheid demonstrated before the Niederrheinische Gesellschaft für Natur-und Heilkunde, of Bonn, an ether solution from the blood of a pregnant rabbit. This ether soluble substance was not precipitated by alcohol and was coctostabile. Injected into nonpregnant rabbits in insignificant doses it proved to be a violent poison which usually caused death in convulsions and paralysis. The extract similarly prepared from the blood of the nonpregnant rabbit was nontoxic. The normal pregnant rabbit was nearly immune to the action of this substance. The authors in the presence of the society injected 2 c.c. of the soluttion into the aural vein of a rabbit and caused violent, fatally ending eclamptic convulsions.

Metabolism of Glucose.

While we know that glucose is split up in the body into water and carbon dioxide nothing has been learned as to the intermediate products of this combustion, beyond the fact that lactic acid is somehow concerned therein. It has hitherto been taught that glucose and lactic acid represent the same stage of metabolsm, both having been derived from an unknown substance. Quite recently experiments appear to have shown that the fate of lactic acid is to be transformed to glucose. This transformation is simply an inversion of the one already well known in which glucose is changed to lactic acid. At a meeting last May of the Naturwissenschaftlicher-medizinischer Verein of Strassburg (*Münchener medizinische Wochenschrift*, August 6), Parnas expresses doubt that lactic acid can be changed to glucose, for this result seems to commit the student to the assumption of the possibility of the reversible action of enzymes. That is, if it is meant that the reaction involved is one of chemical equilibrium. On the other hand if a number of intermediate steps could be demonstrated such a transformation could come to pass, as may be shown by studying the opposite changes of glucose to lactic acid which have recently been demonstrated. We may assume that this series of changes is capable of inversion. The reaction would be one of oxidative disintegration, and hence throws considerable light on some obscure points; as, for example, how a muscle can work without oxygen but cannot rest up without it. In phosphorus or arsenic poisoning, again, the toxic substances by interfering with this transformation cause a rapid disintegration of glycogen or glucose, so that lactic acid is excreted.

News of the Week.

Infant Mortality.—There were 358 deaths of infants in New York City reported to the Board of Health last week, as against 361 in the corresponding week of last year. Thus far in 1912 there have been 629 fewer deaths of infants than there were in the corresponding period in 1911.

Poliomyelitis in Buffalo.—During the present epidemic there have been 180 cases of infantile paralysis with 22 deaths in Buffalo. In a recent conference between the local, State and Federal health authorities it was decided to institute a rigid

quarantine of all members of a family in which a case of the disease is discovered.

Hotel Milk.—According to a report made recently by the New York Milk Committee to the Department of Health the milk sold in some of the large hotels and expensive restaurants in this city is unfit to drink. The committee makes a classification of milk on a percentage basis, ranking certified, or grade A, milk as 100; inspected, or grade B, milk as 90; pasteurized, or grade C, milk as 80, and then classing the other grades according to the bacteria they contain. On this basis most of the places visited sold milk that would rank at about 35 per cent., being in the grade established as fit only for cooking and manufacturing purposes. The report has given rise to a lively newspaper war between the committee and the health department, the latter making light of the committee's discoveries, the former accusing the department of laxness and indifference to the health of Mr. Roosevelt and other large consumers of milk in this city.

Reciprocity with New Jersey Reestablished.—At a meeting of the Regents of the University of the State of New York, held last week, it was announced that the medical practice law in New Jersey having been amended so as to meet the standards of the New York medical practice act, the Regents had agreed to the request of the board of medical examiners of New Jersey that reciprocity in medical licenses between the two States be reestablished. The New York requirements were also revised by the addition of the following rule: "After January 1, 1913, an applicant for a medical student certificate qualifying for admission to a medical school shall afford evidence of education including one year in physics, one year in biology, and one year in inorganic chemistry." Drs. F. C. Walker of Brooklyn and A. B. Cooke of Syracuse were reappointed for the term of four years as members of the State Board of Medical Examiners.

The Amendment to the Pure Food and Drug Law, which it was thought would put an end to the unfounded claims of the patent medicine makers, will be ineffective, according to Dr. Wiley. The amendment says that the claims as to curative effects, printed on the labels of the bottles, shall not be false and fraudulent, and this, says Dr. Wiley, will be interpreted as meaning that they may be either false or fraudulent, but must not be both. It is possible to imagine a lawyer contending that the fake statements made by his client were believed by the latter to be true and were therefore not fraudulent. Dr. Wiley says: "The committee had before it a perfectly just amendment drawn in no uncertain terms that not only covered false and fraudulent claims on the labels but also the same claims printed on bill boards or in advertising matter, thus striking a mortal blow at the fakes and frauds which have been a curse to the public. In securing the passage of the Sherley amendment the venders of fraudulent preparations have won a complete victory. It appears that Congress has only given them new life, enabling the roots of fraud and corruption to sink deeper into the soil of legislation, protected of the vested interests but not of the public welfare."

The "Yale Medical Journal" has ceased publication with the issue for August. The reasons given for this are stated by the editors to be "because there is an abundance of available current medical literature for all desiring it, and because of the belief that the value of the *Journal* in the limited field which it has attempted to cultivate is not sufficient to justify the effort necessary for its continued publication." The *Journal* was started in 1894 as an undergraduate magazine with an advisory board of graduate editors. A few years ago, however, the *Journal* began the publication of the proceedings of the Connecticut State Medical Society and at the same time the editorial work was taken up by a board of graduate editors. It may be true, as the editors say, that there is an abundance of available current medical literature for all desiring it, nevertheless there will be a large number of former readers of the *Journal* who will miss greatly the monthly visits of this well edited and readable publication.

The Public Health Service.—The following is the text of the act of Congress affecting the Public Health and Marine-Hospital Service:

"*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled*, That the Public Health and Marine-Hospital Service of the United States shall hereafter be known and designated as the Public Health Service, and all laws pertaining to the Public Health and Marine-Hospital Service of the United States shall hereafter apply to the Public Health Service, and all regulations now in force, made in accordance with law for the Public Health and Marine-Hospital Service of the United States shall apply to and remain in force as regulations of and for the Public Health Service until changed or rescinded. The Public Health Service may study and investigate the diseases of men and conditions influencing the propagation and spread thereof, including sanitation and sewage and the pollution either directly or indirectly of the navigable streams and lakes of the United States, and it may from time to time issue information in the form of publications for the use of the public.

"Sec. 2. That beginning with the first day of October next after the passage of this act the salaries of the commissioned medical officers of the Public Health Service shall be at the following rates per annum: Surgeon General, six thousand dollars; Assistant Surgeon General, four thousand dollars; senior surgeon, of which there shall be ten in number, on active duty, three thousand five hundred dollars; surgeon, three thousand dollars; passed assistant surgeon, two thousand four hundred dollars; assistant surgeon, two thousand dollars; and the said officers, excepting the Surgeon General, shall receive an additional compensation of ten per centum of the annual salary as above set forth for each five years' service, but not to exceed in all forty per centum: *Provided*, That the total salary, including the longevity increase, shall not exceed the following rates: Assistant Surgeon General, five thousand dollars; senior surgeon, four thousand five hundred dollars; surgeon, four thousand dollars: *Provided further*, That there may be employed in the Public Health Service such help as may be provided for from time to time by Congress."

Dr. Georges Rambaud of the Pasteur Institute in this city has been awarded by the French Government the title of Chevalier of the Legion of Honor.

Dr. S. R. Klein, formerly professor of histology and embryology at the Fordham University School of Medicine, New York, has been placed in charge of the new research laboratories of the Hahnemann Medical College, Chicago.

The Plague in Cuba and Porto Rico.—Cuba has been declared by the Public Health Service to

be free from the bubonic plague, and all restrictions on passenger traffic between the island and the United States have now been removed. The last case in Cuba was discovered on July 22, the man dying on July 27. Porto Rico also has reported no cases for some time, but the quarantine restrictions have not yet been raised. The killing of rats and the rat-proofing of buildings in San Juan are still going on.

Dr. Edgar Jones, the oldest physician in England, died on August 26, in London, at the age of 102 years.

Alcohol in Patent Medicines.—Over three hundred patent medicines in the shape of tonics, stomach bitters, nervines, etc., are now classed by the Internal Revenue Department as alcoholic beverages and taxed accordingly. The commissioner has recently added sixty to the list of so-called remedies which are insufficiently medicated to render them unfit for use as beverages, and are accordingly classed as the latter. The list previously contained upward of 250 preparations of the kind.

Obituary Notes.—Dr. William J. Parker of Jersey City died of typhoid fever on August 28 at the age of 54 years. He was born in Jersey City and was graduated from the Bellevue Hospital Medical College in 1879. He had always been prominent as a military surgeon in the National Guard. He was appointed First Lieutenant and assistant battalion surgeon, Fourth Regiment, N. G. N. J., in 1893. He was promoted to major and regimental surgeon in 1895 and in 1904 he became Lieutenant Colonel and staff surgeon of the First Brigade of New Jersey. In 1910 Dr. Parker was appointed surgeon on the staff of Gen. P. Farmer Wanser, commander of the National Guard of New Jersey.

Dr. George H. Rue, a homeopathic physician of Lexington, Ill., died at his home on August 5 as the result of an acident.

Dr. J. Howard Beck died at Philadelphia on August 15 at the age of fifty-two years. He was graduated from the medical department of the University of Pennsylvania in the class of 1882. He was a member of the Philadelphia County Medical Society, of the Medical Society of the State of Pennsylvania and of the American Medical Association.

Dr. Richard M. Fulkerson of Mounds, Ill., a graduate of the Eclectic Medical College of Cincinnati, Ohio, in 1870, died at his home suddenly on August 11, aged 73 years.

Dr. George S. Morris of Arkansas City, Kan., a graduate of the Medical College of Ohio, Cincinnati, in 1871, died suddenly in his office on August 12.

Dr. George Washington Simpson, physician and clergyman, of Baltimore, Md., a graduate of the College of Physicians and Surgeons, Baltimore, in 1873, a member of the American Medical Association and the Maryland State and Baltimore City Medical Societies, and for many years a chaplain in the United States Army, died at his home on August 18, aged 71 years.

Dr. Henry Stuart Nolan of West Somerville, Mass., a graduate of the Tufts College Medical School, Boston, in 1906, died at the Deaconess Hospital, Boston, after a long illness on August 18.

Dr. Andrew J. Brockett of Cleveland, Ohio, a graduate of the University of Michigan, Department of Medicine and Surgery, Ann Arbor, in 1862, a surgeon in the United States Army during the Civil War, and a member of the American Medical Association and of the Ohio State and Cuyahoga County Medical Societies, died at his home on August 11, aged 76 years.

Dr. Franklin R. Garlock of Racine, Wis., a graduate of the University of Pennsylvania, Department of Medicine, Philadelphia, in 1870, a veteran of the Civil War, and a member of the Wisconsin State and Racine County Medical Societies, died at his home on August 15, aged 72 years.

Dr. Charles Thorndike Parker of this city died of pneumonia at his summer home, South Hamilton, Mass., on August 31, aged 54 years. He was born in Boston and was graduated from the College of Physicians and Surgeons in this city. He retired from practice a number of years ago.

Dr. Frederick F. Hoyer of Tonawanda, N. Y., died August 23 at the age of 90 years. He was a graduate of the Medical Department of the University of Buffalo in 1849. He was an ex-president of the Erie County Medical Society and was for a number of years health officer of Erie County.

Dr. Charles G. Criser of Warm Springs, Va., a graduate of the University College of Medicine, Richmond, Va., in the class of 1899, died at his home of apoplexy August 18, aged 41 years.

Dr. B. M. Alford of Alameda, Cal., a graduate of the Tennessee Medical College in 1856, a Confederate surgeon during the Civil War, and for twenty years a surgeon of the Southern Pacific and Santa Fe railroads, died at his home on August 14, aged 79 years.

Dr. R. E. Martin of Milwaukee, Wis., a graduate of the Chicago Homeopathic Medical College in 1886, and a former health commissioner of Milwaukee, died on August 21, aged 47 years.

Dr. Paul Emile Archinard of New Orleans died at his home on August 23 after a long illness, aged 53 years. He was a graduate of the Medical Department of Tulane University in the class of 1882, and was professor of diseases of the nervous system in the same university at the time of his death.

Dr. Lawson Harrill of Statesville, N. C., a graduate of the Jefferson Medical College in 1861, a veteran of the Civil War, and for many years State smallpox inspector, died at his home on August 26, aged 75 years.

Dr. C. Annette Buckel of Piedmont, Cal., a graduate of the Woman's Medical College of Pennsylvania, a superintendent of nurses in the Union Army during the Civil War, died at her home on August 17, after a long illness, aged 79 years.

Dr. August Rauscher of Murray, Utah, a graduate of the University of Vienna in 1855, died at his home on August 15, aged 79 years.

Correspondence.

A NEW PHASE OF FAULTY MEDICAL TRAINING.

To the Editor of the Medical Record:

Sir:—The Carnegie College Investigation pointed out the defects of colleges in buildings, appliances, and hospital connections, and stopped there. Mr. Flexner apparently thinking that these were all the great obstacles to the progress of medical training. Now, another inquiry has started which promises a better understanding of the subject, and is certainly more scientific and along the lines of exact facts.

Several different State boards have begun to collect figures concerning the attainments of students of various colleges, in particular branches of medicine. It has been noted that graduates of certain colleges rank very low in chemistry, practice of medicine, or some other branches. In other departments they stand very high, and an average brings them up to a passable standard. Other colleges show the same peculiarities. Some stand very low in practice and high in surgery. Some excel in anatomy and fail in pathology, and so on through the list. In one college where anatomy was taught by a very distinguished man the graduates were invariably low in their standing. In another college where pathology and bacteriology were taught by distinguished men, who had done original work, the graduates were below the average. In another college where other branches were taught by really strong men the students failed in these departments, but in others excelled. Some of the colleges with extraordinary facilities and appliances for teaching certain subjects turned out students with a very low comprehension of these branches.

These facts indicated other causes than trained professors with remarkable building and appliances. The trouble centered back on the teachers, who lacked enthusiasm, lacked pedagogic instincts, and taught these subjects in a perfunctory way. Many of them were exceedingly strong men, but they failed to arouse the instinct of learning in the student. They were negative men who could not impart the art or science of their topics so that the student could retain them. One of these inquiries covering the graduates of two years in several Eastern colleges showed that certain colleges graduated very inferior students in certain branches, and that in certain other branches the students ranked very high, irrespective of hospital connections, eminent teachers, and unusual facilities for teaching. There is a new field open in this direction, which will attract attention in the near future.

In every college there are certain men who fail to make their subjects attractive to the students, not because they are incompetent or do not know the subject, but because they have not the faculty of clearly impressing the facts. Men who are salaried to teach and do nothing else are often very learned, vague, and impractical, and while able to teach their separate branches in a highly scientific way are little better than text-books or compends. They present the truths in exact logical manner, but the setting is bad and no impression comes from it.

Thoughtful men assert that medical college reforms must begin with the teachers, and that something more is needed than elaborate apparatus, hospital connections, and bacteriological appliances. The value of college education depends more on the teachers than these. A small Western school where all the professors are practical men became noted for the high standing of the students that it graduated. The Carnegie research turned the school down as inferior and lacking, because it had no showy externals, and yet literally the graduate students ranked higher before the State boards as a class than others who had been graduated from the best colleges. It was the teachers and professors who made it what it was.

The State boards can do a great service if they will tabulate their experience and ratings of graduates on individual branches, and this will be a new movement towards a higher grade of training.

T. D. Crothers, M.D.

Hartford, Conn.

UNTO THE SECOND AND THIRD GENERATION.

To the Editor of the Medical Record:

Sir:—Thinking the following may be of interest enough to record in your columns I am writing you a short history of a case of mine. Mr. B. some thirty-six years ago contracted syphilis and was, as he thought, successfully treated for it, though now at sixty-eight years of age he has had one or two strokes of paralysis, and one—the oldest—child has had recurrent attacks of interstitial keratitis. Eight other children are above the usual run in development and have always enjoyed more than average good health, while the object of my story is a perfect picture of health in every way and a most painstaking search of her life shows absolutely nothing that can be attributed to specific infection.

The sixth daughter (about twenty-four years old), Mrs. F., some three years since married a perfectly healthy man who again gives a specific free history. Last November I delivered Mrs. F. of a seven and a half pound baby who seemed fat and healthy but whose liver was very prominent. Knowing her father's history, I was not at all surprised when its grandmother some four weeks later called my attention to a pemphigus of the palms and soles and also to a severe rhinitis that gave the baby a great deal of trouble. To make sure of my diagnosis I refrained from any specific treatment and ten days later the baby effloresced like a severe case of measles and the family were very much alarmed at its condition. Under the iodides of mercury, potassium, and iron both to the baby and its mother, the case rapidly improved, and after four weeks I could no longer prevail on the parents to continue its use, as the baby seemed entirely normal and has continued so ever since.

L. E. Norfleet, M.D.

Tarboro, N. C.

OUR LONDON LETTER.

(From Our Regular Correspondent)

INCLEMENT SUMMER—INSURANCE CAMPAIGN, RESIGNATIONS FROM ADVISORY COMMITTEE—ASYLUMS BOARD—HOSPITAL ABUSE—ARTHRITIS IN THE STONE AGE—EXHIBITION RELATING TO CONSUMPTIVE INSTITUTIONS—ROYAL MEDICAL BENEVOLENT FUND—NEW SECTIONS AT ROYAL SOCIETY OF MEDICINE—OBITUARY.

London, August 16, 1912.

The weather—always a prominent subject with us—is this year more than for a long period the topic which almost monopolizes conversation. The wettest July since the late eighties is followed so far by the coldest August for fifty years and this accompanied by severe storms of wind, rain, thunder, in fact all varieties of atmospheric disturbance. It is a trying time for many patients, who talk about autumnal and wintry weather. Temperatures from 12° to 22° below the average have been registered day after day. Intervals of sunshine have again and again raised our hopes of a permanent change to something like summer, but have soon ended in disappointment. This week has been one of the worst. Two days ago the thermometer crept up to 63° Fahr. in the morning but fell to 52° in the afternoon when it ought to have been 70°. The provinces report similar conditions, and the worst of it is that the experts assure us there are no signs of improvement. People tell me it is as bad and worse in many parts of Europe and quote the me-

teorological statistics, but the figures do not make me any warmer.

The insurance campaign proceeds steadily. The British Medical Association, as you know, called upon the members it had nominated to the Advisory Committee to withdraw. These gentlemen, thirteen in number, have done so. At the same time nonmembers were asked to support the movement and fourteen nominated by the Government have also withdrawn. On the other hand, Dr. Addison, M.P., who is commonly credited with having given some advice as to terms to Mr. Lloyd George, with thirteen other gentlemen have declined to resign, stating that having considered their position fully they are of opinion that for the present it is their duty to remain.

The report for 1911 of the Metropolitan Asylums Board was issued last week and contains important statistics of which some may be mentioned. The patients admitted to imbecile asylums numbered 1,038, being an increase of 125 over 1910. The total number of inmates remaining on December 31 was 7,270, an increase of 228. This was the first year since 1903 that the admissions exceeded 1,000, the average number for 7 years having been 871. The number this year under 16 years old was 200, under 5 years 40; of adults 249 were over 70, between 70 and 80 there were 178, between 80 and 90 were 66, and 5 were over 90. The admissions to infectious hospitals numbered 21,138, an increase of 5,900, the discharges 18,778, an increase of 3,550 over 1910.

Two events in the board's history for the year claim notice, one being the transfer of the casual poor of the metropolis to the care of the board, the other the adoption of a new scheme for the accommodation and classification of the feeble minded. In regard to the latter it is stated that the reports of the children's committee have prepared the way for the recognition of the facts that the feeble minded in their care can never be sufficiently improved to take a place in the outside world so that the community must undertake the burden of their permanent support. Further, there has been much overlapping of cases claimed as imbeciles and feeble minded. It is proposed to bring all grades of infections under the jurisdiction of a single committee and to reserve the Darenth Industrial Colony entirely for improvable imbeciles. The result attained at Darenth in the past, in spite of the retention there of hopeless imbeciles who are now to be removed, the board considers affords the best augury for the future of the colony.

Hospital abuse, a long-standing and never absent subject of complaint on the part of working practitioners, has lately been more insistent. A report of a committee to inquire into the out-patient system of the London hospitals has been published on behalf of King Edward's Fund. It is signed by Lord Mersey and the Bishop of Stepney, and deals with hospitals within a radius of nine miles from Charing Cross. There are 12 hospitals with schools which treated 884,634 out-patients; 16 without schools and 355,589 out-patients; 7 children's hospitals treated 156,352; 30 special hospitals, 276,916; about 28 other smaller hospitals about 102,000. Here there is a total of 1,775,491 sick persons receiving gratuitous aid, but this is supplemented by about 52 provident and 54 nonprovident dispensaries, besides 43 under the Poor Law service.

The committee do not think the system is abused by "really well-to-do people." One may hope not, indeed. But they admit that practitioners probably have good grounds for thinking many could, without hardship, afford to pay moderate charges. There is stronger evidence that large numbers could provide for themselves by provident dispensaries and clubs. They admit, too, that with the lowest payment of which evidence was given them, the necessary attention could not be given and the medical status and efficiency must degenerate to the great disadvantage of the poor. The committee submit that any scheme of reform should include reduction of numbers, partly by excluding those who can pay and trivial cases; cooperation with general charitable work and Poor Law assistance; safeguard for medical education and science. Coordination need not be mere refusal of help with perhaps adding danger of delay, but might take the form of reference to a more appropriate agency and so secure that all classes of cases were provided for. Moreover, cooperation should supplement the medical treatment when illness is due to other forms of distress, and to ensure that the Poor Law is only resorted to in cases beyond the reach of voluntary assistance.

A somewhat different tone prevailed at the Liverpool meeting where the subject was discussed by those well qualified to speak of it. The statistics of the local institutions indicated that people of small means were not the only applicants for hospital and dispensary treatment. It was said that these institutions gave gratuitous advice in the year 1910 to nearly 30 per cent. of the population. This would not include those treated under the Poor Law, said to be about 10 per cent. Inquiries made by the Voluntary Aid Council showed that 25 per cent. of the out-patients at the large general hospitals admitted they were earning over 30 shillings per week.

Dr. M. Dewar of Edinburgh contributed a paper on the subject, in which he urged that there were poor people enough who were compelled to take the out-patients' place and gave considerable work to the medical officers, without counting those who could pay general practitioners, and even specialists. Unfair competition between charitable institutions and private doctors was sapping the independence of whole classes. Apparently well-to-do people could generally be seen in the out-patients' waiting rooms. He mentioned a case, which must surely be exceptional, in which the medical officer of a district had introduced a gentleman who had an income of £800 a year to a hospital for treatment. I hope that medical officer was present at the meeting and has profited by the lesson.

Dr. Parkinson said much of the trouble arose because each hospital was an isolated unit and they ought to cooperate with each other and with other agencies for assisting the sick poor. The only people who did not see abuse were the lay members of committees. Many patients questioned about their income told flagrant lies. One of the first duties of hospitals was to see that funds entrusted to them for charitable purposes were expended for that purpose.

Dr. Rentoul blamed the doctors for bringing these conditions on themselves by contracting with clubs at ridiculous prices—5/, 4/, and even 1/6 a year had been accepted, and actually a Liverpool tea dealer had made the experiment of offering free medical attendance to anyone who bought 1/6 worth of tea. He declared doctors in Liverpool got

the Watch Committee to order that in accidental cases the ambulance should not take the injured home but to the pay wards of the hospital. Some people said that was not true, but he repeated "it was true." In some Lancashire towns arrangements were made that patients taken into the hospitals could have their family doctors attend them. Why should not that system be generally adopted?

Dr. Kingsford suggested that the high fees for operations and the excessive charges in nursing homes drove into hospitals many who would be willing to pay moderate prices.

It is reported that among the neolithic skeletons found near Vendrest (Seine-et-Oise) are some which show distinct traces of arthritis deformans. Some of the fragments may very likely have belonged to a single individual, as the number is not great. There are enlargements, however, on a patella, a wrist, several fingers and toes, and two ribs. It is interesting to notice that the disease prevailed in the stone age, though it has long been conjectured that it was ancient. Traces of it have been recorded as seen among the remains of the cave bear. Very rarely has it been mentioned among prehistoric remains of Egypt. Perhaps the climate may have been more propitious.

An exhibition of materials relating to sanatoria, tuberculin dispensaries, and other articles employed in furnishing such institutions is to be opened on the 26th inst. at the offices of the Society of Medical Officers of Health.

The Royal Medical Benevolent Fund is henceforth to be the name of that heretofore called British, the King having been pleased to approve of the change.

The Royal Society of Medicine is arranging for two new sections, ophthalmology and tropical medicine, to be opened early in the winter session.

Mr. Stanmore Bishop, F.R.C.S., of Manchester, died on the 25th ult., aged 64. He was surgeon to the Ancoats Hospital and president of the Manchester Clinical Society, and held a high position in abdominal surgery and gynecology. He contributed many papers to the societies and journals, chiefly on these departments of surgery.

Professor J. J. Charles has died at the age of 67. He was professor of anatomy and physiology at Queen's College, Cork, from 1875 to 1907. He was also examiner in the Royal University of Ireland.

Dr. J. E. Meredith, consulting physician to the West Kent General Hospital and who held other offices in Maidstone, died at St. Leonards. He was a graduate of Dublin, in arts and medicine.

OUR LETTER FROM THE PHILIPPINES.

(From Our Regular Correspondent)

CHOLERA CARRIERS—BACILLARY DYSENTERY—RINDERPEST—BERIBERI—PERSONAL.

MANILA, P. I., July 19, 1912.

IT has long been questioned whether the frequent outbreaks of cholera which have occurred in the Philippine Islands in the past have always been due to infections which originated in the country. Since 1908, when the first cholera carriers in Manila were found, it has been suspected that possibly some cholera carriers were introduced from nearby foreign countries. On account of the seven-day plague quarantine which is imposed against all steerage passengers arriving from Amoy and Hongkong, an excellent opportunity was afforded, while this detention was going on, at the Mariveles Quarantine Station, to have the stools of such passengers examined. On account of the infrequency with which cholera is found among Chinamen, it was not thought likely that any person of this nationality would be found to be a cholera carrier. It is, therefore, of considerable interest to report that the 557th case examined was found to harbor virulent cholera organisms. The Chinaman had left Canton, China, seven days previously, and, so far as could be ascertained, he was in good health. He was kept under observation for a period of ten days, at the end of which time his stools were found to be negative. It has frequently been held that in former outbreaks of cholera in the Philippines the disease often began among Japanese, but no satisfactory explanation could be made. In view of the experience had with the Chinaman, it seems probable that cholera carriers may have been present among incoming Japanese passengers. Since this first cholera carrier was reported the stool examinations of four others showed vibrios, but upon careful laboratory examination made at the Bureau of Science they were shown not to be the vibrios of Koch.

Acute outbreaks of bacillary dysentery are reported from many sections of the Philippines. The disease is, evidently, spreading in all directions, and on account of its mortality not being as high as that for cholera, it does not cause the same amount of alarm and outbreaks are frequently well under way before they come to the notice of the health officials. Laboratory examinations show that the organisms are usually either of the Shiga or Flexner type.

Manila has again been invaded with rinderpest, outbreaks of the disease having occurred in several local dairies and caused great loss. This is of interest to medical men because it was, at first, alleged that the children who drank milk from rinderpest animals developed severe diarrheas and in some instances died. Investigation of this matter has shown, however, that the children in question died of bacillary dysentery, which their history showed was contracted from sources not connected with the milk supplied by the dairies in which the rinderpest occurred. The veterinarians state also that as soon as an animal becomes sick with rinderpest the secretion of milk stops. The matter is still under investigation by the Bureau of Health.

Referring further to the question of beriberi, the recent experience which has been had at the Culion Leper Colony adds considerable additional confirmation to the now generally accepted theory that this disease is caused by the continuous use of rice as a staple article of diet, from which a certain portion of the cortex, or pericarp, has been removed. During the autumn of 1911 the Philippine Government found it necessary to purchase large quantities of rice in order to prevent unduly high prices being charged by dealers, owing to the shortage which prevailed. This rice was of the polished variety and was afterward used in Government institutions, among which was the Culion Leper Colony. Prior to the use of this rice the average death rate among approximately 2,500 inmates of the colony for the preceding four months was 28 per month. The use of the rice was begun during the latter part of November and continued until early in February. During January the death rate commenced to increase and by March it had reached 92 deaths per month, or an increase of over 200 per cent. During the latter part of February large quantities of mongoes (a local legume that resembles a lentil and is rich in nitrogen) and other foods which are believed to

contain the beriberi preventing principle, were used with the white rice and about the middle of March the use of partially polished rice, which contained at least 4 per cent. of phosphorus pentoxide was begun and has been continued to date. During the latter part of March a decrease in the number of beriberi deaths began to take place and during April the total deaths at the Colony had again fallen to 25 per month. During May the population was increased by new arrivals to 2,600 and the total number of deaths was 29.

Dr. Richard P. Strong, who is just recovering from his recent illness, will leave the Philippine Islands for a vacation in Europe and America on July 29.

Dr. W. E. Musgrave, the chief medical officer of the Philippine General Hospital and dean of the College of Medicine and Surgery of the University of the Philippines, has been confined to the hospital by sickness. He leaves Manila on July 20 for a month's vacation in Japan.

OUR BERLIN LETTER.

(From Our Regular Correspondent)

SCHOOL AND TUBERCULOSIS—CAMPAIGN AGAINST LATENT TUBERCULOSIS—SPECIAL CLASSES AND OPEN-AIR SCHOOLS—SCHOOL DENTAL CLINICS.

BERLIN, August 1, 1912.

SCHOOL and tuberculosis was the subject of an instructive address delivered before the fourth meeting of the Society of School Hygiene by Professor Kirchner. As an introduction he presented figures to show that the general reduction in mortality has gone hand in hand with the progress in hygiene. From 1886 to 1910 the mortality fell from 29 to 16 per thousand. The cause of this diminution has been the reduction in the prevalence of infectious disease. The death rate from tuberculosis has fallen markedly; whereas in 1875 there died from this disease 32 out of 10,000 individuals, in 1911 only 15 succumbed to it. At the present time there are 60,000 deaths annually from tuberculosis in Prussia. In 1905 the speaker had pointed out that the reduced death rate from tuberculosis occurred only in males at certain age periods for whom the great social hygienic measures are operative. On the other hand tuberculosis mortality has not decreased so far as women and children are concerned; in fact, up to 1902 it had increased. From this observation it would be erroneous to conclude that tuberculosis is a school disease. Open tuberculosis is very seldom found in the schools. But latent tuberculosis is very common among school children and must be combated by means of every known resource. The first requisite is that children with open tuberculosis must be excluded from the schools. This can be accomplished only when the general notification of tuberculosis is carried out. Since there is no notification law in Germany, the duty develops upon the school medical authorities to exercise a strict surveillance lest cases of open tuberculosis be permitted to attend school. The campaign against latent tuberculosis lies in the hands of the school physicians, who examine every pupil on entering school and who follow the suspicious cases through the entire school period. There is a need for special classes for these suspicious cases. A few cities have set a good example by the establishment of open air schools, as in the case of Charlottenburg with its "Waldschule." The good results obtained in the latter should lead to a general establishment of these schools. Moreover, all classrooms should be kept scrupulously clean. No one, not even the janitor, should be permitted to live in the school. There should be a general establishment of school lunches and school baths. School dental clinics have a special significance with reference to the prevention of tuberculosis, for good teeth ensure better resistance against disease and the better utilization of nutriment. Not to be overlooked is a thorough grounding of the pupils in the principles of hygiene, not only for their own sake but as a means of disseminating this information in the household.

Progress of Medical Science.

Boston Medical and Surgical Journal.

August 22, 1912.

1. Blood Transfusion: Indications, Methods and Results. B. Vincent.
2. Intrarectal Rupture of Suppurating Sinus from Hip Joint Disease. R. W. Jackson.
3. The Doctor Who Volunteers For Military Service in Time of War. C. C. Foster.
4. A Study of Thirty-Nine Cases as Regards the Intestinal Length and Nutrition. L. T. Swaim.
5. A Private Obstetrical Record. J. R. Torbert.

1. Blood Transfusion.—B. Vincent discusses a few practical points in regard to the use of transfusion and the best methods of operation. The indications are acute hemorrhage after injury or operation and in ectopic gestation; the uterine hemorrhages of childbirth, miscarriages, or fibroids; the severe bleedings from ulcers in the stomach, duodenum, or intestines; shock; gas poisoning; the bleeding occurring in deeply jaundiced individuals, in hemophilia, and in hemorrhagic disease of the newborn. Transfusion is less clearly indicated in the secondary anemias which are not due to the loss of red corpuscles to the body. The cause of the anemia is too often a pathological condition which is incurable or not altered by the transfusion of blood. Illustrations of the stimulating effect of transfused blood are found in its use as a preparatory measure before operations on weak patients, in pellagra and in certain cases of prolonged suppuration with profound anemia. In such instances the beneficial effect of the transfusion is obtained by increasing the patient's resistance and augmenting the natural forces which combat the progress of the disease. In purpuric conditions of obscure etiology transfusion is not indicated by the results which have been secured up to the present time. It may prove to have a place in the treatment of the purpura when one has a better understanding of the diseases in which purpuric hemorrhages occur. In pernicious anemia, leucemia, certain toxemias, acute infections, and malignant disease the negative results are sufficiently definite to contraindicate transfusion in these cases. In spite of its comparative safety, transfusion should be considered a measure of last resort to be applied when simpler means have failed and only in those cases in which there is a rational basis for its use. Success in the performance of transfusion is more dependent upon adequate experience than any special method. In adults the Elsberg canula is evidently the best for the average surgeon. In infants the operation is done with the least difficulty by means of glass tubes of proper length and size.

2. Intrarectal Rupture of Suppurating Sinus.—R. W. Jackson concludes that intraanal or intrarectal rupture of a coxitic sinus occurs rarely but not with extreme infrequency. Such opening involves probably a considerable degree of mixed infection of the joint beyond what would occur if the opening were external. Likewise tuberculous infection of the rectum might arise. The intraanal opening is quite easily treated and much of the mutual risk of infection may be removed. The intrarectal opening is in

most cases (unless the sinus approaches from low down) too high to turn aside in any way and give an external discharge and consequently the risk must continue. If an operation is performed in this instance it is likely to create at once a complete rectal fistula where none existed before, because of the surgical difficulties in the way of securing permanent closure of the internal opening. It is a very rare and most unfortunate occurrence for such an abscess to point both externally and internally; and an external incision should be made if one is sure that internal rupture has not occurred, but this external incision should be avoided, if possible, if internal rupture has occurred, because of the fistula thereby created. However caused, such a fistula is a particularly troublesome one, and the wisdom of trying to better it surgically is fairly debatable ground.

4. Intestinal Length and Nutrition.—L. T. Swaim studied thirty-nine subjects at autopsy to find out whether or not the length of the small intestines had any relation or bearing on general nutrition, and also to find out what the variations in length actually were. As the result of his observations the author concludes that ptosis is present probably in many more cases than is realized, in 9 out of 29 cases. The size of the stomach varies enormously; the tubular stretched stomach is present in most of the cases of ptosis (6 out of 9), and the lesser curvature can be greatly stretched downwards. The small intestines vary greatly in length, from 10 feet 6 inches to 25 feet 10 inches, averaging 19 feet 3 inches. The length has only a slight effect on the nutrition. There is a tendency to a greater accumulation of fat the longer the intestine is and vice versa. The large intestines vary also, averaging 5 feet 3 inches, with extremes of 3 feet 8 inches to 8 feet 5 inches. When the stomach is low the large intestine is apt to be longer and the cecum large and pendulous, the greatest length being in the transverse colon and sigmoid. The total average length of the entire intestines is 24 feet 6 inches. A rather significant fact is that not only were the hollow viscera displaced, but even more often the solid viscera, such as the liver, which was below the costal border in 20 cases.

New York Medical Journal.

August 24, 1912.

1. The Inheritance of Acquired Characters. J. Wright.
2. Health Conditions in the Canal Zone. S. H. Brown.
3. The Fee Book of an Irish Physician of the Seventeenth Century. J. J. Walsh.
4. A History of Surgical Hemostasis. W. C. Borden.
5. Some Experiences with the Lessilur-Prirey Test. B. G. R. Williams.
6. A Poisoned Blood Stream. L. A. Merriam.
7. Ten Sex Talks to Girls. I. D. Steinhardt.
8. The Technique of Radiography. J. Friedmann.

2. Health Conditions in the Canal Zone.—S. H. Brown presents statistics which indicate that the health conditions of the isthmus compare favorably with those of almost any other industrial section of a like population; indeed, they are vastly superior to many of the latter conditions. When it is considered that the sanitary department covers so many fields the expense is trivial. No other health department exercises such rigid or conscientious surveillance over the people in its charge. It is suggested by the author that when the canal is completed and the sanitary department has assumed an automatic character, its several heads could be placed in charge of the larger American cities with the same authority vested in them as at present in the Canal Zone. Perhaps one might then persuade our own people that flies and mosquitos are not necessities and that their removal is not an interference with any one's constitutional prerogatives.

5. The Albumin Reaction of Sputum.—B. G. R. Williams states that: 1. The positive albumin reaction in a sputum in which the disease is not acute, points very strongly to the presence of pulmonary tuberculosis. 2. The test is of little or no value when one is attempting to differentiate acute bronchitis or pneumonia from galloping consumption. 3. The sputum from a case of pulmonary edema secondary to renal or cardiac difficulties may show albumin, but the differentiation from phthisis should have preceded the positive test by many months. 4. Even though albumin be found in gangrene and bronchiectasis, these conditions are not usually mistaken for early tuberculosis. 5. A positive reaction invariably enables one to rule out chronic bronchitis, and as this condition is likely to be mistaken for tuberculosis, the test should prove valuable. 6. The reaction, though not an extremely early one, seems to be present as early as tubercle bacilli are set free in the sputum and in some cases precedes the latter. The author believes that sulphosalicylic acid is a more delicate reagent and promises to be of more service than heat and nitric acid. 8. The test, though a chemical one, should be performed with bacteriological precautions. 9. This test will doubtless find future favor with the general practitioner.

6. A Poisoned Blood Stream.—L. A. Merriam believes that chief among all the known causes of disease is a chemical or electrical change in the constituents of the blood stream, as the result either of influences of the environment, or of poisons from foods and waste matters, causing further changes in the cellular structure of the body. Overfeeding, faulty methods of eating, and improper combinations of foods, with imperfect elimination of waste substances, are the essential factors in a poisoned blood stream. Overfeeding, even if there are perfect insalivation and perfect digestion of starch foods and proteids, with perfect assimilation, may cause constipation, overburdening of the liver, and the overloading of the blood stream with nutriment which undergoes chemical changes in the intestines or blood, and with the waste products of repair is changed into purin bases and other chemical substances. These, not being changed into the usually harmless end products for elimination, render the blood stream impure, alter the internal secretions, and make the blood a suitable culture medium for bacteria.

Journal of the American Medical Association.

August 24, 1912.

1. The Training of the Desirable Practitioner and His Mission. S. J. Meltzer.
2. The Addition of a Fifth Year to the Medical Curriculum. J. M. Dodson.
3. The Relation Between Practitioner and Investigator in Medicine. L. Loeb.
4. Experimental Devascularization of Segments of Intestine with and without Mechanical Obstruction. J. S. Horsley and C. C. Coleman.
5. The Injurious Effects of the X-Ray as a Therapeutic Agent. A. Ravogli.
6. Observations on Keratosis Follicularis, with Report of Five Cases in the Same Family. W. B. Trimble.
7. Kératodermie Blennorrhagique, with Report of a Case. F. E. Simpson.
8. Appendicitis Complicating Pregnancy. P. Findley.
9. Care of Scarlet Fever Patients. M. Sturtevant.
10. Nephritis in Pregnancy. J. B. DeLee.
11. A Plea for More Careful Technique in Doing Intrapelvic Reconstructive Work. W. F. B. Wakefield.
12. A New Bone-Plate. P. T. Geyerman.
13. Salvarsan in Pregnancy. H. J. Levis.
14. Disappearance of Angioneurotic Edema After Appendectomy. C. P. Oberndorf.

4. Experimental Devascularization of Intestines.—J. S. Horsley and C. C. Coleman report their experiments on devascularization of segments of intestines with and without mechanical obstruction, and conclude as follows: The view usually held that bowel with impaired nutrition can be easily permeated by bacteria has not been borne out in the experiments. In no instance did the dog die under three days except when perforation had occurred and the bacteria and other intestinal contents had been thrown in an overwhelming amount into the abdominal cavity. In such cases death took place in a few hours. A short segment of intestine in a dog when deprived of its nutrition,

if thoroughly protected by omentum, may be nourished through the omentum and maintain its integrity. It has been taught that if even a small portion of intestine becomes detached from its mesentery, gangrene and a fatal result necessarily follow. In a dog this does not appear to be true. The occurrence of mechanical obstruction along with gangrene, as would occur in many clinical cases such as strangulated hernia, intussusception, and volvulus, adds a great deal to the gravity of the situation. Devascularization of a segment of bowel without obstruction, as when the intestine is severed from its mesentery by a wound, seems to be much less serious than when there is obstruction. If such a segment is short and is protected by omentum, the condition appears to be compatible with recovery.

5. Injurious Effects of X-Rays.—A. Ravogli describes the lesions that may be produced by the *x*-rays, and presents illustrative cases. In one, epithelioma followed the use of the *x*-ray in the treatment of lupus erythematosus, and a carcinoma was produced by its use in a case of lupus vulgaris. The author discusses similar reports from the literature and concludes that Röntgen therapy is accompanied with more or less danger. This statement is not made for the purpose of discouraging anybody from the use of so powerful a physical remedy, which can be of benefit in a great many diseases, but only to call attention to the great care which has to be used with the *x*-rays. In some cases the patients have been trusted to inexperienced office attendants, and the physician has noticed the danger only when dermatitis had already set in. When, with the *x*-rays, no improvement or no progress is obtained in the treatment of the disease, it is better to stop and change to some other method of treatment; otherwise danger is lurking and will soon be looming up. When a radiodermatitis has begun, if it is of first degree, bathing the parts with a 2 per cent. solution of aluminum subacetate or of sodium bicarbonate will diminish the itching and the burning sensation, and the skin in a short time will return to the normal condition. If the burn is of second degree with the formation of blisters the continuous bathing with soothing solutions, the opening of the blisters and the other treatment as for any burn will be sufficient. When ulceration sets in recovery is difficult. The best way for a speedy recovery is the excision of the whole ulcerated surface.

8. Appendicitis Complicating Pregnancy.—P. Findley reports fifteen cases in which this complication was present. In all but one of these there had been previous attacks. Six of the cases were mild attacks in which the patients recovered without interruption of pregnancy. Of the others, six recovered and three died. Five cases occurring in the puerperium were unusually severe. Two of the fatalities were from septic peritonitis and one was from bronchopneumonia. One of these cases was not operated on. In the majority the attacks recurred in the early months of pregnancy. In no case was pregnancy interrupted after the removal of the appendix. Pregnancy has probably no influence in inducing a primary attack of appendicitis, but favors renewed attacks. Women who have had appendicitis prior to pregnancy will in 50 or 60 per cent. of cases have more or less trouble with the appendix in future pregnancies. As the condition tends to be specially destructive and dangerous in pregnant women, the earlier the operation is performed the better. According to Wagner, the mortality of non-operated severe cases is 77 per cent. as against a mortality of 6.7 per cent. in all cases, severe or otherwise, in which operation is done within the first forty-eight hours, a record not exceeded in operating for appendicitis uncomplicated by pregnancy. Doubtless this percentage of maternal mortality would be still further reduced were the patients operated on within the first twenty-four hours.

10. Nephritis in Pregnancy.—J. B. DeLee discusses the inflammations of the kidneys complicating pregnancy. In addition to the ordinary forms there are the so-called pregnancy nephritis and the kidney changes occurring in eclampsia. Primary acute nephritis may develop during gestation from the same causes ordinarily producing it, and chronic nephritis may have preexisted, hardly recognized by the patient until the added strain thrown on the kidneys brings it to light. Chronic parenchymatous nephritis is always unfavorably affected by gestation, and is almost always observed in acute exacerbation. It begins in the early months, unlike the nephritis occurring with eclampsia, convulsions occur in one-third of the cases, and labor has a bad effect on the disease and, if prolonged and exhausting, serious damage to the kidneys may result, especially if an anesthetic is used. The puerperal condition does not improve it, and repeated pregnancies hasten death. Chronic interstitial nephritis is more frequent than the other form and convulsions are less often seen. Albuminuria, as shown by the coarser test, is of considerable diagnostic significance. Low urea output is relatively less important, but if the excretion is less than 6 grams careful search should be made for renal disease. Mother and child are both seriously endangered by chronic nephritis and the prognosis should be guarded. A combination with heart disease is fatal. Women with chronic nephritis should not marry, and if married should not have children. If pregnancy occurs in them they should be carefully watched. If the kidney disease is discovered late in pregnancy, the consensus of opinion favors tiding the patient along until threatening symptoms occur and then inducing premature labor. If discovered before the child is viable the pregnancy should be discontinued, though if it occurs nearly at the time when a living child can be born, pregnancy should be carried along for a few weeks to save a living child if possible. During labor nephritics require special care, and the heart's condition should be closely watched. Pulmonary edema or symptoms like cerebral embolism may call for a rapid delivery.

11. Intrapelvic Reconstructive Work.—W. F. B. Wakefield pleads for the use of a more careful technique in reconstructive intrapelvic work. Experience has taught that extensive adhesions may be formed from simple mechanical trauma without infection playing any recognized part. Deft and gentle manipulations should be the rule, and lacerating and puncturing instruments should have no place in pelvic surgery. For general manipulation of the pelvic viscera other than the uterus, the safest and best instrument is the ring sponge holder with the blades protected by a piece of rubber tubing. It can be used with impunity to handle the intestines, the Fallopian tubes, the ligaments, or the peritoneal reflections. Operations of expediency for the correction of mechanical defects should at least afford a reasonable guarantee against postoperative evil consequences, and one should use some method which will not cause any intrapelvic damage. In any case, care must be exercised to strip back the peritoneal reflections thoroughly onto the ligament, so that the patient will not have the nerve-racking dragging sensation so often felt when the peritoneum has been pulled into the abdominal wall. The ligamentary loops should be given sure anchorage and be smoothly disposed of beneath the aponeurosis of the external oblique.

The Lancet.

August 17, 1912.

1. The Importance of Early Functional Treatment in Cases of Contusions and Sprains of the Back. F. Shuttleworth.
2. Epithelial Grafting as a Means of Effecting the Sure and Rapid Healing of the Cavity Left by the Complete Mastoid Operation. C. A. Ballance.
3. The Operative Treatment of Simple Fracture of the Long Bones in Children. H. H. Sampson.
4. A New Method of Demonstrating the Presence of *Bacillus coli* in Sewage-Polluted Water. G. C. Purvis.

5. A Further Contribution to the Study of the Etiology of Appendicitis as a Result of a Blood Infection, with Particular Reference to the Tonsils as the Primary Seat of Infection. F. J. Poynton.
6. How to Fit Up a Laboratory for £10. H. W. Crowe.

1. **Early Functional Treatment in Contusions and Sprains of the Back.**—F. Shufflebotham emphasizes the importance of early functional treatment in cases of contusions and sprains of the back, stating that this form of accident has been neglected by medical men. In all injuries to this region it is essential to eliminate fractures of the spine, which in some instances can be diagnosed only by means of the *x*-rays. A sprain of the back is, as a rule, a complicated injury which may involve muscles and nerves, as well as the joints of the vertebral column, and a knowledge of the anatomy of the lumbar region is essential before the nature of the sprain can be properly understood. These cases are thought lightly of at the time of the accident because, in the majority of cases, the only symptom is localized pain; but they should receive the same attention as fractures and dislocations because of the long-continued disability from work, to say nothing of the pain and suffering which ensue when the treatment is neglected. The author alludes to the urgency of massage and systematic exercises being prescribed early in these cases so as to avoid the formation of adhesions and the atrophy of muscles, and states that the subject is of the utmost importance in industrial districts because of the great frequency of these injuries.

2. **Epithelial Grafting After the Complete Mastoid Operation.**—C. A. Ballance points out that the advantages gained by grafting the mastoid cavity are as follows: (1) Rapid healing of the entire wound, bone, cartilage, and soft parts, on ordinary surgical principles. (2) Immediate protection of the raw bone surface by a layer of living epithelium, and, in consequence, elimination of the pain and discomfort otherwise incidental to treatment by tamponing and of the liability to reinfection of the bone. (3) Considerable shortening of the time during which specially skilled attendance is necessary. Two weeks after the grafting operation the bone granulations are all covered by visible living epithelium, and the rest of the attendance may safely be left to the family doctor. (4) Improvement in hearing. When the graft has been cut very thin and successfully applied healing takes place at once under the best conditions. The graft, except its inner layer of living cells, separates by aseptic molecular necrosis. The fenestræ become covered by the thinnest possible layer of tissue, and consequently the hearing is generally very good, and is certainly much better than when granulation has long been present over the fenestræ. The above advantages are almost invariably obtained when all bone disease has been removed and the raw bone surface has been covered with a single graft, cut sufficiently thin, and accurately applied.

3. **Operative Treatment of Fractures in Children.**—H. H. Sampson concludes that the treatment of simple fracture by open operation gives more perfect results than can be obtained by any other method at present in general use. With reasonable care the dangers of such treatment are negligible. The mortality has been *nil*, and no instance of wound infection has occurred in a complete series of cases. The insertion of a metal plate gives no trouble after a clean operation. Operative treatment should be applied to recent fractures, and not reserved for the imperfect results of conservative measures. The chance of a perfect result being obtained is diminished by the length of the period which elapses between the accident and the operation. Rarefying osteitis and sinus formation do not occur after a clean operation. In view of these results it is reasonable to urge the more extended adoption of Lane's methods for the treatment of simple fractures.

5. **Appendicitis as a Result of Blood Infection.**—F. J. Poynton and A. Paine report their recent supplementary investigation on this subject which they believe brings one a step forward in the study of the etiology of appendicitis. Since Kelynack in 1803 directed attention to the relation of tonsillar inflammation to appendicitis many German investigators have devoted much attention to the point. The authors' earlier paper showed that in young rabbits a micrococcus which they look upon as the exciting cause of acute rheumatism could produce a local lesion in the appendix by direct blood infection, and bearing in mind the importance of tonsillar inflammation in rheumatism those results naturally strengthened the view put forward by Kelynack. The recent investigation apparently showed beyond reasonable doubt that the diplococcus in the tonsil and in the sanious fluid from the appendix in the authors' case were identical in nature and the cause of the lesions in the human throat and appendix and also of those in the appendix and joints of the experimental rabbits. In other words, they seemed to prove almost conclusively that a cause of appendicitis may be a streptococcal invasion through the blood stream from a follicular tonsillitis.

British Medical Journal.

August 17, 1912.

1. On Spinal Anesthesia by Stovaine. With Remarks on 1000 Cases. F. C. Madden, with Notes by H. Shaheen.
2. Complications Following the Administration of Hedonal. R. A. Veale.
3. Congenital Syphilitic Deafness Treated by Salvarsan. G. N. Bigger.
4. Local Application of Salvarsan in Chronic Superficial Glossitis. A. Allport.
5. Acute Formaldehyde Poisoning. J. Watt.
6. A Scheme for Medical Benefit. L. J. Picton.
7. The Reform of Hospital Out-patient Departments. A. Stanley Parkinson.

1. **Spinal Anesthesia by Stovaine.**—F. C. Madden and H. Shaheen believe that stovaine is a reliable anesthetic for all operations below the costal margins, but one must not expect too much of it, or employ it without careful consideration, especially in cases in which any form of general anesthetic would be dangerous. Moreover, the fallacy that after the injection is given and anesthesia is established it is no longer necessary to trouble about the patient, must be once and for all dismissed. Just as much care must be exercised in the administration of the drug and in the management of the patient after injection as with chloroform, and when this is done the feeling of satisfaction after an extensive operation under this form of anesthesia, when the stovaine has acted perfectly and the after-effects have been almost *nil*, must be experienced to be thoroughly appreciated.

2. **Complications Following the Administration of Hedonal.**—R. A. Veale alludes to the more extended use of the intravenous injection of hedonal as a means of inducing general anesthesia. In 300 cases in which this method was followed in the Leeds General Infirmary, the following complications resulting from the use of this method were recorded as follows: Cutaneous edemas, chiefly in the lumbar and gluteal regions; blisters, most commonly found on the heels or outer side of the foot; pulmonary edema; pneumonia; infarction of the lungs; venous thrombosis either at the site of injection or in the femoral vein; and cerebral thrombosis.

3. **Local Application of Salvarsan in the Treatment of Chronic Superficial Glossitis.**—A. A. Allport used one and a half grains of salvarsan dissolved in one-half ounce of glycerin, of which quantity only about a half was used in hourly swabbings over ten hours in the treatment of a case of chronic superficial glossitis. The author emphasizes the following points that this case presented: (1) The long standing of the glossitis and the rapid proliferation of the ulcer which had been formed by the removal of the nodule. (2) The condition of the tongue

became more acute and painful under the administration of iodide and mercury, although the patient had given up all tobacco for over two months. (3) The patient had been under careful medical treatment on and off for seven years before the author saw him, and had given up smoking for short periods. He had improved under these treatments temporarily, but his own confident assertion was that his tongue had never been so comfortable or looked so well for ten years as at the present time. (4) The extraordinary rapidity of the improvement of the whole tongue. At the end of one week, and after only two days of salvarsan the ulcers had diminished to one-quarter their size. There may possibly be a field for similar treatment of chronic inflammations of the nose as well as the mouth, such as old-standing antrum trouble, and it would be useful to hear the opinion of bacteriologists on this subject.

Berliner klinische Wochenschrift.

August 12, 1912.

Thyroid Metastases in Bone.—Regensburger speaks of the special interest attached to this subject. Clinically and for the most part anatomically as well these growths impose themselves as ordinary sarcomata of the bones, and not until the microscopic diagnosis is their full import realized, for they show a far-reaching agreement with the structure of the thyroid and of goiter. The thyroid in such cases may or may not be the seat of malignancy. The author has found in literature notes of 59 cases of this kind of metastasis. The exact nature of the process is far from being settled and the character of the growth has been pronounced benign (at the outset) and malignant, and the parent formation has been called simple goiter, malignant adenoma, and carcinoma. It seems agreed that it has no connection with sarcoma. The author proposes thyreogenic tumor as a designation sufficiently accurate and comprehensive. Clinically there should be no confusion between this affection and struma maligna, for the latter, in addition to causing metastases invades its neighborhood and gives use to numerous pressure symptoms. As a rule, what has seemed to be a harmless goiter suddenly takes on acute symptoms. The converse happens in thyreogenous tumors where the course of the affection is measured in years and not in months. Struma maligna is one of the most rapidly fatal types of malignancy, thyreogenic tumor one of the most deliberate. The arrangement of the metastases is also very dissimilar in the two affections, although in both there is a notable tendency to involve the bones, which in the thyreogenic tumors is characteristic of the disease. In struma maligna the percentage of bone metastases is over 24, these being second in frequency only to the pulmonary metastases. Hence there is some close connection between the thyroid and the bones, as also seen in cretinism.

Phonoscopic Percussion.—Tornai mentions the strong individualization of the results in ordinary percussion which stand much in the way of harmonious consultations. Something is required to lend more objectivity. He then refers to the orthopercussion method, so-called, of Goldscheider, Moritz, and Dietlen, in which attempts are made to create vibrations through the chest which are capable of being registered or of causing sounds which may be overheard. No reference is made to the ordinary auscultatory percussion of textbooks. It is essential that percussion should be very gentle. The author also uses two separate stethoscopes, which when employed in combination he terms the phonoscope. For a pleximeter he uses his left forefinger. The percussion movements of the right middle finger should be made rapidly—three or four a second. This method was discovered entirely by chance, for he was engaged in orthopercussion while the stethoscope (a double one, for he had been making studies of the heart cycle) hung loosely from the ears. The sounds of percussion he found were rendered much more distinct, apparently as a result of the projection of the vibrations through the surrounding media. The vibrations should proceed from the smallest possible area.

Distention Luxation in Syringomyelia.—Joachimsthal the orthopedist reports a case of dislocation of the first row of phalanges on the metacarpals which proved to have been due to alterations of the joints the result of syringomyelia. As is well known, the latter disease causes extensive trophic alterations in the upper extremities, as does tabes dorsalis in the lower limbs. The arthropathies which result bear a certain resemblance to arthritis deformans, with this difference that in the former class the analgesia contributes to aggravate the state of affairs. In the neuropathic arthropathies we usually see destruction of the articulating structures, but the dislocations may exceptionally occur without this prerequisite, especially in the shoulder joints. It is indeed strongly probable that some cases of habitual dislocation of the shoulder joints are due to syringomyelia. In many cases of dislocation at the elbow, wrist, and fingers radiography has shown extensive destruction of the articular surfaces. In the author's case, however, the latter are seen to be quite intact; so that the changes which made possible the dislocation must have resided in the capsule of the joints. The displaced bones could be readily restored and held in position and the dislocation was probably attributable to distention of the joints as a result of the spinal malady.

Münchener medizinische Wochenschrift.

August 13, 1912.

The Portable Museum of Nursling Care of Bavaria.—Koebner describes this institution, the first of its kind in Germany, and the idea of Professor Hecker, first put into practice in 1910. The first exhibit comprises data on nursling mortality, which naturally furnishes the *raison d'etre* of the museum. This is made as full and comparative as possible, the records going back to 1862. The effects upon the mortality curves of breast feeding are brought out in unmistakable fashion. Natural feeding is taught by showing the right and wrong positions, by properly constructed and ill constructed teething rings, nipples, etc. To forbid these devices is not deemed prudent. Analyses of milk at different months show the fallacy of the claim that women run out of supply at untimely periods. Naturally the possibilites for illustrating artificial feeding are very much greater. Certain bottles show the limits for feeding portions. The warmth of the bottle is tested by holding it against the eyelid, not by tasting (shown by two designs). Clothing and care are illustrated by models. Bathing, taking the rectal temperature, care of vaccination pustule, and other details are illustrated. The physiology of the nursling is illustrated in many ways. The food requirements are given. The caloric energy is shown in amounts of coal, so that it readily appears that the greatest demand for fuel is in the third month. Tables of weights, lengths, and ages are given. Photograph albums showing the nursling conservation movement in all its phases as carried out in the city of Munich complete the museum.

Sexual Pedagogy.—Grassmann gives a summary on this subject based on the work done and facts learned, with reference to Munich. The precosity of intercourse and of the sexual impulse, among the boys at least, has led to an increase of venereal diseases, perhaps also of masturbation. This can be antagonized only by education which inculcates a sense of chivalry toward girls, a consciousness of social duties and obligations, and a strong will as part of a physical training, and provides a full explanation of sexual matters to rob them of any mystery, etc. This education must be personal and individual and

undertaken by parents and the family physician. Class instruction in schools must also deal with these problems. Degenerate children should be kept out of the grades and in special classes.

The Eucalyptus Treatment of Scarlatina and Measles.—Kretschmer states that this treatment did not originate with Milne as is erroneously believed. It was taught as far back as 1890 by Curgenven, who used eucalyptol both externally and internally and even as a common disinfectant of apparatus and bedding. The author has used the treatment extensively in Strassburg according to the directions of Milne, and cannot endorse it as preventing complications. In 77 cases of scarlatina there were complications in one-half of the patients. In not a few cases these supervened after the completion of the treatment. In a control series of cases before the treatment was adopted there were fewer complications.

Deutsche medizinische Wochenschrift.

August 15, 1912.

Treatment of Arteriosclerosis.—Hochhaus mentions the frequent inherited tendency to this affection and also its dependence on a number of individual factors. The earliest symptoms often appear when it is too late to arrest the disease. All the possible causal moments must be eliminated one after another, as the excessive use of alcohol, tobacco, and coffee. Physical or mental overeffort must be offset by rest, work being restricted in duration and intensity. The ideal state to be attained is one of quiet activity. The patients are naturally excitable and this should not be aggravated by worry or foreboding. The question of diet is a vexed one and the best course is to avoid any kind of extremes. This applies also to the ingestion of fluids. As a rule, this should amount to 1,500 c.c. As for drugs, there are no specifics, but iodine approximates one. It unburdens the circulation in some unknown manner. Nothing is gained by giving large doses. The value of the nitrites and nitrates is questionable because they are not really indicated. The author does not believe that it is necessary to lower the blood pressure save on special occasions. The balance of the treatment is chiefly hygienic, comprising hydrotherapy, massage, etc. Many indications are not due to the disease *per se*, but to its complications, as nephritis. The high-tension current is not even mentioned.

Statistics of 367 Choledochotomies.—Bruning concludes from this large material as follows: No opportune operation, an appedectomy, for example, should be done on the occasion of a choledochotomy. The hepatic duct should always be drained and in addition to the catheter a drain and tampon should be used as protection from escaping bile. One should irrigate constantly in the after treatment. In cholangitis one should keep up drainage for months, for even the escape of sterile bile does not protect against recurrence. As cystotomy often causes subsequent pain the prospect of an ectomy should always be considered. If one can feel distinctly an indurated pancreas an anastomosis should be made. In respect to opening the choledochus this should be done whenever stones can be felt or when we know they have escaped; when the duct is dilated or there is a suspicion of cholangitis; when bladder with cystic duct patent contains small stones; when the bile—the excretory duct being patent—is turbid or purulent. The author's total mortality for his series was 7.7 per cent. and this can only be bettered by earliest possible intervention.

Food Poisoning Simulating a Cerebral Focal Affection.—Meyer refers to the close association between intestinal autointoxication and cerebral symptoms, especially in children. Heubner mentions a "coma dyspepticum." In the first three years of life such conditions are encountered which are not cyclical nor connected with acetonuria, and which present great diagnostic difficulties. The fatal convulsions due to gastroenteric disturbance naturally suggest themselves here, and many lives might doubtless have been saved if the treatment had comprised rapid evacuation of the elementary canal. The author cites a case in point: A child aged 3 years fell ill suddenly with convulsions, unconsciousness and fever. The medical attendant erroneously prescribed purely symptomatic treatment, chloral and cold packs, but fortunately the former was not administered (it was to be used contingently). The parents of their own accord had given castor oil which brought away much foul smelling fecal matter. The author found the child in a sort of tetanoid rigidity. There had been no ingestion of questionable food, save perhaps of slot-machine candy, but something eaten the day before had evidently disagreed, for the irregularity of the picture suggested a food poisoning. The cerebral symptoms persisted three or four days, and throughout there were choreic movements on the left side which suggested a focal lesion in the right hemisphere. During this period the child was unconscious and out of its head when roused. To explain the picture it was necessary to assume the existence of a focal encephalitis or meningitis due to some toxic intestinal product. The latter was unknown. Of the various articles eaten, all of which were part of the regular diet, sourkrout may have been the offending substance. Whatever may have been at fault the case harmonizes well with ptomaine poisoning resulting from stagnation.

Epilepsy of Cardiac Origin.—F. Mouisset and J. Gate state that in the course of a prolonged and persistent asystole the alterations in the circulation of blood in the brain, the presence of toxic substances, and the vascular and inflammatory lesions in the brain combine to produce a hyperexcitability of the latter organ. This may express itself in crises of true epilepsy or of related psychic manifestations.—*Revue de Médecine.*

Tonic Spasm of the Muscles, Chiefly of the Extremities (? Myotonia).—J. Galloway reports the case of a girl, aged fourteen, who is said to have shown no signs of the present condition of the muscles of the left arm and leg till about Christmas, 1911. She states that she could play the piano readily up to that time. It was then noted that she had difficulty in moving the muscles of the left arm and hand, a condition that has continued and increased up to the present time. There is similar difficulty in moving the muscles of the left leg and foot. The right arm, hand, and leg appear to move practically normally. On observing the muscles of the left arm and hand they are found to pass into a condition of spasmodic contraction on very slight exertion or stimulation; the contractions resulting relax very slowly. On clasping the hand on any object the grasp of the hand continues for a considerable period of time—many seconds—and it is only after strong voluntary effort or after waiting for some time that the grasp is relaxed. Movements bring about a similar long-lasting spasm of the muscles of the left shoulder. Similar long-enduring spasm affects the muscles of the left leg and foot, causing some impairment of ease in walking. The toes become spread out in a spasmodic manner on attempting to extend the foot, and the calf muscles, as also the extensors of the leg, become firm and remain so for an unusually long time. All movements become easier and more rapidly executed when repeated. The electrical reactions are normal, there is no alteration in sensations, and no definite evidence of increase of reflexes, nor are there involuntary muscular movements. The child is well in all other respects. There is no evidence or history of injury to the head or brain, no headache, vomiting, or sickness, the eye movements are normal, and there are no changes in the fundus oculi. The character of the movements of the muscles suggests "myotonia." It is noteworthy that this condition is stated to have commenced about five months ago, and that no history is obtained of any other member of the family being affected in this way. The affection of the muscles is almost entirely limited to the left side, chiefly the arm and leg. The condition of spasm, although markedly increased on voluntary movement, is probably never entirely absent, and there is a slight suspicion of increase of the tendon reflexes of the lower extremity.—*Proceedings of the Royal Society of Medicine*

Insurance Medicine.

SUGGESTIONS TO MEDICAL EXAMINERS

BY THE INSURANCE EDITOR.

THE URINE.

THE chemical examination of the urine is a mechanical process and there is no justification for inaccuracies, especially as the examiner is not asked to make a scientifically complete uranalysis for the discovery of small abnormalities as an increase or decrease in the phosphates, chlorides, urea, or uric acid, the practical significance of which is usually not definitely known. In fulfilling the requirements that are called for, however, the companies expect the examiners to use the utmost care and precision, as otherwise the analysis will be valueless. The standard methods described in the following lines are simple and reliable, and there will be no danger of the occurrence of mistakes if they are faithfully followed.

Urination.—Symptoms of disease of the urinary organs, such as frequent or painful micturition, persistently turbid or otherwise abnormal urine, should be carefully investigated.

When the applicant acknowledges to urinating at night, it is essential to learn the frequency, amount passed, and the reason. In men over 50 it may be due to prostatic disease. On the other hand, it may be occasioned by drinking considerable water or some other beverage before retiring or may be due merely to habit. Close questioning will usually elicit the desired information.

How to Procure Urine.—The urine must be voided in the presence of the examiner. When, however, the applicant is a woman, the examiner must be near enough to be morally certain that the urine is passed by the applicant. He should also notice whether the urine, when returned to him, is in the container presented by him to the woman for that purpose and is still warm. A report must never be based upon the analysis of a specimen which has been brought or sent to the examiner.

How to Report Abnormal Ingredients.—If the first specimen presents an abnormality, either in specific gravity or by the presence of albumin or sugar, the examiner should obtain and analyze a second specimen before reporting; then if the second specimen also presents the abnormality, he should include the analysis of both specimens in the medical report and forward it to the home office in the usual way. If, however, the second specimen presents no abnormality, a third specimen should be obtained by the examiner and sent to the home office properly preserved and vouched for, the analysis of the first and second specimens being included in the examination report. In addition to this, the medical department will usually call for still another sample to be mailed to the home office in a container which should be sent to the examiner and which carries in it an antiseptic to act as a preservative.

In all instances when albumin or sugar has been found in the urine, a statement signed by the applicant as to whether or not he has been under treatment or on restricted diet for albuminuria or glycosuria during the past six months should be furnished if the examiner finally decides to recommend the risk.

These requirements are practically the same in all companies, though there may be an occasional slight variation

APPARATUS.—The only apparatus needed is:

1. Two test tubes, five or six inches long and one-half to three-quarters of an inch in diameter.
2. Urinometer of a reliable make, preferably Squibbs. Test it frequently in distilled water; if it rests at the zero mark it may be considered accurate.
3. Alcohol lamp or Bunsen burner. The latter is always ready and a time saver.
4. Litmus paper, red and blue, of a reliable make. This should be kept in bottles so that it will not be affected by volatile acids and alkalies.
5. Glass pipettes.
6. Filter paper and a glass funnel.

The only reagents needed are:

1. Nitric acid, chemically pure.
2. Strong official acetic acid.
3. A solution for testing sugar.

(The subject of uranalysis will be continued in succeeding numbers.)

Research Work in Life Insurance Medicine.—By Frederick L. Hoffman. (See page 417.)

A Trace of Albumin.—According to W. Blair Stewart a trace of albumin in the urine is the red flag of danger, and it is the duty of the insurance examiner on the one hand to give the company every benefit of doubt—and on the other to recognize the personal rights of the individual examined. After definitely deciding that albumin is present in very small trace, it is just to the company and patient to examine at least three specimens taken at different times of day before final report is given. Physiological and functional albuminuria must be distinguished one from the other with care. More injustice is done to women applicants than to any others and the fact must be taken into consideration that a menstrual flow in small amounts is likely to deceive the examiner unless he be careful. The sphygmomanometer should be used in every albumin case, as the presence of albumin in trace with a high blood pressure is almost invariably an indication of organic kidney disease. Every albumin case should be held up and studied as not suitable for insurance until such time as it can be declared free from disease or trace of albumin. The foresight of those companies that have established a system of periodic health examination of their policy holders should prove a great economic factor in preventing and eradicating diseases that have been developed in the first examination or that have developed since.—*The Lancet-Clinic*, July 27, 1912.

German Invalid Insurance.—The number of cases of sickness with inability to work which received aid from the various classes of invalid insurance in Germany during 1910 was 5,197,080 as against 5,045,793 in 1909. The average number of members increased from 12,519,785 in 1909 to 13,069,375 in 1910. The total number of days of sickness for which compensation or hospital treatment was given was 104,708,794, an average of 8.03 per member, compared with 103,308,112 days in 1909, an average of 8.26 per member. The total number of funds was 23,188 in 1910, divided among parish invalid insurance, district sick funds, trade funds, building funds, corporation funds, and registered funds. The joint capital of the various funds amounted to $70,543,240 in 1910 and the receipts minus those for invalid insurance came to $90,269,710. The regular expenses minus the cost of management for invalid insurance amounted to $83,429,752. The costs of illness included in the last total aggregated $76,164,937.

Book Reviews.

RECENT METHODS IN THE DIAGNOSIS AND TREATMENT OF SYPHILIS (The Wassermann Serum Reaction and Ehrlich's Salvarsan). By CARL H. BROWNING, M.D., Lecturer in Clinical Pathology, University of Glasgow; Director Clinical Research Laboratory, Western Infirmary, Glasgow; and IVY MCKENZIE, M.A., B.Sc., M.B., Ch.B., Director Western Asylums' Research Institute, Glasgow; Physician to the Out-Patient Department, Western Infirmary, Glasgow. In collaboration with John Cruickshank, M.B., Ch.B., and Charles G. A. Chrislett, M.B., Ch.B., Walter Gilmour, M.B., Ch.B., Hugh Morton, M.B., Ch.B. With an introduction by Robert Muir, M.A., M.D., F.R.S., Professor of Pathology in the University of Glasgow. Price, $2.50. Philadelphia and New York: Lea & Febiger, 1912.

THOSE persons who assumed a critical attitude toward the theoretical basis of the Wassermann reaction when it began to come into use in 1907 have now received their final justification in the report by Noguchi that extracts from pure cultures of the *Spirocheta pallida* do not act as antigen in the Wassermann reaction. This means either that the Wassermann reaction is absolutely non-specific or that the *Spirocheta pallida* is not the cause of syphilis. The first is probably the true statement of the conditions. As soon as it was shown that oleic acid, soap, and extract of rabbit's heart could be substituted for syphilitic tissues in carrying out the Wassermann reaction, it was evident that the syphilitic poison merely produces some change in the fatty and lipoid constituents of the blood which gives a complement fixation under certain conditions. There is no reason, therefore, except a statistical one, for the reaction having any diagnostic value. At the present time, however, there is such a large body of statistics showing the real diagnostic value of the Wassermann complement fixation test that the establishment of its final usefulness seems undoubted. It is largely by the work of such men as the authors of this very valuable text that the final determination of the question has been reached. The practising physician without laboratory training who attempts to read it will certainly learn a good deal; he will also in all probability not understand a considerable part of it; but any one who is familiar with the recent laboratory works on immunity and especially that portion directed toward the diagnosis of syphilis will find in the volume the answers to many questions, an explanation of much of the complicated matter now seen in current medical journals, and a good example of the amount of painstaking work which is required to produce what may seem to be a very small yield of practical value. It is impossible within the limits of a review to discuss all the points treated; it can be said only that the technique of the various modifications of the Wassermann is given very fully, as well as the methods of making antigen, the theory of the reaction, its clinical application, and a study of the cerebrospinal fluid. In the second part there is a very full study, both from the authors' own experiences and from the reports of published cases, of the effects, curative and fatal, of the administration of salvarsan. The work is a very valuable contribution to the literature of syphilis.

ON THE PHYSIOLOGY OF THE SEMICIRCULAR CANALS AND THEIR RELATION TO SEASICKNESS. By JOSEPH BYRNE, A.M., M.D., LL.B. New York: J. T. Dougherty; London: H. K. Lewis, 1912

THE writer of this book says in his preface that he makes no pretensions of priority in time respecting the experimental production of phenomena resembling those of seasickness; but he claims that his experiments were made before he had any information of the work done by Bárány, Neumann and the others who have worked along their lines. We find no reference to Bárány or Neumann in the list of 288 names in the bibliography. The writer's experiments, he says, were undertaken from a belief that the semicircular canals were involved in the causation of seasickness. He used rotations, aural irrigations, stimulation of the retina by strong light and galvanism to the mastoid areas. The phenomena of nystagmus and the displacements of the head that occur in rotations, aural irrigations, etc., and the mechanisms involved in their production are studied and carefully worked out. The sickness induced experimentally, in ways stated above, is compared with seasickness elaborately studied in a number of cases on board ship. The effects upon the organism as a whole and upon the mechanisms of digestion and of the circulation were found to be analogous. A condition of hypoacidity of the stomach was found in both instances. Vasomotor exhaustion is an important feature. Most drugs and alcoholic stimulants are contraindicated. Atropine and strychnine were found useful for the subjective sensations. The book is extremely interesting and a valuable contribution to the subject.

OPHTHALMIC MYOLOGY. A Systematic Treatise on the Ocular Muscles by G. C. SAVAGE, M.D., Professor of Ophthalmology (Defects of the Eye) in the Medical Department of Vanderbilt University, Author of "New Truths in Ophthalmology" and "Ophthalmic Neuro-Myology," ex-President of the Nashville Academy of Medicine, ex-President of the Tennessee State Medical Association, ex-President of the Southern Medical Association. Eighty-four illustrative cuts and six plates. Second edition. Published by the Author, Nashville, Tenn., 1911.

THE fact that Dr. Savage's work is now in its second edition attests to the interest that it has awakened. In his study of physiological optics he arrives at conclusions differing from those that were enunciated by Helmholtz and that have since ruled: 1st. In relation to the location of the anterior and posterior poles of the eye. 2d. The place of crossing of the secondary visual lines in the eyeball. On the conclusions that he has arrived at Dr. Savage proceeds to construct the phenomena of optics as presented in the human eye. The ocular rotations are carefully and exhaustively considered. The innervation of ocular muscles to maintain binocular vision throughout the "field of binocular fixation" is explained by the construction of quite an elaborate scheme of "innervative centers" the existence of which is asserted with much positiveness and the location of which is conjectured. The horopter or isogonal circle is described to the author's satisfaction on the hypothesis of the physical and anatomical conditions believed by him to exist. Laws of binocular rest and motion are laid down. Methods of testing and ascertaining the condition of ocular movements are described, together with the various operative and non-operative procedures for the correction of errors. The work is one of 685 pages, is well printed and well illustrated. The subject as presented by Dr. Savage is deserving of the careful study of those interested. While the majority of the students of ophthalmology are not inclined to indorse Dr. Savage's position there is much in the work that is worthy of consideration.

STUDIEN ÜBER DARMTRÄGHEIT (STUHLVERSTOPFUNG), IHRE FOLGEN UND IHRE BEHANDLUNG. Von Dr. FRANZ XAV. MAYR, in Karsbad-Wien. Price 6 marks. Berlin: S. Karger, 1912.

DR. MAYR gives the usual causes and varieties of constipation and then attempts to analyze its consequences, both local in the gastrointestinal tract and indirect as shown elsewhere in the organism. In gathering the various injuries caused by constipation he has not seen fit to exclude such hardly probable conditions as diseases of the liver, tumors, etc. On the other hand, he gives a moderate picture of "autointoxication," and is especially clear, simple and sane in his therapeutic directions. The book contains much that is original and should prove of value to the internist.

THE TOBACCO HABIT: ITS HISTORY AND PATHOLOGY. A Study in Birth-Rates. Smokers compared with Non-Smokers. By HERBERT H. TIDESWELL, Member of the Royal College of Surgeons, England; Licentiate of the Royal College of Physicians, London; Late House Surgeon to St. George's Hospital and Northampton Infirmary. An Appeal to Medical Students and all Members of the Medical Profession who are true Christians and zealous in promoting true Hygiene and Temperance. Price, $1.40. London: J. & A. Churchill, 1912.

NOT since good King James issued his famous counterblast against tobacco has there been so serious a charge brought against the use of this comforting weed. At the very outset the author puts his finger upon the difficulties of his task in his statement that: "Unfortunately a very serious drawback to any crusade against smoking is its very wide prevalence among medical men who ought to know and hence act better." After reading this volume it is impossible that any sane man could ever smoke again. The author proves, to his own satisfaction at least, that the use of tobacco causes weakening of the mind, cardiac irregularity, malingering in the British Navy, and impotence. Smoking in the husband even causes miscarriage in the wife and imbecility in the children, and an excess of female children over male is also a definite sequence of the intemperate use of tobacco. Epileptic convulsions and fatty degeneration of the arteries are further sequelæ, and it is to be regretted that space is wanting to complete the list of serious conditions due to tobacco smoking. All "antis" will find both comfort and ammunition in this book.

Society Reports.

AMERICAN LARYNGOLOGICAL ASSOCIATION.

Thirty-fourth Annual Meeting, Held in Atlantic City, N. J., May 9, 10, and 11, 1912.

JAMES E. NEWCOMB, M.D., PRESIDENT, IN THE CHAIR.

The Exenteration of the Ethmoidal Labyrinth by the Intranasal Route.—Dr. HARRIS PEYTON MOSHER of Boston read this paper, stating that the anterior boundary of the ethmoidal labyrinth was made by the internal angular process of the frontal bone and the posterior surface of the ascending process of the superior maxilla. The labyrinth could not be entered effectively unless the curette were carried outward behind the ascending process of the superior maxilla toward the lacrymal bone. Removing the anterior end of the middle turbinate and curetting upward and not outward did not open the labyrinth to any extent. The internal angular process of the frontal bone made two-thirds or the whole of the bony ring which was the first part of the nasofrontal duct. The best guide to the duct was the posterior surface of the ascending process of the superior maxilla. In a large number of cases the nasofrontal duct was not a tubular canal, but consisted of a bony ring at the beginning and then became a triangular anteroposterior slit. This was more like an ethmoidal cell or an irregular meatus than a duct. The nasofrontal duct tended to run from without inward and to come into relationship with the extreme upper part of the anterior end of the middle turbinate. When the drainage canal of the frontal sinus had the cell-form the anterior end of the middle turbinate made its inner boundary. The duct, therefore, was reached most easily through the nose and through the anterior end of the middle turbinate at the level of the superior turbinate. A curette introduced at this point and carried outward toward the lacrymal bone and then withdrawn a little and carried straight downward and backward entered the anterior part of the labyrinth behind the ascending process of the superior maxilla and broke down the cells through which the nasofrontal duct ran, destroying both the cells and the duct. Very little curetting was required to convert the anterior part of the labyrinth into a single cavity. In the roof of this chamber, usually in the anterior outer angle, the opening of the nasofrontal duct was placed. If it was the wish of the operator to clean out all the ethmoidal cells the posterior half of the labyrinth was entered by piercing the attachment of the middle turbinate and by curetting still further backward, using all the while the outer side of the middle turbinate as a guide. If the head of the patient was held level the middle turbinate guided the curette backward into the posterior ethmoidal cell. Often the posterior half of the labyrinth was a large cavity made up of only one or two cells. This portion of the labyrinth had been, as it were, exenterated by nature. When the curette brought up against the back wall of the labyrinth the remaining part of the middle turbinate and the lower half of the superior turbinate were removed. Then the posterior part of the superior turbinate was taken away flush with the front face of the sphenoidal sinus. The operator now recognized the inner part of the front face of the sphenoidal sinus which is free in the nasal cavity, and the outer part which had a common wall with the posterior ethmoidal cell. The upper outer angle of the posterior ethmoidal cell was dangerous to curette or to probe. It was of the utmost importance that the operator should be sure of his landmarks in this locality. He orientated himself by finding the upper rim of the choana and then differentiating the free face of the sphenoidal sinus by probing upward from the rim of the choana close to the septum. Having made out the extent of the free face of the sinus the width of the common wall between the sphenoidal sinus and the posterior ethmoidal cell was determined. The dividing line between the two parts of the anterior face of the sphenoidal sinus was made by an obliquely vertical line which was the attachment of the superior turbinate. A common mistake made by the operator was to get lost in the posterior ethmoidal cell—he went too high and too far outward and considered the posterior wall of the posterior ethmoidal cell as the whole of the front face of the sphenoidal sinus. This mistake, if persisted in, would carry him into the brain. Insufficient removal of the posterior part of the superior turbinate and allowing the head of the patient to become tipped upward, were the chief causes which led to this confusion. After the landmarks of the front face of the sphenoidal sinus had been cleared and recognized the sinus was entered near the septum, if possible through the ostium, and the whole of the anterior wall removed. The mishaps of the operation were entering the orbit through the lacrymal bone and entering the posterior part of the anterior fossa of the cranial cavity at the apex of the orbit. The first accident was trivial, the second fatal. Puncture of the extreme upper part of the anterior end of the middle turbinate for catheterizing the frontal sinus or for exenteration of the anterior ethmoidal cells was readily accomplished under cocaine anesthesia. For the complete removal of the anterior and posterior cells, especially if this was to be accomplished at one sitting, it was more satisfactory to use a general anesthetic.

Report of a Case of Myofibroma of the Nasopharynx.—Dr. JOSEPH H. BRYAN of Washington, D. C., said the report of this case was interesting from the fact that benign growths of this character in the nasopharynx in children were not very common. Maggie C., an undeveloped and anemic girl, 12 years of age, came under his observation during March of this year, complaining of occlusion of both sides of the nose, headache, noisy respiration and at times difficulty in swallowing. Examination of the nose showed the left side quite free, but no air could be drawn through it into the nasopharynx. The right side was so filled with thick mucus secretion that no satisfactory view of the interior could be obtained. After clearing the nose of mucus he could not get any view of the growth. Examination of the mouth showed a large pinkish growth hanging in and filling the nasopharynx almost completely. The growth extended into the pharynx about 1/6 of an inch below the free margin of the soft palate. Owing to the great timidity of the child it was impossible to remove the growth without the aid of a general anesthetic, so she was placed under ether anesthesia, and a wire snare was passed well up into the nasopharynx, the growth seized, and after firm traction withdrawn. The hemorrhage following was quite severe for a few moments, but gradually subsided after firm compression by means of a gauze compress passed well up into the nasopharynx. The growth after removal was found to be pinkish in color, quite firm to the touch, and measured 3 inches in length. Several days after its removal, on posterior rhinoscopic examination, an excellent view of the nasopharynx was obtained, and there were two points which showed an ecchymotic state, either of which might have been the seat of attachment: one in the roof of the nasopharynx which contained some adenoid tissue, and the other in the right posterior nares just above the posterior extremity of the middle turbinal. The latter was probably the point of attachment. The following was a report of the microscopic examination made by Dr. J. B. Nichols: "The tumor is covered with stratified columnar epithelium, and is made up of myxofibromatous and soft fibromatous tissue, containing massive extravasations of blood and fibrin, small blood vessels are plentiful, gland structure nearly absent. Scattered through the substance of the tumor, in places in more or less dense collections, are an abundance of polymorphonuclear leucocytes, small lymphocytes, plasma cells, and pigmented phagocytes." It was impossible to estimate the frequency with which these neoplasms occurred, owing to the fact that many cases were not reported, but judging from the number of reported cases they could not be considered to be very common. Myxofibromas might be considered of nasal origin and generally sprang from the upper part of the posterior nares, where the nasal mucous membrane was continuous with that lining the nasopharynx, while fibroma, a much more serious affection, had its origin in the nasopharynx. The former might therefore be said to partake of the characteristics of both nasal and nasopharyngeal growths, which might be explained by the fact that they sprang from the junction of the two cavities, the lining membrane of the two cavities being quite distinct histologically.

Report of a Case of Rhinopharyngeal Fibroma.—Dr. JOSEPH S. GIBB of Philadelphia reported this case of a boy 13 years old, having symptoms of nasal obstruction for six months with epistaxis. Examination showed growth springing from vault, probably from basillar process, everywhere attached, and covered by mucous membrane. No pedicle. Ether was administered, and a preliminary tracheotomy performed. An effort was made to remove the growth by heavy wire snare passed through the nasal chamber, but entirely unsuccessfully. The growth was then grasped by strong postnasal forceps and by a tearing, twisting and traction movement, combined with an effort to separate the growth from its attachments by the index finger of the operator's left hand, the growth was finally removed. The bleeding was free during the manipulation and profuse when the growth came away. The vault was packed with gauze; upon its removal there was very little bleeding and it was not replaced. The tracheal tube re-

mained for one day; the recovery was uninterrupted. There had been no recurrence, although more than two years have elapsed since operation. In his remarks on the subject of rhinopharyngeal fibroma Dr. Gibb emphasized the importance of early diagnosis. At this time the growth might be removed either by the hot or cold wire snare or avulsion with comparatively little danger; later, when the growths had attained a larger size, extended into the contiguous cavities, and formed dense adhesions, the difficulties attending removal are greater. In some cases avulsion might be employed, but in the greater number of the advanced cases he believed it better and safer to use a combination of electrolysis, galvanocauterization, and the hot and cold wire snare. One or all of these measures should be used, depending on the character of the case.

Aphthous Ulceration of the Upper Air Passages in Pulmonary Tuberculosis.—Dr. JOHN N. MACKENZIE of Baltimore stated that it had long been debated whether the ulceration in question was a specific ulceration due to the special cause of tuberculosis. After a preliminary discussion of the subject the author gave a brief review of the controversy to which it had given rise and recalled in minute detail the description he himself had given of the ulcers and their relation to pulmonary tuberculosis which he had published in 1881 in the *Monatsschrift für Ohrenheilkunde* and in the Transactions of the Medical and Chirurgical Faculty of Maryland in the following year (1882). His histological observations went to show that these ulcerated areas were the result of a circumscribed, superficial, "diphtheritic" inflammation of the mucous membrane—that is to say, an infiltration of the tissues with so rich and rapid cell proliferation as to end in necrosis and sloughing of the superficial layers. According to his investigations this form was due to the corrosive action of the sputum from the lung cavities, through the medium of unknown bacteria, and he supported his contention by the following facts: (1) The predilection of the ulcers for those places which were in constant contact with the sputa, viz., the trachea and bronchi, and especially the posterior wall of the former and the laryngeal surface of the epiglottis; (2) the fact that they increased in number as the lungs were approached and that they were much less common in the upper portion of the larynx and trachea; (3) that they might be traced from the bifurcation of the trachea to the division of the bronchial tubes, where in all cases they became visible only in one tube, which was that leading to a cavity; (4) their absence in the bronchi of lungs which were not the seat of cavities or advanced tuberculous change; (5) their occasional presence in the esophagus, stomach, and intestines; (6) their occasional appearance in suppurative pneumonia and gangrene of the lung. He therefore regarded them as an inoculation, so to speak, of the mucosa with the detritus from the broken down pulmonary tissue, leading to a loss of substance pathologically distinct from, but possessing some of the characteristics of, the tuberculous ulcer. Although due to the disintegration in the lung, he did not regard them as specific tuberculous products, for the following reasons: (1) They differed histologically in no respect from similar ulcers found on the mucosa of non-tuberculous subjects; (2) well pronounced circumscribed infiltration due to necrobiosis and sloughing, and identical with these aphthous ulcers, was found, though not as frequently and abundantly in the mucosa, especially of the trachea, as a secondary complication in diseases other than pulmonary tuberculosis (gangrene of the lung, perforation of the trachea by broken down, sloughing bronchial glands); (3) that on other mucous membranes, under similar conditions, namely as the result of a neighboring long-standing gangrenous process, or the constant passage over them of an ichorous discharge, ulceration was found identical with that under review, as, for example, in the vagina as the result of gangrene of the uterus. He concluded therefore that the ulcers were relative to the lung affection insofar as they were produced by the corrosive action of the sputa, but that in the then state of our knowledge they could not be regarded as specific tuberculous products. At the time these observations were made the study of the subject was rendered infinitely more difficult by our scant knowledge of its bacteriology, and the technique of examination then in use was ridiculously primitive when compared with the methods of precision and exactness of modern scientific research. The bacillus had not been isolated and the problem had to be worked out without the light of that discovery. For these reasons it was not surprising that there should have been so much divergence of opinion on the subject. But even with modern methods there was still no consensus of opinion among authorities on the subject (the vast majority of pathologists and laryngologists holding that the aphthous ulcer was a true tuberculous product) until the atmosphere of the question was clarified by the researches of Ziba, in the Pathological Institute at Strassburg. (*Archiv für Laryngologie*, XXIV, Band, Heft, 3, 1911). As the result of his histological and bacteriological researches he arrived at the same conclusions reached by Dr. Mackenzie, and believed with him in the existence of the aphthous, as contradistinguished from the true tuberculous, ulcer of the trachea and larynx, in pulmonary tuberculosis. He had found that it was due to streptococci in the sputa from the lung cavities; that infection took place from the inner surface of the mucosa and produced an inflammatory process associated with tissue necrosis and which led to the formation of the aphthous ulcer; that the latter might become later tuberculous, but in the aphthous ulcer originally there was neither in its base or walls any trace of miliary tubercle. This conception of its nature was furthermore supported by bacteriological examination. Only in the ulcers in which miliary tubercles were discovered were tubercle bacilli found, and solely in the region of the miliary tubercle itself. In all other cases, both miliary tubercle and bacilli were absent. Even in those cases in which tubercle bacilli were found in the secretion which covered the mucosa, both characteristic structure and bacillus were wanting. Aphthous ulcerations of the larynx and trachea produced by streptococci were necessary to or invited the development of tuberculous ulceration. This was all the more probable when it was remembered that they appeared in greatest numbers in the last stages of pulmonary tuberculosis. All this period the great majority of the ulcers were streptomycotic in character and secondary tuberculosis developed in them only here and there.

Indications for the Use of Salvarsan in Syphilis of the Nose and Throat.—Dr. JOSEPH L. GOODALE of Boston stated that his experience extended over 36 cases of syphilis treated by salvarsan. Intravenous injection was done in all cases without stomach disturbance beyond occasional nausea and chilly sensations. The author advised the use of salvarsan in preference to the former methods under the following conditions: First, where prompt removal of infectivity was important on social or conjugal grounds; second, in cases exhibiting tendency to mercurial stomatitis; third, in those patients where lesions continually recurred; fourth, for purposes of diagnosis where it was impossible to remove a specimen for examination, or where prompt control of a supposedly syphilitic lesion was important, as in gumma of the septum; and finally, in those forms of tertiary syphilis which exhibited slow development and a protracted course analogous to the serpiginous gummata of the skin. With reference to the power of salvarsan to effect a cure opinions were not yet unanimous, but the weight of evidence justified the statement that this remedy in repeated doses, and in association with mercury, offered the best hope of attaining this result.

The Upright Position in Ether Operations Upon the Nose, Throat, and Other Portions of the Head.—Dr. THOMAS R. FRENCH of Brooklyn said that the almost universal fear among surgeons of performing operations upon the nose and throat while the patient was in the upright position had no real foundation in fact. The reasons for preferring the upright position in operating under ether narcosis were many, but the principal ones were: First, better operative work could be done because the surgeon was accustomed to viewing the parts in that position in everyday practice; second, because the field of operation, in the mouth and fauces especially, was better displayed; this largely because the gravity of the soft parts carried the tongue out of the way to a greater degree than in other positions; third, that there was less hemorrhage while the patient was in the upright position; and fourth, that less ether was required after the patient's body had attained the upright position. A new and easy method was demonstrated which had been evolved from that presented to the Association by the writer twelve years ago. With the new method the patient was anesthetized upon, and strapped to, a table, and after the stage of excitement had passed the table top was converted into a chair, and by wheel action the body was brought to the sitting posture. The back of the chair could be lengthened or shortened to fit the back of each patient and also to adjust the head in the headrest for the proper administration of the anesthetic and the desired display of the field of operation. If the surgeon wished to operate while standing the chair part of the mechanism could be raised. If, however, the surgeon desired to operate while sitting, the chair could be lowered

to the required level. If trouble arose in respiration the chair could be quickly converted into a table top in the Trendelenburg position.

Malignant Disease of the Upper Air Passages, with Notes Upon Two Cases of Epithelioma.—Dr. J. Price-Brown of Toronto presented this report with reference to ten cases of malignant diseases occurring in the nose, nasopharynx, oropharynx, and larynx. Seven of them were sarcoma of the nose; one was sarcoma of the larynx; one, epithelioma of the larynx; and one, epithelioma of the inner ala of the nose. These cases had all been treated by internal methods, chiefly by the oft repeated use of the electrocautery, in which on each occasion the parts being anesthetized by the free use of cocaine and adrenalin, as much of the malignant growth was destroyed as possible. In these cases, after cure seemed to be obtained, the patients were all kept under observation for a prolonged period of time; and whenever there was recurrence of the malignant growth it was at once attacked again in like manner, the new vegetations being destroyed. The results were eminently satisfactory, only one of the seven cases of sarcoma of the nose ending fatally. In the case of sarcoma of the larynx the fight between the growth and the cautery was still going on, after a fifteen months' siege; the aid of radium being added latterly. The prognosis was doubtful. In the case of epithelioma of the pharynx, six months after the first operation the man was still living although the end was hopeless. In the case of epithelioma of the inner side of the ala of the nose, the author was hopeful of an excellent result from the combined use of the electrocautery and radium; although the case was too recent to arrive at any positive conclusion at this time.

Report of a Case of Bronchoscopy for Multiple Foreign Bodies (Almond Shell and Pulp) in a Child Two Years of Age.—Dr. John R. Winslow of Baltimore cited the following case: Iona B., aet. 2, was playing upon the floor when her mother's attention was attracted by her crying, and she noticed that the child was blue in the face and breathing badly. She immediately held the child up by the feet, slapped her back, and running her finger down the throat removed a large amount of almond shell and pulp; this resulted in greatly improved respiration and the mother supposed that the nut had all been removed. Since this time, however, the child had at times exhibited embarrassed respiration and occasionally cyanosis. Examination showed the respiratory movements much shallower on the left side and the respiratory sounds lost below the second rib; no râles present. Temperature 98°, pulse 118, respirations 28. The patient was admitted to the University Hospital and examined with Jackson's direct speculum under cocaine; by this means it was demonstrated that nothing was present in the larynx, and that the smallest bronchoscope then available (7mm.) would not pass through the subglottic space. Tracheotomy, followed immediately by lower bronchoscopy with a 7 mm. Jackson tube, was carried out on the following day. In this way a considerable amount of milky pulp was removed from the left lower lobe bronchus; the upper lobe bronchus could not be entered. No shell was found. Owing to the patient's bad condition further examination had to be discontinued after about thirty minutes. From the following day the patient developed a broncho-pneumonia lasting eight days. On the thirteenth day the patient was discharged from the hospital in an enfeebled but otherwise normal condition, and returned to her home and the care of her physician, Dr. F. G. Wright. She remained in good condition for about a month, and then, in consequence of an epidemic influenza, again developed pneumonia. Following this the wound opened spontaneously and she coughed up an oval piece of almond kernel about 6 x 3 mm. She then slowly but fully recovered. The essayist called attention to the difficulties of bronchoscopy in very young children, owing to the small size of the respiratory passages, the difficulties of instrumental manipulation, and the nature of the objects usually encountered. He discussed the best methods of procedure in such cases. While admitting the obvious advantages of upper bronchoscopy (without tracheotomy) he noted its disadvantages. A study of cases reported showed that while upper bronchoscopy had been attempted many times for the removal of foreign bodies in infants, in a large percentage, if not the majority of them, tracheotomy had become ultimately necessary for successful removal. Reference was made to a recent article by G. Killian in which he called attention to the frequency with which tracheotomy or intubation became necessary after upper bronchoscopy, even when successful. This he attributed to an edema of the subglottic space caused by traumatism. In some of the cases recorded he showed that the bronchoscopic tube used was too large for the subglottic space. Under these circumstances, while admitting that the selection of method must be individual in every case, the author concluded that in the majority of cases in young children, lower bronchoscopy was preferable to upper, in that it was easier, surer, and safer. In support of this view he cited numerous authorities.

Traumatic Paralysis of the Right Recurrent Laryngeal Nerve.—Dr. Bryson Delavan of New York City reported two cases, the following being the history of one of them: Elizabeth X, aged 23; otherwise healthy with no relevant history; speaks in a hoarse tone of voice of peculiar quality; this is worse in bad weather, when she is fatigued or when she has a cold. States that when 12 years old and fairly well grown she tripped in crossing a railway track and fell, striking her throat upon the inner edge of the opposite rail. The fall was hard and the shock severe. Upon striking the rail she uttered a loud cry, but upon attempting to speak immediately thereafter found that she had lost her voice. She was treated at various times and places, but principally at the Massachusetts General Hospital. Applications were made to her throat and the use of electricity was employed for a considerable length of time. No good results followed any attempts at relieving her. Eleven years after the accident she was examined by the writer. She appeared normally developed, well nourished and healthy. She occupied the position of waitress in a summer hotel, and filled her place satisfactorily in every respect. Laryngoscopic examination showed the right side of the larynx fixed, with the vocal band drawn a little to one side of the median line. The anteroposterior length of the right vocal band was distinctly shortened to the extent of one-third. Fixation was absolute. The cord was slightly hyperemic and the whole of that side of the larynx appeared contracted. The left side of the larynx was in every respect normal, both as to appearance and physiological function. It appeared evident that at the time of the injury to the larynx the right recurrent laryngeal nerve had been completely paralyzed. The prognosis in this case as to recovery was absolutely bad. There was no reason, however, why the patient should not enter upon any of the ordinary avocations of life with success; the great point being to avoid all sources of irritation to the larynx, and in case of the occurrence of a laryngitis of the simplest type, to resort to proper measures for its relief at the earliest possible moment, as there had been occasions during the existence of catarrhal states of the throat when slight dyspnea had been present. The patient was advised of the importance of avoiding laryngitis, and it was suggested to her that she report back to the Massachusetts General Hospital for periodical examinations of her throat at intervals of not more than a year in order that the history of the case might be kept in mind and that she herself might be under the supervision of some competent specialist. With a little care in the above particulars there was no apparent reason why this patient should not live out the full term of a useful existence.

The Question of Postoperative Nasal Packing in the Light of Additional Experience with the Author's Rubber Tampon.—Dr. W. E. Casselberry of Chicago called attention to the fact that a posterior pack of some sort must at times be inserted in order to control a dangerous degree of post-operative hemorrhage, especially that liable to ensue some hours after the severing of a principal branch of the postnasal artery, as in turbinectomy and the sphenoethmoid operation. As these were the operations and this the pathway, for the intranasal surgical drainage of the sphenopostethmoid group of accessory sinuses, the severing in trunk or branch of this particular artery now so often confronted us that a satisfactory safeguard against subsequent hemorrhage had a very practical bearing on the extent to which this much needed surgical treatment was likely to be utilized. The fact that plugging the posterior naris would succeed in stopping such a hemorrhage even though a well placed anterior pack had failed, was due to the ring-like conformation of the choana against the bony edge of which the trunk of the postnasal artery, as it emerged from the sphenopalatine foramen, together with its principal branches, was necessarily compressed by any plug which got snugly into the choana or was held against it by forward traction. A preventive tampon therefore, competent to prevent hemorrhage at this site, must possess a postnasal feature, an advantage imparted to the new combination nasal and postnasal aseptic rubber tampon shown in 1909, by a bulbous expansion of its distal end which had not once failed to fulfill its purpose, having been utilized by the author as a primary dressing at

the close of all operations reputed to be liable to secondary hemorrhage, numbering some 175 private cases, and having enabled him, without fear of hemorrhage, to extend the benefit of nasal surgery to many more persons in need of it than would have accepted an exclusively hospital procedure. He stated that the antipathy to nasal packing in general and the advice of authors against postoperative nasal packing in particular, were based upon the old-time necessarily septic tampon of uncovered gauze which, it was agreed, should be quite abandoned; but he insisted that these negative views were inapplicable to the non-absorbent smooth surfaced aseptic rubber tampon, for in not a single instance of his series which embraced many cases of sphenoethmoid and other sinus suppurations, did it induce or contribute to infection of the ear, meninges, sinuses, or any septic condition; and if its general use as a preventive of hemorrhage were not restricted by prejudice it would be instrumental in multiplying the beneficiaries of nasal surgery. In all cases the tampon has been withdrawn in from 15 to 18 hours and in not over 5 per cent. had it been necessary to reinsert it for another period of equal brevity. In order to obviate the only uncertain element the author had recently added an anchoring cord, within the rubber, to the postnasal bulb, by which any shifting of it away from the vessels to be compressed in the choana might be prevented. A single strong black silk thread was tied to the first few inches of gauze, enfolded into a small knot, just as it emerged from the distal end of the packer, before the rubber was slipped over it. The string therefore during the insertion of the tampon led forward along the outside of the packer, but inside of the rubber case, being held taut till completion of the gauze packing by the same hand that held the packer, when by gently pulling the string and affixing it to the front end of the pack by a few turns around a fold of gauze or cotton, the postnasal bulb was drawn snugly into the choana and held against its ring-like bony edge in the same manner and with equal efficiency as an ordinary postnasal plug, but with the advantage that both gauze and string were incased in rubber.

The Anatomy of Deflections of the Nasal Septum.—Dr. Otto T. Freer of Chicago gave an account of the anatomy of the deflected septum as revealed to him by his submucous resections by the open method. It was his opinion that the anatomical conditions alone showed the way to correct deflections and that these conditions proved that crude preconceptions as to their nature led to some of the imperfect and harmful operative methods now in use. He divided deflections in the customary way into traumatic ones and those from growth. The latter were by far the commonest and their chief form was the crista lateralis or ascending crest deflection, or horizontal angle of deflection, as he called it, which followed the anterior border of the vomer upward and backward, creating the well-known crest or ledge so often sawed away. These deflections were due to vertical growth pressure upon the septum, which grew too fast for its frame, and so had to bend out of the median plane. While the pressure created a bending out of the vomer, perpendicular plate, and cartilage to form a horizontal angle of deflection, it also caused the cartilage to override the vomer, not in the form of a dislocation of the cartilage from its vomeral groove, as had been supposed, but by the cartilage, in its downward travel, carrying its entire articulation with the vomer with it so that the bony face of the articulation instead of looking upward, as it normally did, was found upon the side of the vomer slanting into the naris of the convexity. The ledge or crest found in these deflections in the naris of the convexity was that flange of the vomeral groove which in this displacement came lowermost and which coincided with the downward displaced posterior inferior border of the septal cartilage, hypertrophied into the usual cartilaginous crest. Back of the cartilage the vomer and perpendicular plate joined to form a bony V or angle, which permitted the cartilaginous strip in its articulation to escape upon the convex side of the angle, forming there a continuation of the cartilaginous crest backward. In less frequent, but still common, cases, the vomerocartilaginous articulation instead of tilting into the naris of the convexity, slanted into that of the concavity, so that the cartilage, in order to follow it, bent horizontally upon itself. In these cases the operator encountered rising from the nasal floor a high, bony, vomeral wall right under the mucosa periosteum in the naris of the convexity, and on the other side of the wall found the cartilage descending into the naris of the concavity while in the common type of crest deflection he came first upon cartilage. The deflections of the anterior inferior free portion of the septal cartilage and their influence in producing a slit-shaped nostril were also described. Rounded vertical angles in the cartilage were attributed to horizontal growth pressure between the sphenoid body and nasal bones. The combination of such a vertical angle with a crest deflection make a double-angled deflection. A horizontally sigmoid deflection resulted when the concavities of these two deflections alternated. Surgically important was the crossing of the periosteum and perichondrium in the crest deflection across the septum from naris to naris in the vomerocartilaginous articulation. Traumatic deflections were usually purely cartilaginous and in their commonest form created a vertical, sharp-angled deflection far forward in the naris, often in the nasal vestibule. The fragments of the old fracture were usually found ununited, so that each was contained in its own perichondrial envelope and a fibrous bridge joined the mucous coverings of both nares through the fissure between the fragments. In numerous instances the fragments overlapped, and in these cases the angle of deflection was replaced by a greater thickening of the septum, especially in growing persons, where the fragments continued to grow past each other. Because of these complicated fibrous envelopes, which interrupted the denudation of the cartilage in the submucous resection, perforations in traumatic deflections was common unless keen dissection supplanted the attempt to detach the coverings with a blunt elevator.

The Middle Turbinated Body: Some Indications for Its Removal.—Dr. W. Scott Renner of Buffalo stated that enlargement of the middle turbinated bone might be responsible for a definite train of symptoms where no other systemic cause for their development could be ascertained. In 300 such cases treated during the past six years, frontal headache and eyestrain occurred most frequently; paroxysmal sneezing next; and third in order, cases of acute frontal sinus and ethmoid trouble. Other symptoms were: reflex cough; at times asthma; vertigo; and twitching and spasm of the ocular muscles. The removal of the middle turbinated bone was indicated for the relief of these symptoms and for the proper ventilation and drainage of the nasal accessory sinuses. Attention was invited to the fact that this did not refer to cases of chronic sinusitis and nasal polypi in which the enlarged turbinate required removal as a part of more radical operations. Deflections of the upper portion of the nasal septum might require correction before or after the removal of the middle turbinated body.

Vincent's Angina: Its Frequency and the Importance of Its Diagnosis. With Reports of Two Fatal Cases.—Dr. Thomas H. Halsted of Syracuse stated that Vincent's angina was the manifestation in the throat and upper respiratory tract of the infective activity of the fusiform bacillus associated with spirochetes and spirilla, these latter being probably but evolutionary forms of the former. These same organisms produced disease in all parts of the body, a pseudomembrane being produced on mucous membranes, and abscesses in the deeper parts. Hospital gangrene and noma were due to these organisms, while many cases of phagedenic ulcer of the penis and genitalia and abscesses of the lung and spleen had been reported, and recently a case of appendicitis followed by general pyemia with multiple abscesses in all parts of the body, due to the fusiform bacillus, had been reported by Tunicliffe. Many cases of bronchitis, laryngitis, bronchopneumonia, the false membrane being the local lesion; a few cases of mastoiditis, the fusiform bacillus being the pathogenic organism in all of them, were found in the recent literature. Vincent's angina, strictly speaking, was the disease as seen in the mouth, fauces, pharynx, and larynx. There were two distinct clinical types—one resembling diphtheria so closely that the best observers were likely to err in diagnosis, while the other type simulated so nearly the throat lesions of syphilis, the mucous patch, the tertiary ulcer, and even the initial sore, that unless one were careful he would be likely to mistake an ulcer of Vincent's angina for a syphilitic ulcer. A positive diagnosis was easily made by bacteriological examination of a smear taken from a gentle curettage, or a swab, preferably the former, of the under surface of the pseudomembrane, or of the ulcerated surface itself. It might not be found if the smear was from the outer surface of the pseudomembrane. The organisms, which were anaerobic, did not grow on the ordinary culture media, and hence were always overlooked by the bacteriologist in examining cultures for diphtheria, which accounted for the supposed infrequency of the disease. The disease was altogether more frequent than had been suspected. Statistics were given to prove this statement. It was probable that 20 to 25 per cent. of cases, diagnosed clinically as diphtheria and reported by the bacteriologist

as being simply negative, were Vincent's angina, but were not discovered by the bacteriologist as he examined only the culture and not the smear. The writer found that of the last 2500 cases of ear, nose, and throat disease seen in his private practice, 20, or 1 in 125 were Vincent's angina. The writer reported two fatal cases. In one case the disease occurred in a woman eight months pregnant. The membrane, resembling that of diphtheria, was most profuse and was present not only in the mouth and throat, but also in the vagina. It persisted for two months in the mouth and throat despite treatment. A very foul, fetid odor, peculiar saffron color to the skin, great pain in swallowing interfering with nourishment and sleep, low temperature and profound toxemia with great prostration were the prominent symptoms. The patient died suddenly at the onset of labor. The second case occurred in a young woman, the pseudomembrane covering the aveolar borders and the buccal mucous membranes, causing such great pain that she could not swallow, refused all food and practically starved. A most profound toxemia and secondary anemia developed, the patient finally succumbing to the disease. The writer derived most satisfaction in the treatment of the mild cases by the use of trichloracetic acid to the ulcerating surface, orthoform relieving the pain, while in many improvement followed only after the diseased teeth and gums were cared for. Tincture of iodine was useful in many cases. General tonic treatment was always necessary. In the severe cases resembling diphtheria clinically, local treatment was unsatisfactory. No specific treatment had yet been evolved, but it was hoped that an antitoxin or vaccine might be developed, or possibly that salvarsan might prove effective against this spirochete as well as against that of syphilis.

Complications of Tonsillectomy.—Dr. CHARLES W. RICHARDSON of Washington, D. C., referred in this paper to the fact that the complications of tonsillectomy had not been reported as they should have been, and this accounted, no doubt, for the small number of cases reported in the literature at the present time. He divided the complications into their various classifications. Hemorrhage predominated in the frequency of reported complications. Fifty cases of serious hemorrhage were reported, with nineteen deaths. Two interesting cases of hyperpyrexia were recited—one in the practice of Dr. Wishart and the other in Dr. Richardson's practice. Infarct of the lung was reported, but, because the cases were reported verbally and did not appear in the literature, no use of them was made. General sepsis of a mild type was of frequent occurrence; it was not infrequent in severe form. Several interesting cases of profound sepsis were narrated. The other subjects treated of in the paper were emphysema, infection of the lungs and serous membranes, disturbances in relation to the nervous system, and status lymphaticus. Under the last named Dr. Richardson reported two interesting cases by Drs. Packard and Harris. Under other sections were treated amygdalotomy, rash, diphtheria, and local disturbances as sequelæ of tonsillar operations. Other interesting accounts were given of injuries and reference was made to the rather severe arraignment by Dr. G. Hudson Makuen of injury to the pillars and to the soft palate. Small space was given to the consideration of infection of the ears and cervical glands. In the unclassified list were grouped a number of complications referring particularly to Crockett's statement of twelve deaths having occurred in the suburbs of Boston in the last year and a half. The conclusions of the paper were as follows: "If anything can be gleaned from the reports which I have enumerated above it would seem to be that tonsillectomy may be at times attended by most serious, even fatal, complications. It behooves us, therefore, to be most careful in our technique and most cautious in our postoperative attention to our patients. Tonsillectomy, therefore, should be considered a major operation and the patient should be prepared and surrounded with all the post-operative attention as in any major operation. With such knowledge, is it proper and wise to suggest this operation, as is so often done by the internist, with insufficient and inaccurate data from a local standpoint, as a prophylactic measure? I believe that this point of view, as an overwhelming demand for the removal of the tonsils, is too often presented to the reluctant patient. I believe that a few general conditions probably have their portal of entry into the general system through the tonsils, but I would demand that, in every individual case, the tonsil be first proved to be guilty before it is sacrificed. One must hold steadfastly in mind the fact when suggesting such a procedure under such conditions that we by this operation are placing the patient in danger of his life—probably a greater danger to his life than the probable remote infection."

Dr. WISHART of Toronto said that he had heard of no other case excepting that now reported by the author at all like the one reported by him and referred to in this paper. He believed that hemorrhage was not abundant in cases of tonsillectomy unless there was a tearing of considerable muscle around the tonsil; that when one stuck closely to the capsule he got very little hemorrhage. He thoroughly endorsed the view that tonsillectomy was a major and not a minor operation and said that the time had come when this should be definitely established.

Dr. BECK of Chicago called attention to the operation he was using at present and which was followed by absolutely no hemorrhage. It was the method employed by Dr. Sluder of lifting out the tonsil and then snaring it off slowly; with this neither traumatism nor hemorrhage follow, for there was no possibility of including the pillars, the uvula, or anything except the tonsil itself. He mentioned a case of abscess of the lung which was considered to be due to enucleation of the tonsil. The speaker then referred to a case of amygdalar scarlatiform rash admitted to the Cook County Hospital for scarlet fever; the patient became infected with diphtheria and required tracheotomy, and it was later discovered that it had not been scarlet fever at all, but that the rash was that sometimes seen following tonsillectomy. He considered that the general practitioner should be made familiar with this condition, and possibly thereby obviate the possibility of his patients becoming infected with a contagious disease in the isolation hospitals.

Dr. BRYAN of Washington, D. C., spoke very strongly on the subject of this paper, stating that it was his opinion that the public should be educated to regard the operation of tonsillectomy not as a trivial matter but as one of equal seriousness with other major operations, and he considered this but rational, in view of the many complications following its performance, many of which were most serious. Furthermore he contended that only a qualified and properly equipped operator should perform this operation and that it should by no means be entrusted to the hands of a tyro.

Dr. FREER of Chicago gave as his opinion that the tearing out of the tonsil by blunt instruments or blunt force was responsible for much of the hemorrhage and sepsis following tonsillectomy, and that he most heartily indorsed the use of a sharp knife for excision of the tonsil, believing that this glandular tissue should be treated in the same way that a surgeon would treat a bubo of the groin. Following the performance of the operation by this method he had had absolute satisfaction in hundreds of cases, without alarming hemorrhage, sepsis or undue reaction.

Dr. DELAVAN of New York City called attention to the acknowledgment on the part of a pediatrist in his city that he had operated in 800 cases for removal of the tonsil and that he always excised a swollen tonsil in a child. Dr. Delavan condemned this practice absolutely, first with regard to the person operating because he was not a regularly experienced throat man and therefore not properly equipped for all emergencies, and second with regard to the attitude of always removing a swollen tonsil in a child, which showed that the practitioner in question was not familiar with the function of this organ nor aware of the seriousness at times of removing it, especially when the throat was in a septic condition.

Dr. CASSELBERRY of Chicago agreed with the last speaker in that few general practitioners or pediatrists were properly equipped with means of controlling hemorrhage to be considered qualified to perform the operation of tonsillectomy. He acknowledged that in most exceptional cases, such as the case of a hemophilic child or when the ascending pharyngeal artery was severed, due to an anomalous position of this vessel, it might be impossible even with the best equipment to stop the hemorrhage except by the use of a hemostat. He considered that it was the laryngologist's duty to protect himself against the accidents following tonsillectomy by being always on the lookout for the all too frequent emergencies, and having always at hand instruments and means for the control of unexpected accidents.

Dr. BALLENGER of Chicago considered that the paper by Dr. Richardson presented the condition of affairs in a most alarming way, referable to the technique of former days rather than to the improved and careful technique used at the present time. He did not agree with Dr. Sluder, although commending his method, that severe hemorrhage did not follow it just as surely as it followed other methods. He considered the safest removal of the tonsil was first by partial dissection, and then the use of the snare, although even this method had been followed by hemorrhage. He mentioned a case in which following a tonsillectomy he had the misfortune to have a general septicemia develop which laid the patient up for six

months, although he finally recovered. He could not explain why hemorrhage did occur in the use of the Sluder method, except at the time he used this method he used ether anesthesia, and he had concluded that the hemorrhages which resulted were due to the high blood pressure caused by the anesthetic rather than to the technique of the operation. He indorsed what previous discussors had said in regard to the importance of warning the inexperienced and illy equipped man from undertaking the operation of tonsillectomy.

Dr. Roe or Rochester, N. Y., called attention to the mutilation of the throat resulting from tonsillectomy, and said that he had seen two cases of complete adhesion of the soft palate to the pharynx, the soft palate having been removed instead of the tonsil. He cited one fatal case of a hemophilic patient from whom he removed the tonsils; there was no immediate hemorrhage, but later a continuous oozing took place, which nothing could stop.

Dr. Price-Brown of Toronto sounded a warning against operations on the tonsils in patients suffering from chronic rheumatism, and reported an illustrative case in which following tonsillectomy the patient began to bleed and it required heroic measures to control the hemorrhage, and it was several weeks before the patient rallied from the shock. He considered that the arterial sclerosis existing was the cause of this hemorrhage.

Dr. Winslow of Baltimore related his method of procedure to ward against hemorrhage in cases of tonsillectomy, saying that this was the method adopted throughout the hospital with which he was connected, namely, the ligation of every bleeding vessel and every bleeding piece of muscle at the primary operation, by this means making it possible always to return the patient to bed perfectly dry and with no greater fear of subsequent hemorrhage following a tonsillectomy than following any major abdominal operation. It was his opinion that sepsis seldom occurred unless there had been unnecessary injury to the tissues, and for this reason he advocated the employment of a method requiring the least possible amount of injury to tissues. He stated that he was frequently bothered with a peculiar condition after a tonsillectomy, the patient complaining of a sensation of dryness in the throat for which the operator could not account and which he could not relieve, although this sometimes disappeared in time, while in other cases it persisted.

Dr. Sluder of St. Louis in regard to the method of technique called by his name, called attention to the fact that he had recommended the use of a dull blade and guillotine for this purpose, whereas he was sorry to say that the instrument maker persisted in providing a sharp blade in the instrument on the market sold as pretending to be that recommended by him. He himself did not use that instrument, but a modification of it. He stated that in 300 cases of children varying from 2½ to 15 years he had measured the amount of blood lost by his technique, and the average loss of blood was 70 c.c. after removal of both tonsils and adenoids. At the St. Louis Children's Hospital, where they had about ten children every Friday for tonsil operations, it was routine practice that a blood test be made beforehand to ascertain the time of clotting; the puncture was made at the same point in the lobe of the ear and by the same instrument, and the same means of computing the clot were used, and by these means not only was there made an estimation of the amount of blood which would exude from a like point from the same instrument, but also there was an estimation of the resilience of the vessels of the particular individual. He never accepted a child for operation with a clotting time beyond a minute and a half. He referred to such a case upon which he refused to operate; the child was taken to another laryngologist who promptly removed the tonsils, and the patient almost bled to death. No child was accepted for operation with a temperature of more than 99.2°.

Dr. Wagner of San Francisco reported a case operated on some two years after an attack of diphtheria for the removal of the tonsils. A bacteriological examination was carefully made of the secretions of the throat which were found negative; no examination, however, was made of the secretions of the nose, and following the tonsillectomy the patient developed a diphtheritic sore throat, the infection springing from a little necrosed spot on the middle turbinate which still harbored the diphtheria bacilli. He endorsed Dr. Winslow's method of ligating the vessels and bleeding muscular tissue during tonsillectomy, and said that this was also his practice. He did not believe that the results obtained from estimation of the coagulation time of the blood were always reliable, citing in this connection the case of a boy of 10 in whom the estimated time was satisfactory and yet who bled terrifically after operation, the hemorrhage finally being controlled by the use of diphtheria antitoxin.

Dr. Chenery of Boston recalled a case of a man of 35 operated on in a hospital, who being an alcoholic was kept under observation for some days before being allowed to return home; twelve hours after his return home he began to bleed, a general practitioner was sent for to stop the bleeding, but he simply took a wad of cotton and wiped it round the back of the throat, thus increasing the bleeding; the operator could not be reached and therefore the speaker was called in after several hours and was able after much difficulty to stop the hemorrhage by the application of nitrate of silver to the tonsil. He considered that it was very important to carefully watch patients addicted to the use of alcohol after such operations. He had found the use of rabbit's serum very efficient in the control of hemorrhage.

Dr. Harmon Smith of New York thought that if one considered the vast number of tonsillectomies performed the mortality would be shown to be extremely small; in fact, smaller than that following any other operation performed under ether anesthesia. He said that in the laboratory of the Manhattan Eye, Ear, Nose and Throat Hospital they made a preparation of thrombokinase which was very useful for the stoppage of oozing, although not efficient for overcoming violent hemorrhage. This thrombokinase would be furnished to practitioners upon request.

Dr. Pierce of Chicago related the case of a man who had his tonsils removed without any previous preparation. The patient was a full-blooded man, and during the day had indulged more or less in liquor. In the evening his physician removed the tonsils and the patient bled to death that night. He cited this instance as an example of the serious results from the taking of no precautions, but considered that the operation of tonsillectomy when proper precautions were taken, was practically devoid of danger, in the hands of men skilled and well equipped.

Dr. B. R. Shurly of Detroit recited a case in which previous to operation, in order to make sure of no subsequent hemorrhage, he administered calcium lactate to the patient. The operation was performed by the use of the knife, and the most terrible hemorrhage in his experience resulted.

PRACTITIONERS' SOCIETY OF NEW YORK.

Two Hundred and Forty-eighth Regular Meeting, Held May 3, 1912.

The President, Dr. Brannan, in the Chair.

Syphilis of the Liver.—Dr. Roper showed a patient who had been admitted to New York Hospital on August 5, 1912, with a history of gonorrhea and chancroid infection twenty years before. He had used alcohol to excess up to four years before admission, but none during the last four years. Aside from hemorrhoids, which had been troublesome for two years, he had been well until four weeks before admission, when he noticed that he was slightly jaundiced. On several occasions about this time he felt dizzy on getting up in the morning. One week before admission he had noticed that his abdomen was swollen. Constipation and some abdominal pain had also been present during past month. On admission patient showed an emaciated body, a distended abdomen, and swollen legs. Liver extended from the fifth intercostal space to 3 cm. below costal margin in mammary line; edge was palpable. Spleen was very large, being within 2.6 cm. of umbilicus and extending below to anterior superior spine of iliac bone. He was unable to lie down because of dyspnea. Two weeks after admission a positive Wassermann was obtained. Up to this time improvement had not been satisfactory. Five days later 0.5 gm. salvarsan was given intravenously. After this the patient rested better. There was no effect on ascites, however, so 6,500 c.c. of clear fluid were withdrawn. There was no reaccumulation of fluid and the patient's general condition improved very rapidly. Since discharge he had attended to his usual occupation of truck driving and his health had been very satisfactory for a time. Two Wassermann reactions taken within a few weeks of the salvarsan treatment were anticomplementary. Three days ago patient gave a positive Wassermann, and, while there had been no return of fluid or edema, dyspnea on exertion returned. In the right lobe of the liver a large mass could readily be palpated. This was probably a gumma. Dr. Roper also showed a liver from a similar but more advanced case that had been under observation at New York Hospital for four months before death.

Patient was a German waiter twenty-eight years of age, who had had gonorrhea eight years before, but denied knowledge of luetic infection. He had used alcohol freely as wine, beer, and whiskey. He had been well up to one year before admission, since when loss of weight and weakness had interfered with his work. Jaundice had developed four weeks before admission. Physical examination showed a liver extending from fourth space to 13 cm. below costal margin in nipple line. Left epididymis was hard, swollen, and there were scars over both shins. Tibiæ were roughened. Patient gave a positive Wassermann reaction on September 8, 1912. On September 12 he was given 0.5 gm. salvarsan intravenously. His temperature, which had been rising to 103° daily, remained normal for two weeks after injection. Then it again began to make daily excursions to 103°. After four days of elevated temperature, 0.6 gm. of salvarsan was injected intravenously and the temperature again returned to normal. The Wassermann reaction was strongly positive on September 18 and 30. Potassium iodide had been given up to 150 grains a day. Mercury by hypodermic injection caused prompt salivation and an obstinate stomatitis. The patient's general condition improved so that he was able to go home although still showing edema of extremities and jaundice. Seven weeks later, December 20, 1911, he was readmitted in much the same condition as on first admission. His Wassermann reaction was positive and he was running a slight elevation of temperature. After 0.6 gm. salvarsan, temperature remained normal. Six days later another 0.6 gm. of salvarsan was given. An attempt to renew mercury medication resulted in an aggravation of his stomatitis, which had persisted. Probably from this source on Jan. 14 the patient developed septicemia, *Streptococcus longus* being isolated from the blood. He died four days later. Autopsy showed smooth atrophy of tongue, a deformed epiglottis, a spleen weighing 4 pounds, showing evidence of diffuse syphilis, a left testicle showing interstitial orchitis. The liver weighed 5 pounds and was greatly deformed, numerous depressed scars subdividing the lobes. Just below the attachment of the subdividing ligament the liver was studded with small gummata from 2 to 4 mm. in diameter, embedded in dense scar tissue. A similar condition was present at right anterior margin. Balance of organ showed appearance similar to that encountered in alcoholic cirrhosis. Tissues of liver, kidneys, and spleen were tested for arsenic and mercury. No arsenic was demonstrated (control tests were positive). A trace of mercury was found in kidneys, but none in liver or spleen. The interesting features of the case were the apparent effect of salvarsan on the temperature, the failure to influence the gummata by treatment, and the intolerance for mercury.

Dr. MEARA asked if fever due primarily to syphilis was not uncommon in the tertiary stage. It had been his impression that unless due to a secondary infection fever was not a feature of tertiary syphilis.

Dr. STARR thought that in the tertiary stage an elevation of temperature was very rare. A temperature of 101.5 or 101° was not uncommon.

Dr. GIBSON said that in regard to reducing the size of the liver it had been a common experience to see this happen very readily under the old form of treatment. He had seen great big livers go down within the space of two or three weeks. Of course, some responded more promptly and satisfactorily than others.

Dr. ROPER said that fever did occur in syphilis of the liver, some of the cases of gumma of the liver having been mistaken for abscess because of the swelling, tenderness, and fever. The temperature in the case reported had fallen so promptly on two occasions after giving the salvarsan that it seemed to exclude any coincidence.

Accessory Pancreas in the Gastrointestinal Tract.—Dr. C. L. GIBSON read this paper. (See page 426.)

Absence of Döhle Leucocytic inclusion in a Case of Suspected Scarlet Fever.—Dr. PARK said that about three months ago Döhle had called attention to the presence of small bodies in the polymorphonuclear leucocytes in cases of scarlatina. These bodies were present in every leucocyte in many cases, but in other cases only one leucocyte in three or four would contain them. They were always present during the first four days of the disease. After this they lessened in number, but were sometimes found up to the fifteenth or sixteenth day. They had also been found in one case each of pneumonia, carcinoma, and syphilis, but absent in other cases examined. The work of corroborating these findings has been taken up by Drs. Williams and Nicoll at the Health Department Laboratories. Dr. Park cited a case admitted to Willard Park Hospital as scarlatina with a typical rash but a non-characteristic throat. No bodies were found in the blood of this case. No desquamation ensued and the patient was discharged as "no case." Repeated examples of positive results had been had. He said that in undoubted cases of scarlet fever it was their opinion that the bodies would always be found in well developed cases of scarlet fever. They were not so abundant in the lighter cases. Conditions simulating scarlatina, such as German measles and antitoxin rashes, were uniformly negative. The bodies were present, however, in cases of sepsis. Dr. Park also cited a case of scarlet fever in which, after almost complete disappearance of the bodies, they returned in abundance on the development of a septic complication. The department was now prepared to make this examination regularly for outside physicians. Smears should be made as for malaria examinations.

Dr. MEARA asked what technique was used in staining the bodies.

Dr. PARK answered that borax methylene blue was the stain regularly used, but any of the aniline dyes would do; with the Giemsa stain the bodies are light blue and the nuclei of a reddish hue; with the Pappenheim stain the bodies are reddish while the nuclei are blue. The main point is to have a stain that will not make the granules prominent.

Dr. CONNER asked if the bodies were present in the lymphocytes.

Dr. PARK said that they occurred only in the polynuclears.

Dr. DANA asked what the composition of the bodies was and from where they were derived.

Dr. PARK thought the bodies might be inclusions of portions of broken down cells or the protoplasm might be degenerated and coagulated; they occurred usualy in the periphery. They certainly were not parasites.

Dr. DANA remarked that the bodies probably consisted of proteid matter.

Dr. PARK added that about 100 cases had been examined and in every case that pointed to scarlet fever the bodies were found, and always in the earliest stage of the disease. They occurred in one case in five or six of pneumonia.

General Septicemia Originating in a "Streptococcus Throat."—Dr. GIBSON reported the case of a woman thirty-five years of age who had entered the hospital and died in less than forty-eight hours. She had been taken ill with sore throat one week before; it was stated that she had had one chill and possibly some fever. She had later developed some abdominal tenderness and had vomited. When she came to the hospital she looked extremely ill. There was moderate abdominal distention, some tenderness, but no rigidity. Her entire throat was bright red. She was apathetic when admitted, and later became irrational, delirious, with involuntary evacuations. Her temperature on admission was 101° and pulse 120. The temperature rose to 107° before death, and the pulse increased in rate proportionately. Leucocytes on admission were 19,000, 94 per cent. polynuclear. A second count showed 19,500 with 95 per cent. polynuclear. The admission diagnosis was peritonitis. A blood culture was taken but no throat culture. The blood culture showed a very virulent streptococcus growth within twenty-four hours. The patient died. The autopsy showed a diffuse, plastic peritonitis, but no focus of infection could be found. A culture taken from the uterus was negative, while that from one of the Fallopian tubes showed streptococci. Dr. Gibson wondered if this might not be a case of malignant sore throat such as had occurred in the epidemic in Boston. In some of the Boston cases a diagnosis of peritonitis was made and an operation performed. All of them, he believed, died. Dr. Gibson thought that perhaps we were going to have a similar epidemic here. That was the reason he reported it. The Boston epidemic had been accredited to infection from a certain milk supply, but he believed that this had been exonerated.

Dr. MEARA had been greatly interested to see the various manifestations which might accompany streptococcus sore throat. Last winter, for instance, there had been so much glandular involvement, particularly of the cervical glands, that the pediatricians had been inclined to classify these cases as "glandular fever." This winter there had been very little tonsilar involvement, but an intense inflammatory sore throat not like an angina but more like erysipelas of the mucous membrane. Some cases of sore throat were accompanied or followed by marked sinus involvement. Dr. Meara thought this might be due to reduction of resistance in special tissues. These cases certainly occurred in everybody's experience. He was under the impression that an epidemic like the one in Boston had occurred in Chicago also.

Dr. PARK had been waiting for the epidemic to come to New York. Deerfoot farm had not been absolved, and he thought it was largely responsible for the Boston epi-

demic Baltimore and other places in New England also had had epidemics. The Baltimore people suspected that it had a connection with the milk. At a time when one dealer stopped pasteurizing the cases increased. The cases from Chicago had had prolonged symptoms and a very severe inflammation of the throat. The organism isolated in the Baltimore epidemic was an encapsulated streptococcus.

Dr. CONNER wished to know, if one assumed that the infection occurred through milk, whether the point of entry was the tonsil or was the gastrointestinal tract. He thought that under those circumstances infection was unlikely to occur through the tonsil. If the intestinal tract was the portal of entry it might explain the frequency of peritonitis. If infection did occur through the intestinal tract it would suggest that the tonsillitis might be of hematogenous origin.

Dr. PARK said that there had been about 1,800 cases in Boston, and, while all had tonsillitis, only a few had had peritonitis. Infection through the tonsils was not difficult. In this connection the number of the organisms and their virulence was important. Dr. Park recalled a rabbit infected through the mucous membrane of the nose by a few organisms dropped into it from a very virulent streptococcus culture. Here death occurred from septicemia within twenty-four hours. Infection with bovine tuberculosis had occurred frequently by way of the tonsils, and other organisms, if virulent and present in numbers, might readily find entrance here.

Dr. GIBSON said a great many cases were operated upon for peritonitis, especially in the early part of the Boston epidemic.

Dr. BRANNAN said that Dr. Jacobi had always spoken of streptococcus sore throat as contagious or infectious, and wondered if that might not have been the same thing.

Dr. PRUDDEN said that the frequent insistence by Dr. Jacobi in the early days of bacteriology to which Dr. Brannan alluded, upon the differentiation of streptococcus sore throat, marked the period in which some forms of pseudo-membranous pharyngitis and laryngitis had just become clearly distinguished from diphtheritic inflammation by the absence of the diphtheria bacillus and the demonstration of streptococci. While this distinction was now generally recognized, it required a good deal of missionary work, both in and out of the laboratories, to delimit the time-honored, though somewhat hazy, conception of a condition then called croup, and to establish the conviction that the clearest essential in true diphtheria lay in the bacillus and its poisons.

Dr. CONNER said that one saw every winter in adults pseudo-membranous throats which were due to streptococcus. The constitutional disturbance was not the same as that of ordinary tonsillitis.

Hypernephroma Associated with Tuberculosis of the Kidney.—Dr. GIBSON presented a specimen from a male patient who had been a hospital inmate for some time because of chronic tuberculosis. He had improved for a time, but recently developed pain in the side, with frequent urination and pus and blood in the urine. On ureteral catheterization there was pus coming from one side. This specimen contained tubercle bacilli. The other side was negative. This kidney was removed and a section showed, microscopically, hypernephroma. The kidney also presented the appearance of tuberculosis. There seemed to be no question as to finding tubercle bacilli in the urine at the time. The patient had improved since the operation. A nodule in the skin of this patient had been reported microscopically as fibrosarcoma. A hypernephroma is a malignant tumor of the kidney developing from either the suprarenal capsule or from some aberrant portion of it.

Dr. DANA said that he had recently seen a hypernephroma in the brain cortex, producing local epileptiform convulsions. It was secondary to a kidney tumor.

Dr. MEARA asked how frequently hemorrhage had occurred in cases of hypernephromata not associated with tuberculosis.

Dr. GIBSON answered that it depended upon the extent and also upon the situation of the tumor.

Dr. PRUDDEN said they were occasionally found at autopsy, having given no symptoms at all.

Dr. GIBSON thought that they were quite chronic, the patient living several years without metastases. They attained a good size, all of twice the size of the original kidney. Middle life was the most common period for their occurrence; cases in children seemed to be more acute and ran a shorter course. He thought that all was not known about hypernephroma.

Dr. BIGGS reported an interesting case of hypernephroma which recently had been under his observation. The patient was a young woman who had very marked and severe digestive symptoms continuing over a long period and not relieved by simple measures. Examination of the abdomen showed a rather large, very movable, kidney on the left side. The right kidney, which was the one ordinarily movable, seemed to be of normal size and in normal position. After other means for relief of the symptoms had been unsuccessfully tried it was decided to fasten the kidney in position. At the operation a hypernephroma at the lower pole of the left kidney was found and it was this which had apparently dragged the kidney from its normal position. The size of the growth was about two-thirds of the size of the kidney. The organ and tumor were removed together. The patient did badly after the operation, had great abdominal distention and could not be relieved by any restriction or modification of diet and had also very rapid and feeble heart action. She developed a low grade of infection in the wound at the end of a week and finally died. At the autopsy, an old myocarditis was found with an extremely thin wall in the left ventricle. There was nothing in the history of the patient, who was only twenty-five years of age, to explain the existence of the myocardial disease. A curious feature of the case was the fact that the father and a younger brother both gave a history of disease of the myocardium and the father has since died from this cause.

Dr. GIBSON thought that a certain distortion of the pelvis gave a picture that was very suggestive of hypernephroma. He also thought that it was quite characteristic. The technique consisted of injecting the pelvis with some substance and getting an *x*-ray picture of the outline. He said that tuberculosis in combination with hypernephroma or other conditions was uncommon.

A Case of Tumor of the Spinal Cord.—Dr. STARR reported this case. The patient was a boy nineteen years of age. Two weeks before he had gone to him with a rather interesting history. He had suffered for two years from a considerable degree of pain and anesthesia under the right shoulder blade, along the neck, and on the under surface of right arm. This was increased on motion and by walking. Eight weeks before he began to notice that his right leg was weak and stiff. The next day his left foot and toes and leg were anesthetic up to the knee. The stiffness and rigidity of the right leg had advanced. He had weakness in the right leg and the anesthesia in both legs had extended up to the abdomen, somewhat higher on the left side. The rigidity and stiffness of the right leg increased; bladder and rectum were all right. There was no girdle sensation. The persistent pain under the right arm suggested localization of trouble to first dorsal segment. The probability was that the boy had a tumor of the spinal cord. The question of localization of the tumor was very interesting. The operation showed a small tumor at the first dorsal segment of the spinal cord. The fifth, sixth, and seventh cervical and first dorsal spines were taken off. Under the sixth cervical was found a small tumor. It was divided into two parts, one intradural was not attached to the cord but was pressing on the spinal cord; when they attempted to detach it it appeared that it was firmly attached to the dura and extended outside and downward pearshaped. It terminated in the nerve. It was necessary to divide the first dorsal nerve in order to remove the tumor. The boy had improved very much, had no pain and could move his legs and had almost normal sensation. He had anesthesia on the outside of his little finger from defect of nerve (eighth cervical). An operation must be done early in order to prevent secondary degeneration of cord from pressure. Dr. Starr thought the position of pain in the spine and periphery very important as a means of localization. He thought the tumor was probably a fibroma.

Dr. EWING thought that the thing most interesting was the diagnosis. The origin and nature were not available as no section had been made.

Dr. STARR said that the tumor was perfectly encapsulated, hard and most probably a fibroma. He said that it would be examined

Dr. CONNER asked if there were no disturbances of skin sensibility in the area of pain.

Dr. DANA said that Dr. Starr's case illustrated the fact that the surgery of the spinal cord was very much more satisfactory in its results just now than surgery of the brain. He had recently seen two cases successfully operated upon at the New York Neurological Institute. Tumors of the cervical and cervicodorsal region were especially frequent in his experience. His experience had been that these tumors had been mostly sarcomata or fibromata. Surgery of the spinal cord had shown great advancement. Extramedullary tumors could frequently be very successfully operated on. Some intramedullary tumors have also been made available for operation by the Elsberg method, the operation being

done in two stages. One exposed the tumor in the first stage and in the other after ten days the tumor was easily removed. The cord itself seemed to squeeze the tumor out in the course of a few days.

Salvarsan in the Treatment of Chorea.—Dr. DANA reported a case of Sydenham's chorea of serious type which was promptly relieved by salvarsan. The patient was a young woman about eighteen years of age. She was brought to Bellevue Hospital with typical and violent clonic movements involving all the muscles. She was unable to walk or use her arms and her speech was unintelligible. She had no fever, her mind was clear, so that it was not a case of chorea insaniens, but only a serious choreic infection of the Sydenham type. She was given the ordinary treatment of isolation, arsenic, packs, etc., with some improvement. She was after a week still very violent and agitated, and could not control or feed herself. She was then given an injection of a half dose of salvarsan and at the end of twenty-four hours was very much better, she could feed herself, talk distinctly, and use her arms and went on to rapid convalescence. There had been no fever or endocarditis at any time, but this was not unusual in chorea. There was nothing in the blood, and he thought the Wassermann reaction was negative. Salvarsan was given because of the arsenic despite some reports that it was not arsenical in nature. Perhaps the overwhelming influence of arsenic would have the same effect. He had seen arsenical rashes after 606 and thought this drug must be arsenical in its action.

Dr. MEARA said that he had seen the patient and had been impressed by the apparently beneficial action of the salvarsan. The patient herself refused to go home when her friends came for her as she felt so much improved that she wanted to stay for further treatment.

Dr. CONNER spoke in regard to another case in which different therapy had been used with the same results. The patient, a girl in New York Hospital, had had the same symptoms as the case which Dr. Dana described She ran considerable temperature and her choreic movements were so violent as to interfere with sleep. Under arsenic, packs, etc., she improved and finally got up but still had twitching. Relapsed twice with same symptoms and very violent movements. The patient seemed of a type amenable to suggestion and hypnotism was tried with very striking benefit. The patient slept well, the choreic movements rapidly subsided and she made a complete recovery. It may have been a coincidence but it was very striking.

Dr. STARR asked if Dr. Dana had used sodium cacochulate by hyperdermic injection in chorea.

Dr. DANA stated that these cases generally got well under any plan of treatment but that he thought salvarsan had had an influence. He did not think that hypnotism would generally be of use in the early stages of chorea though certain results might be obtained with it. He thought that hypnotism should be used occasionally in chorea as well as in other conditions. He told of a case, a man about 35 years old, who was a dipsomaniac. The patient drank a great deal and would often have to lay off for weeks. Dr. Frink treated him by means of hypnotism. For two weeks he kept the man under hypnotic control and free from alcohol, which was better than any one had done previously. Now after a year of treatment the man said he could take one or two drinks and quit, when before he could not.

Antiseptic Power of Soap.—M. Pilod states that it is unnecessary to sterilize soap before use by means of heat, and that it suffices to wash off the surface of the cake of soap before use in order to dislodge mechanically the spores that may have accumulated there. For surgical antisepsis the bactericidal powers of soap cannot be relied upon, the scrubbing of the hands or operative field with soap for twenty minutes being insufficient for this purpose. All that this process can accomplish is the preparation of the skin, by saponifying the fats, for the action of more efficient antiseptics.—*La Presse Médicale.*

The Contents of the Vaccination Pustule.—J. Rosenfeld states that about the sixth day the vaccination papilla only rarely contains cellular elements; its contents are clear, pearly, and translucent. With the appearance and increase of leucocytes in the contents there occurs a coincident yellowing of the epidermis at the periphery of the papilla, whose color at this period is determined by the covering and not by the contents of the papilla. If the latter is secondarily infected its color departs from the normal and varies from a dirty gray to a pronounced yellow.—*Zeitschrift für Kinderheilkunde.*

Medicolegal Notes.

Presumption of Patients' Consent to Operation—Nurse's Opinion of Physician's Skill Inadmissible as Evidence.—Action was brought against a physician and surgeon for damages alleged to have been sustained by the negligent treatment of the plaintiff's foot. The foot was injured by stepping upon a sewing needle, the point of which was supposed to have remained within the ball of the foot. An incision was made, but the needle point was not found. The foot became infected. Two other incisions were made in the effort to cure the blood poisoning. These were unsuccessful, and, after other physicians were called, it was found necessary to amputate the great toe. The chief contention in the case arose over the question of the unskillful use, or want of use, of proper antiseptics. One witness, a nurse, was permitted to testify that from a conversation she had previously had with the defendant, which she detailed, she did not think his standard of "technique" was equal to the standard of other physicians in the locality. Such a comparison was held to be objectionable and erroneously admitted as evidence, over the defendant's objection; but in view of the court's instructions to the jury and the testimony of physicians as to the defendant's reputation and standing as an educated and competent physician and surgeon, the error was held to be without prejudice.

The plaintiff asked and the court gave an instruction to the effect that the defendant had no right to make any other or different incision in the plaintiff's foot than he had obtained permission or the plaintiff had requested him to make. The defendant asked and the court gave an instruction that "consent to an operation will be presumed from voluntary submission to it, and the burden is on the plaintiff to prove the contrary." It was held that the two instructions, when taken together, correctly state the law.—Mosslander v. Armstrong, Nebraska Supreme Court, 134 N. W. 922.

Expert Evidence as to Automatic Muscular Action.—In an action by a workman for injuries caused by his fingers being caught between the die and the punch of a stamping machine he was operating, it was contended that the master was negligent in not warning the inexperienced plaintiff of the danger from the automatic action of his foot upon the treadle of the machine, as the result of a habit formed by the continuous and repeated operation of hands and foot in the same order. It was held that the evidence of physicians who had made a special study of the brain and nervous system, in answer to hypothetical questions, that, in their opinion, the continuous operation of the machine in the manner required would be likely to produce an involuntary sequence of muscular activities which would become automatic, and proceed without express brain action or will power, was fairly within the field of expert evidence, and admissible.—Kaczmarek v. Geuder, Paeschke & Frey Co., Wisconsin Supreme Court, 134 N. W. 348.

Expert Evidence—Subjective and Objective Symptoms—Basis of Opinion on Proved Facts.—The rule is well settled that where a physician has been called to professionally treat a party to an action he may give his opinion, based upon subjective as well as objective symptoms. But where he has been called, not for the purpose of treating the party for the ailment, but for the purpose of giving testimony in the case, he can only testify to objective symptoms. Statements made by the plaintiff at such examination are mere self-serving declarations, not made upon oath. Evidence, therefore, consisting of the opinion of such physician based upon what the plaintiff told him at the time of the examination relative to his previous history and how the injury occurred is not admissible.

In an action for personal injuries the plaintiff testified that on the evening of the injury he noticed that his abdomen was a little bit puffed up, but that it did not swell up enough to make much difference in his size until about the fifth or sixth day after the injury. Nothing in the testimony indicated that within 24 hours after the accident the abdomen was in a badly swollen condition. A hypothetical question, however, was put to an expert medical witness, assuming that immediately after the accident, severe and intense pains were present in the plaintiff's abdomen, in the region of the liver; that the abdomen began to swell so that within 24 hours it was in a badly swollen condition, and within about two weeks from the injury it became hardened and continued in that condition. It was held that the question was improper, under the rule that a hypothetical question should not embrace facts not in the evidence.—Union Pac. R. Co. v. McNucan, Circuit Court of Appeals, 104 Fed., 393.

Books Received.

The MEDICAL RECORD *is pleased to receive all new publications which may be sent to it, and an acknowledgment will promptly be made of their receipt under this heading, but it must be with the distinct understanding that it is under no obligation to notice or review any publication received by it which in the judgment of its editor will not be of interest to its readers.*

POLYZYTHÄMIE UND PLETHORA. By HANS HIRSCHFELD. 54 pages; illustrated; paper; Vol. IV, No. 2; price $1.50 M. Carl Marhold, Publisher, Halle.

TUBERKULOSE-ARBEITEN AUS DEM KAISERLICHEN GESUNDHEITSAMTE. No. 13. Edited by Dr. HAMEL. 124 pages; paper. Julius Springer, Publisher, Berlin.

DIAGNOSE DER SIMULATION NERVÖSER SYMPTOME. By Dr. SIEGMUND ERBEN. 194 pages; illustrated; paper; price $2.15. Urban & Schwarzenberg, Publishers, Berlin and Wien.

DER PRIMÄRE LUNGENHERD BEI DER TUBERKULOSE DER KINDER. By Dr. ANTON GHON. 141 pages; illustrated; paper; price $2.15. Urban & Schwarzenberg, Publishers, Berlin and Wien.

DIE PHYSIKALISCHE THERAPIE DER GELENKKRANKHEITEN. By Dr. EDWARD WEISZ. 265 pages; illustrated; cloth; price $1.50. Urban & Schwarzenberg, Publishers, Berlin and Wien.

STOMATOLOGY IN GENERAL PRACTICE. By H. P. PICKERILL, M.D. 208 pages; illustrated; cloth. Oxford University Press, Publishers, New York.

MANUAL OF SURGERY. Vol. III. By ALEXIS THOMSON, F.R.C.S., and ALEXANDER MILES, F.R.C.S. 565 pages, with 220 illustrations; cloth. Oxford University Press, Publishers, New York.

TEXT BOOK FOR NURSES. By E. W. HEY GROVES, M.S., F.R.C.S., and J. M. FORTESCUE-BRICKDALE, M.A., M.D. 407 pages; illustrated; cloth. Oxford University Press, Publishers, New York.

THE SEXUAL LIFE OF THE CHILD. By Dr. ALBERT MOLL. 330 pages; cloth; price $1.75 net. The Macmillan Company, Publishers, New York.

INTERNATIONAL CLINICS. Vol. II, 22nd Series. Edited by HENRY W. CATTELL, A.M., M.D. 316 pages; illustrated; cloth; price $2.00. J. B. Lippincott Company, Publishers, Philadelphia.

PREVENTABLE CANCER. By ROLLO RUSSELL. 167 pages; cloth; price $1.50 net. Longmans, Green & Company, Publishers, New York.

THE ESSENTIALS OF MORBID HISTOLOGY. By ALBERT S. GRÜNBAUM, M.A., M.D., F.R.C.P., D.P.H. 219 pages, with 22 Colored Plates and 130 Other Illustrations; cloth; price $2.00 net. Longmans, Green & Company, Publishers, New York.

LEHRBUCH DER KRANKHEITEN DES SÄUGLINGS. By Dr. A. LESAGE and Prof. Dr. RUDOLF FISCHL. 606 pages; illustrated; paper; price 12 M. Georg Thieme, Publisher, Leipzig.

PLASTISCHE OPERATIONEN. By Prof. Dr. PH. BOCKENHEIMER. Vol. I. 160 pages; illustrated; paper; price 9 M. Curt Kabitzsch, Publisher, Wurzburg.

SALVARSAN IN SYPHILIS AND ALLIED DISEASES. By J. E. R. MCDONAGH, F.R.C.S. 152 pages; cloth. Oxford University Press, Publishers, New York.

LA STERILISATION DE LA SYPHILIS. By Dr. LEREDDE. 147 pages; paper; price 2 fr. 50. A. Maloine, Publisher, Paris.

PROCEEDINGS OF THE AMERICAN MEDICO-PSYCHOLOGICAL ASSOCIATION. Held in Denver, Colo., June 19-22, 1911. 369 pages; illustrated; cloth. American Medico-Psychological Association, Publishers.

ESSAYS ON GENITOURINARY SUBJECTS. By J. BAYARD CLARK, M.D. 174 pages; cloth; price $1.25 net. William Wood & Company, Publishers, New York.

SEVENTEENTH REPORT OF THE BOARD OF HEALTH OF THE TOWN OF MONTCLAIR, NEW JERSEY. From Jan. 1, 1911, to Dec. 31, 1911. 86 pages; paper. Board of Health of the Town of Montclair, New Jersey, Publishers.

DIE GESUNDHEITSKONTROLLE DURCH DEN ORGANSINN. By Dr. ANTON BROSCH and Dr. OTTO VON AUFSCHNAITER. 67 pages; paper; price 2 M. Franz Deuticke, Publisher, Leipzig and Wien.

HANDBUCH DER SPEZIELLEN CHIRURGIE DES OHRES UND DER OBEREN LUFTWEGE. Vol. IV. No. 3/4. By Drs. L. KATZ, H. PREYSING and F. BLUMENFELD. 159 pages; illustrated; paper; price 8.50 M. Curt Kabitzsch, Publisher, Wurzburg.

LEHRBUCH DER MILITÄRHYGIENE. Vol. IV. Edited by Prof. Dr. H. BISCHOFF, W. HOFFMANN and H. SCHWIENING. 515 pages; illustrated; paper; price 7 M. August Hirschwald, Publisher, Berlin.

Medical Items.

Sclerema Cutis (Adultorum).—J. Galloway reports the case of a man, aged fifty-four, who stated that his malady followed rapidly after he was exposed to a foul atmosphere, the unpleasant odor of which he found difficult to get rid of for an unusually long time. The hardening of the skin followed this incident, and progressed for the following three months. The firm, swollen state of the skin was noticeable from the face down to about the level of the loins, and was universal within this area, though worse in some parts than in others. It was especially noticeable round the neck, over the arms, and the skin of the back. The firm swelling of the skin impeded especially the movements of the neck, the shoulder, and elbow, and gave a peculiar expressionless appearance to the face. Some hardening of the skin had been noticed about the lower part of the thighs and knees, but had passed off. On the trunk a certain degree of erythema could be noted where the hardening of the skin was greatest or most recent. On the inner aspect of the arms the hardening of the skin was seen to have a lobulated texture. There was no appearance of sclerodermia of the usual type nor of morphea at any part of the affected area. The distribution of the affection was practically continuous within the limits of the affected region. A careful physical examination had not revealed evidence of visceral disease, and had not suggested the cause of this unusual affection.—*Proceedings of the Royal Society of Medicine.*

Esophagus with Perforations Due to Ulceration Produced by Foreign Bodies.—A. B. Kelly reports the case of an imbecile lad, aged sixteen, from whom a coherent statement could not be obtained, but who was suspected of having swallowed a foreign body. The medical man consulted examined him with the *x*-rays, but finding nothing abnormal prescribed a purgative, with the result that a dozen acorns were passed. As marked inability to swallow persisted, the patient was sent to the author about two weeks after the supposed accident for examination of the esophagus. At the lower end of Brünings' longest tube when fully introduced a foreign body was encountered; and lying above it were two peas. The body itself was firmly embedded in the posterior wall of the gullet, and the surrounding mucous membrane presented many granulations. After considerable trouble the body, which proved to be another acorn, was broken up and removed piecemeal. Beneath it a large part of a vertebra, possibly that of a sheep, was found and comparatively easily extracted. As a perforation into the trachea had been detected before operation no food was given by the mouth. In spite of this precaution and efforts to keep the parts clean the patient died a week later. The post-mortem examination revealed multiple abscesses and gangrene of the lungs. The esophagus showed five perforations in the posterior wall, where ulceration had extended to the underlying vertebral column, and one in the anterior wall communicating with the trachea.—*Proceedings of the Royal Society of Medicine.*

Radium Treatment of Vegetating Epithelioma of the Cervix Uteri, Primary and Recurrent.—H. Cheron and H. Rubens-Duval make use of radium in massive doses in the treatment of vegetating cervical epithelioma, as a curative measure. The characteristics of these cancers are soft, friable masses, with large, weak-walled vessels, which easily break and cause severe hemorrhages. These cells are peculiarly sensitive to the radium rays. The tumors do not at first infiltrate and glandular metastases are a late development. The radium is used with careful filtration so as to avoid superficial burns of the vagina, the gamma and the beta rays being used. The application must last 24 or 48 hours; a previous curetting may be an advantage, since it removes a great deal of friable tissue. It destroys the nutrition of the cells and scleroses the blood vessels, finally obliterating them. The hemorrhage and pain are at once relieved, and the patient regains a fair physical condition. These cancers are very unfavorable to operation on account of their rapid recurrence. When a hysterectomy is to be done a previous application of radium and curetting will stop hemorrhage, and remove infected material, and the tissues will be somewhat hardened and thus facilitate the removal. If too much radium is applied it will render the tissues so dense that removal will be very difficult. In cases in which the parauterine tissues are much involved operation is contraindicated, and here radium has a clear field; also in recurrences after operation. The vagina becomes sclerosed and contracted. A severe dermatitis may be caused if the rays are not carefully filtered.—*La Gynécologie.*

Medical Record

A Weekly Journal of Medicine and Surgery

Vol. 82, No. 11.
Whole No. 2184.

NEW YORK, SEPTEMBER 14, 1912.

$5.00 Per Annum.
Single Copies, 15c.

Original Articles.

SANATORIUM TREATMENT OF TUBERCULOSIS.*

By LEROY S. PETERS, M.D.,

AND

E. S. BULLOCK, M.D.,

SILVER CITY, N. M.

IT is not with a desire to thrust upon the world a new specific for tuberculosis that we have chosen the above title, but rather to discuss a few unique methods in the every-day routine of sanatorium practice. To cover the treatment of this disease would mean to give page after page of uninteresting textbook knowledge which is of easy access to him who reads, and which is equally as valueless as it is uninteresting. We use the term valueless in a general sense, for the true success of treatment lies in the mental equipment and the personal equation of the physician himself. This latter is a fact well recognized by all men who have as their life work the care and treatment of tuberculous invalids.

And herein lies the great value of sanatorium over home treatment. In a disease that measures its arrest or cure in months or years rather than days or weeks this same personal equation of the physician is over half the battle. Nor is this secured in the home where as a rule the visits of the physician are semi-weekly, but in an institution where the doctor and patient are in almost constant contact, and where, if necessary, the calls may be made hourly and at any minute, and the spirit of encouragement lent that makes or breaks the thread by which a human life is held. The right word at the right time will perhaps do more toward the cure of tuberculosis than all other means combined.

But enough of generalities—the world is full of them—and the busy physician has neither time nor inclination to pore over volumes or lend ear to papers that embody a jumble of words and are woefully lacking in ideas.

The factors in the treatment of tuberculosis to which we shall refer may be thus stated: Climate, hypodermics of iron, arsenic, and strychnine in the secondary anemias of tuberculosis; the use of salvarsan in cases complicated with syphilis; treatment of cases with marked hemorrhage from the bowel; blood pressure control of exercise; injection of intestinal hormones in the chronic constipation of the tuberculous; autogenous vaccines; tuberculin.

Climate.—We deem it a great pleasure to feel that what we may say before a State meeting in Arizona on the subject of climate will at least meet with the approval of the vast majority. However, we realize that the variations of altitude in your State are many and for this reason some difference of opinion may exist. Years ago, before we realized that tuberculosis might become arrested under proper conditions, the far advanced consumptive was advised to go West, and this with no idea as to locality, mode of living or what not—merely to chase a will o' the wisp in a vain endeavor to put new lungs into a shrunken chest and create again in a worn out body the breath of life. Climatic treatment was then an empiricism; to-day it is a scientific fact.

And here let us digress long enough to state that we are firmly convinced that the greatest value of any climate lies in its elevation. In other words, the question of climate is a question of altitude. It must of course be granted that change of environment of necessity makes for a betterment in the general condition. Move a consumptive from the slums and tenements of a large city to a country place, change his diet from one of starvation to one of nourishment, and he is bound by all laws of nature to improve. Change a city dweller in good circumstances to the Adirondacks and you may arrest his tuberculosis, but to give the greatest good to the greatest number move all consumptives to the altitudes of the Rocky Mountains—then keep them there—and in a time not far distant the deaths from tuberculosis will be reduced to a minimum. These are not dogmatic statements; they are not mere flights of the imagination. The climatic treatment of tuberculosis has been established as a scientific fact by scientific observations made in the past few years by altitude workers.

In the first place that climate depends more upon altitude than upon dry air and sunshine is proven by a comparison of statistics in well conducted institutions in this country and abroad. Without here going into figures we have found by a careful study of sanatorium reports in the United States that the percentage of cures increases with each thousand feet of altitude up to certain limits. Is such a fact not in itself significant? Further, comparing our own work with that of Turban in Davos Platz at practically the same altitude, we get results that are almost identical. This then must be attributed to altitude, since government reports show that the climate of Davos Platz is colder in winter with greater snowfall and a more marked degree of humidity in summer than is the climate of Silver City.

It has also been demonstrated by Williams, of London,[1] that there is a marked expansion of the thorax in all directions, causing an increase in circumference at various levels of from one to three inches or more, and an increased mobility of the chest walls. This causes a greater physiological activity of the lungs, thereby insuring a greater amount of oxygen content in the blood.

Webb and Williams[2] have proved that with residence in a high altitude the lymphocytes of the blood are increased to a marked extent. These, as

*Read at the annual meeting of the Arizona State Medical Association, Bisbee, May 7, 1912.

you know, are the white cells that Doctor Opie, of the Rockefeller Institute, proved to have the ability to dissolve the waxy coating of the tubercle bacillus and then through a process of digestion destroy the invading organism, thereby ridding the body of a most obnoxious guest. We have confirmed the work of Webb and Williams in our blood studies at The New Mexico Cottage Sanatorium. That the hemoglobin content of the blood is increased with altitude has been a recognized fact for years, but it remained for an English commission working with American collaborators to prove that this was actual—not relative—and that the red cells were increased as high as 40 per cent. These observations were made in the Swiss Alps and in our own Rocky Mountains at elevations of from 6,000 to 14,000 feet.

In 1907 one of us (Peters) began the study of blood pressure at high elevations (6,000 feet) and the first results of our work was published in 1908,[3] covering a series of one hundred cases. The conclusions reached at that time were the subject of some comment since they were in direct contradiction to the excellent work of Gardiner and Hoagland.[4] However, after working along the same line for another period of four years we do not find it necessary to retract any of the statements made at that time. We are now preparing another report covering about six hundred cases, from which we draw the following conclusions:

1. Blood pressure is increased at elevations of 6,000 feet.

2. The pressure of both normal individuals and consumptives is higher here than at sea level.

3. The pressure tends to increase with continued residence.

4. From a prognostic standpoint the blood pressure findings are of great value in tuberculosis.

5. There is no relation between the degree of involvement and blood pressure, but there is a constant relation between toxemia and blood pressure.

6. The pressure is increased with pulmonary hemorrhage.

The various factors herein enumerated relative to altitude all tend toward the betterment of metabolism and the continual restoration of the body economy toward the normal; factors which must of necessity play an important rôle in the cure of tuberculosis. Thus has climatic treatment been torn from the realm of uncertainty and placed upon a sound scientific basis.

Hypodermics of Iron, Arsenic, and Strychnine in the Secondary Anemia of Tuberculosis.—It is generally conceded that there is a certain autolysis of blood elements in tuberculosis and constant hemoglobin estimations and blood counts bear this out. In nearly every case there is a secondary anemia of greater or lesser degree according to the severity of the infection. Any treatment that tends to remedy this condition is therefore rational and deserving of general use. In the hypodermic injection of iron, arsenic, and strychnine we have a combination that is specific in the treatment of this secondary anemia. Added to its ability to restore the hemoglobin content it acts as a general tonic, and according to W. Jarvis Barlow[5] is a remedy that proves useful in every case of tuberculosis regardless of the presence of anemia.

We reported our first observations in 1908,[6] and in 1911 read a paper before the National Association for the Study and Prevention of Tuberculosis at the Denver meeting. In this report we gave the results in a series of 254 cases in all of which marked improvement followed the injections. Our usual method is to give a daily injection in the gluteal region for twenty consecutive days. Almost invariably, unless there is marked anemia, we find this sufficient to restore a normal blood picture. Since the publication of Barlow's paper we have been giving the injections to every patient and are willing to state that clinically at least the results are satisfactory, patients feeling far better than when the drug is discontinued.

Our conclusions may be summed up as follows:

1. The injections are specific in the secondary anemia of tuberculosis.

2. The citrate of iron alone is best suited in marked anemia.

3. The metarsenate of sodium, iron, and strychnine is the best as a general tonic.

4. Arsenic and strychnine tend to promote better metabolism.

5. The hypodermic use of these drugs should always have a place in the treatment of tuberculosis.

Use of Salvarsan in Cases with History of Syphilis.—It has been our custom during the past nine months to administer salvarsan to all patients showing a recent syphilitic infection or to those not doing well but having a history of syphilis. There is no question but that there is a much greater amount of syphilis of the lung than heretofore has been supposed, and in these patients it is hard to say just how much of their trouble is specific and how much tuberculous. It is not at all uncommon for us to find that all we can do in a given case is of no avail until we have given an injection of "606," when we are gratified to see the pulmonary symptoms grow better and the general condition improve. Appetite is increased, cough and expectoration lessened, and fever reduced in a wonderfully short space of time.

In the patients thus far to whom we have given salvarsan we have had no untoward symptoms—with one exception. In this patient the temperature rose about three hours after the injection and he was slightly delirious for a period of four hours. From then on the recovery was uneventful. We use nothing but the intravenous method and prepare the distilled water and the normal salt solution the morning of the day on which the injection is given. This eliminates the possibility of the formation of any foreign proteid in the water or salt solution which in itself might produce annoying symptoms.

We feel justified from our experience in recommending the use of salvarsan in all cases with recent syphilitic infection, or in all those with a specific history who are not doing well under the ordinary methods of treatment. It is, of course, unnecessary to mention that as a matter of routine the urine of each patient should be examined and the reflexes tested with a view to excluding kidney disease or lesion of the central nervous system.

Treatment of Marked Hemorrhage from the Bowel.—This is a condition seldom met with in cases of tuberculosis. In fact, as our report[7] some months ago shows, we have had only three cases in an experience covering fifteen years, while Dr. Bonney reports two cases over a period of twenty years. Since the publication of these five cases we have received a report of one case from Dr. Shortle of Albuquerque, New Mexico; one from Dr. Lauzer of Rock Springs, Wyoming, and one from Drs. Shuman and James of Centerville, Iowa. In these

eight cases the bleeding was profuse and in four fatal, the other four making good recoveries. We have no explanation for these hemorrhages, but see no reason why they should not occur from tuberculous ulceration of the intestine, as they do in typhoid ulceration. They may, however, be due to a pneumococcus infection of the intestinal tract as pointed out by Jacobson and Post.[8] The treatment we have used is absolute rest, liquid diet, hypodermics of morphine, $^1/_4$ grain at time of the hemorrhage followed by opium suppositories every two hours pushed to the point of therapeutic effect. For a more complete report we refer you to the article above cited.

Blood Pressure Control of Exercise.—It has been generally conceded that after severe athletic tests the blood pressure is reduced sometimes to a marked degree. This has recently been the subject of an able paper by Otis[9] read before the American Climatological Association at its last annual meeting. It occurred to one of us (Peters) that if such a reduction could be demonstrated in normal individuals after fatigue this same factor might be of great importance in controlling the exercise of consumptives. With this in view a class of six men was selected, three being excellent cases both pulmonarily and physically; two fairly arrested far advanced cases, and one a rather new recruit with normal temperature but physically inferior.

All were started with a fifteen minutes walk the first day. The pressures on starting of the three able-bodied men were 138, 132, and 148 respectively. On their return the pressures were 138, 144, and 153. After an hour's rest the readings were 138, 142, and 158, showing that apparently the exercise was not harmful. The two fairly well arrested, far advanced cases, started with pressures of 164 and 124, returning with 146 and 130, and after resting, 164 and 118. The first man was not used to exercise in any form, as is well shown in a drop of 18 millimeters of mercury with a return to the original after an hour's rest. The overexertion in the second man is evident, for we find after resting that there is a drop of 6 millimeters from the original reading recorded after the return from exercise.

The new recruit started with 140, returned with 138, and after rest his reading was 127. The overexertion in this instance is well illustrated from the pressure findings and was further substantiated by the marked fatigue, breathlessness, and rapid heart action of the individual himself. This experience was carried on for a period of six days, each day's exercise being graded by the previous day's results in blood pressure. The table of these findings which we here append will show you at a glance that we were able to control the readings by an increase, a decrease, or a repetition of the exercise. Whenever a man showed a drop of 6 or more millimeters of mercury after rest or a marked drop on returning, even though this disappeared after resting, we decreased the exercise. If there was a slight drop after returning we repeated the same exercise the following day or until we maintained an even standard, when the walk was increased. It is interesting to note that in one of the three excellent cases the pressure remained practically the same even up to walks of one and a half hours, and later this same man took walks of two hours in the morning and two in the afternoon with no change in pressure and no evil results. The other two after a few repetitions were able to do the same.

We believe that this observation will prove of great value in controlling the exercise of consumptives since it is not always a safe procedure to rely wholly upon pulse and temperature.

The Use of Intestinal Hormones in the Chronic Constipation of the Tuberculous.—Recently it has been demonstrated that the cells of the mucous membrane of the stomach elaborate a so-called hormone which has a marked effect on peristalsis. This hormone is secreted in the antrum pylori and

Case No.	BLOOD PRESSURE			PULSE			Remarks
	Before	After	After Rest	Before	After	After Rest	
1	138	138	138				1st day 15 minute walk
	138	141	150	92	98	80	2nd day Increased to 30 minutes.
	140	139	150	98	92	76	3rd day Increased to 45 minutes
	142	140	140	96	106	80	4th day Increased to 1 hour
	140	142	138	88	88	76	5th day Increased to 1 hour, 15 minutes
	142	138	140	88	88	76	6th day. Increased to 1 hour, 30 minutes
2	132	144	142				1st day 15 minute walk
	126	122	127	74	80		2nd day Increased to 30 minutes
	126	135	126	66	76	68	3rd day Increased to 45 minutes
	132	134	116	78	80	84	4th day Increased to 1 hour
	126	130	126	70	80	72	5th day Cut to 45 minutes
	126	124	136	76	76	75	6th day Repeated 1 hour walk
3	146	138	127				1st day. 15 minute walk
	142	124	132	120	120	100	2nd day Repeated 15 minute walk at slower pace.
	140	145	130	120	118	96	3rd day. Cut to 10 minutes at slow pace
	132	145	142	120	120	112	4th day Repeated 10 minute walk
	142	150	140	116	120	108	5th day Repeated 10 minute walk
	138	146	142	118	120	104	6th day Increased to 15 minutes
4	148	152	158				1st day 15 minute walk
	146	146	135	88	84	72	2nd day Increased to 30 minutes
	145	142	146	80	80	72	3rd day Repeated 30 minute walk
	150	140	142	80	100	72	4th day Increased to 45 minutes
	145	140	158	84	80	76	5th day Increased to 1 hour
	140	142	138	76	80	80	6th day Increased to 1 hour, 30 minutes
5	164	146	164				This man unused to exercise
							1st day 15 minute walk
	146	134	144	118	120	106	2nd day Cut to 10 minutes
	140	150	138	110	104	100	3rd day. 10 minute walk
	146	146	138	90	98	110	4th day Increased to 15 minutes
	144	144	152	110	100	100	5th day Repeated 15 minute walk.
	138	144	146	104	104	92	6th day. Increased to 25 minutes.
6	124	130	118				1st day. 15 minute walk
	115	114	110	100	120	108	2nd day Repeated 15 minute walk
	122	117	118	100	100	84	3rd day Increased to 20 minutes
	115	110	115	100	110	100	4th day Increased to 30 minutes
	122	110	112	88	110	96	5th day Increased to 45 minutes
	115	114	114	96	96	88	6th day. Decreased to 30 minutes.

stored in the spleen. When absorbed it causes a secretion of the normal gastric juice. Working on this hypothesis Zuelzer[10] has studied the peristaltic hormone for therapeutic purposes. He has used it in chronic constipation and in acute paralysis of the intestine, with excellent results, so he states, in 71 per cent. of his cases. Its use in spastic constipation is, of course, contraindicated since here we have an over stimulation of the intestine.

In the constipation of the tuberculous we have as a causative factor the faulty secretion of the gastric juice, as is evidenced by a lack of free hydrochloric acid. Naturally, when we can introduce a remedy that tends toward the production of a normal secretion and thus stimulates peristalsis we should from the standpoint of theory at least cure the constipation. Working on this basis we have been injecting intestinal hormones in doses of 20 c.c. both intravenously and intramuscularly. Contrary to the literature on the subject we find that intramuscular injections are not painful and of course are much more easily given. There is always more or less nausea following an injection, and a feeling of discomfort for a period of twenty-four hours. Since we find no ill effects following an intramuscular injection we use that method as a matter of routine. Our results so far in a limited number of cases have been sufficiently satisfactory to encourage us in its use.

Autogenous Vaccines.—For the past three years we have continually used autogenous vaccines in all cases of tuberculosis showing a daily range of fever above 101° Fahr. Lately we have been giving them in all cases with a temperature curve over 100° Fahr. Like tuberculin one cannot look for wonderful results in the use of these vaccines, and it has occurred to us that perhaps the reason we have not perceived more striking curative effects lies in the fact that until recently we have chosen the most unlikely cases from the standpoint of cure. It is a fact that cannot be made light of that to expect to cure hopeless cases of tuberculosis with any given drug or serum is looking forward to the intervention of a divine Providence. For that reason we have made it a matter of routine to first employ an autogenous vaccine in all patients with a fever above 100° Fahr. Then if we get no appreciable result we begin the administration of tuberculin, using the one in conjunction with the other.

So far our results have been such as to justify us in a continuation of this form of treatment, and, clinically speaking, we feel that there is much of good to be derived from the application of Wright's theories of vaccine therapy. To sit idly by and dogmatically declare that a patient does as well without such medication as with it is to put a spike in the wheels of progress toward scientific medicine which in our opinion is nothing short of criminal. Careful administration of such vaccines and personal supervision of patients eliminates all danger from such procedures, and the wonderful improvement in many patients after their use is proof positive of their beneficial effects.

We make the vaccines in our own laboratory and give the injections at weekly intervals, starting with an average dose of one hundred million dead bacteria and gradually increasing the dose unless contraindicated. The length of time of treatment is guided entirely by results, some patients taking injections for as long as eighteen months.

Granting, as we all do, that much of the fever in tuberculosis is of mixed infection origin, why is it not rational to use methods of treatment directed at the causative factors? Theoretically the use of autogenous vaccines and tuberculin is the one scientific principle in the therapy of tuberculosis.

Tuberculin.—In a paper of this nature space does not permit a full discussion of the experimental and theoretical knowledge of tuberculin therapy. That we have done in a paper to be read at the next annual meeting of the Harper Hospital Alumni Association at Detroit, Mich., in May. Here we shall confine ourselves to a consideration of the application of tuberculin in the treatment of tuberculosis.

We realize that probably no therapeutic measure has more firm adherents nor more sworn enemies. Those of us who have had a large experience in its use and have seen wonderful examples of its undoubted effect are firmly convinced that it holds a scientific place in the armamentarium of every tuberculosis worker. On the other hand, those who have never used it and who declare dogmatically against its application to the therapy of tuberculosis are either ignorant of its field of usefulness or are wilfully neglecting a valuable agent in the treatment of a disease that is otherwise almost hopeless from a direct therapeutic standpoint. To condemn a given remedy because of reckless use on its introduction into the field of medicine, or to neglect to use it because of a foolishly conceived idea that it might do harm in some cases is absurd.

In our opinion every physician who has the care of tuberculous invalids should feel free to use tuberculin and should so acquaint himself with its use that he may judge wisely in selecting patients and in administering the remedy. It is not now as in the past a measure for the specialist or the sanatorium worker. Time has modified the technique and experience has taught us the fallacy of high doses, so that any conscientious physician can with a little time and trouble work out to his own satisfaction and that of others a sound basis for the administration of tuberculin.

Roughly speaking, tuberculin can be given to the large majority of consumptives, but that we see an appreciable effect in all patients does not necessarily follow.

First, there are those who accept every injection as though it were a dose of distilled water and a so-called course up to a thousand milligrams may be given without the slightest systemic disturbance. From a prognostic standpoint this class forms the most favorable of all tuberculous invalids, and there is little doubt that nature has conferred upon them, before the use of tuberculin, a toxic immunity so that the additional tuberculin is superfluous and in our opinion productive of neither good nor ill.

Second, there is a small class with the most unfavorable prognosis who develop a marked hypersusceptibility and in whom all toxic symptoms are exaggerated by tuberculin. There is little doubt but that in these patients tuberculin therapy is harmful if persisted in, but if withdrawn at the first signal of distress evil results will not follow.

Third, there is a class in which tuberculin is unequivocally beneficial. For the sake of clearness we shall divide this class into those with fever, limiting such temperature to averages below 101° Fahr.; those showing marked improvement following reaction, and those showing a general but slow benefit.

In the fever cases just mentioned showing a temperature curve from 99° to 101° tuberculin is the most efficient measure at our command and often

succeeds when complete immobilization has failed. Although reactions should be guarded against, at times they occur and everyone no doubt recalls the marked improvement and sometimes cure following such overdosage.

We have patients under our care for the past six years who continue to live in comfort and enjoy life while under tuberculin treatment, but the moment it is stopped general malaise and discomfort follow together with an increase in the pulmonary findings. Resume treatment and a return to former feeling of well being ensues. A large number of patients show this same general but slow improvement under tuberculin and progress steadily toward an arrest or cure, which we feel confident would not have been possible without the use of this measure.

Do not form the opinion that we give tuberculin to everybody—that we do not. When a patient enters the institution we give him an opportunity to see what nature will or will not do. Tuberculin is not considered until we have learned the individual, his powers of resistance, what he will do for himself. In this way we are better able to form honest opinions as to the value of the tuberculin, and in patients who show a marked ability to recover under ordinary measures we do not interfere.

To use tuberculin requires a certain amount of care and common sense. We mention the use of the reaction method in guiding dosage merely to condemn it. Although we have seen brilliant results follow the administration of an overdose, we know positively that once started a reaction is uncontrollable and is capable of far greater injury to the organism than would be justified by an occasional brilliant result.

The so-called scientific method of White and Norman is worthy of mention. These men have demonstrated that by using the smallest amount of tuberculin that will produce a minimum skin reaction and then taking a division of this amount for subcutaneous injection the proper dose for each and every case has been supplied. The method is attractive but too new a procedure upon which to pass judgment. For the present the clinical method advocated by Trudeau seems more rational and deserving of common use.

The opsonic index is not reliable and if we are to accept the theory of Jackson and Hawn[11] what we once considered an expression of the immune process is simply a matter of surface tension of leucocytes and can be influenced at will by a concentration or a dilution of the blood current. Experience has shown us that with such preparations as B. F. and B. E. the initial dose as recommended by Trudeau is much too high. In fever cases we start with one ten millionth of a milligram and have seen undoubted reactions occur with nine ten millionths.

One of us (Bullock) has developed a modification of the clinical method which we feel sure is a long step in advance in tuberculin administration. This method was first proposed at the Los Angeles meeting of the American Medical Association in 1911. As far as we know, no attention has been given it by American observers, and it has been very gratifying to have the usefulness of the method confirmed by so able a clinician as Eduard Bauer.[12] Bauer is evidently not aware that we had already developed and published this method. We trust that this will not be interpreted as a claim to priority, in which we have no interest, but simply an acknowledgment of our satisfaction in his confirmation of the method.

Briefly this procedure which we have practised at our institution for the past three years may be described as maintenance of an effective dose in either febrile or afebrile cases, and raising the dose when it has become enfeebled by repetition as confirmed by absence of clinical effect. Let us give a practical illustration. A patient exhibits a persistent maximum temperature of 99.3° Fahr. The dose is gradually raised until an effective point is reached, one which reduces the temperature. This dose is then repeated until a rise again occurs, when the dose is not lowered but raised, following the temperature up as it were in an attempt to again reach an effective dose until gradually the temperature drops to and is maintained at normal. This fortunate result having been observed we are guided in the dosage by principles which obtain in normal temperature cases in which general clinical effect is our guide for repeating or raising the dose. We trust that we have made it perfectly clear that no attempt is made to reach a high dose during any period of the treatment.

In the foregoing we have tried in as brief a manner as is consistent with clearness to outline a few of the usual as well as unusual measures in the treatment of tuberculosis. We trust they will at least receive your consideration and that you will be able either to refute or verify our work.

REFERENCES.

1. Transactions International Congress on Tuberculosis, Wash., 1908.
2. Transactions National Association for the Study and Prevention of Tuberculosis, 1909.
3. Archives of Internal Medicine, August, 1908.
4. Transactions American Climatological Society, 1906.
5. Journal of the American Medical Association, Vol. LVII., No. 18.
6. Peters, L. S.: Medical Record, October 10, 1908.
7. *Journal of the American Medical Association*, Jan. 13, 1912. Vol. LVIII.
8. *American Journal of Medical Sciences*, March, 1912. Vol. CXLIII., No. 3.
9. Transactions of the American Climatological Association, 1911.
10. *Medical Klinik*, 1910, No. 11.
11. *Archives of Internal Medicine*, Vol. IX., No. 1.
12. "Control and Eradication of Tuberculosis," by many Authors. William Greene & Sons, London.

OBSERVATIONS FROM 500 CASES TREATED BY AUTOGENOUS BACTERIAL VACCINES.*

By HENRY A. CRAIG, M.D.,

NEW BRIGHTON, NEW YORK.

PATHOLOGIST AND BACTERIOLOGIST, S. R. SMITH INFIRMARY; BACTERIOLOGIST, ST. VINCENT'S HOSPITAL, STATEN ISLAND.

Bacterial vaccines consist of a suspension of bacteria in normal salt solution, killed by heat or chemicals, and standardized by enumeration and dilution so that each cubic centimeter contains a convenient number of bacteria, varying according to the dose of the particular vaccine. A preservative is added to prevent contamination, such as carbolic ½ per cent.

Autogenous vaccines are made from the bacteria obtained from the patient under treatment and therefore must correspond to the bacteria causing the disease. Stock vaccines consist of bacteria morphologically similar to those causing the disease but obtained from some other source than the patient under treatment. Unfortunately, being

*Read before the Medical Association of the Greater City of New York, June 10, 1912.

morphologically similar does not guarantee that they will correspond exactly to the basteria at fault, for the reason that many of the great groups of bacteria have a large number of subdivisions, *e.g.*, the streptococcus and the colon bacillus. Hence autogenous vaccines, if available, are, in every case, superior to stock vaccines. Infections are very apt to be mixed, so in making an autogenous vaccine it is wise, in many cases, not to isolate any particular organism but to grow all together synergistically and to standardize this vaccine according to the predominating organism. Less than two-thirds of the present series were due to infection by a single organism, in the other one-third of the cases, two or more organisms being found. Also, in chronic infections, a change in the bacterial flora is apt to take place, the original infection dying out and another bacterial infection taking its place or being added to it; so that it is necessary to make new cultures from time to time in order to recognize any change in the bacterial flora and make a new autogenous vaccine when necessary.

The purpose of bacterial vaccines is to assist nature to produce an active immunity against the infection present. Before the use of sera and vaccines in the treatment of disease, we had to wait for the body to manufacture the necessary antibodies to neutralize the toxin and destroy the bacteria causing the disease. When this is delayed, we have a prolonged illness or a fatal ending due to damage to some vital part. The early use of bacterial vaccines stimulates the tissues to form the proper antibodies and this saves the tissues from the prolonged harmful influence of the toxins and bacteria. In other words, the keynote of the treatment of all bacterial infections is the production of immunity. Which means the power through which a cure is effected as well as the power to resist infection.

Immunity is of two forms, active and passive. The injection of the various sera produces passive immunity, for the protective agencies are introduced into the body all ready for action against the toxins or bacteria. This would seem an ideal method of treatment, for the immunity produced is almost immediate and requires no effort on the part of the body. Unfortunately the immunity produced is but temporary and the treatment has but a narrow application. It is possible to produce sera antagonistic to the bacterial causes of disease in only a few instances, notably diphtheria, tetanus, etc.

The immunity produced by the introduction of bacterial vaccines is an example of active immunity. The body tissues are stimulated to produce their own protective agencies, the same as occurs in the case of natural recovery from an infection. This treatment has a very wide applicability, in every case in which the causative organism can be obtained or is known.

This treatment necessitates sufficient vitality on the part of the body to respond to the stimulus of the vaccines. In case the body is too exhausted by toxemia, etc., the tissues lose their ability to respond to the stimulus of the vaccines by elaborating the specific antibodies. Hence the treatment should not be left as a last resort when the body has neither the time nor the ability to react. In such cases the sera, if applicable, would promise more, attempting to produce passive immunity which would require neither time nor effort on the part of the body.

Infectious diseases are due to the entrance within the body of some kind of bacteria. If the body is susceptible to their injurious effects, it resists the invading hosts and a fight to the death of one or the other is on. The bacteria multiply rapidly, either locally or generally, and produce their harmful effects chiefly by the elaboration of poisonous toxins. In this battle between the body and the bacteria, the body's principal method of defense is by means of the phagocytes (cells having the power of engulfing or ingesting the bacteria and destroying them by a process of digestion). Many of the cells of the body have this power, but the principal phagocytes of the body are the white blood cells. These are the soldiers of the body, a great standing army, able to be doubled or tripled at a short notice. But these soldiers are helpless without the proper weapons. The necessary weapons are substances in the blood serum called opsonins, so called because they so act upon the bacteria that the latter are easily taken up by the phagocytes and destroyed. They do not act by stimulating the phagocytes to increased activity as might be supposed. If an emulsion of bacteria and one of washed leucocytes are put into a test tube together, nothing happens. Then add some fresh blood serum which contains the necessary opsonins and the leucocytes vigorously attack the bacteria.

The result of the administration of bacterial vaccines is to increase the specific opsonins. This can actually be measured by taking the opsonic index, which is the measure of the opsonic power of the blood serum of a patient as compared to the normal. It also increases the leucocytes, thus increasing the soldiers as well as their weapons. It must be remembered that the administration of bacterial vaccines does not directly furnish the soldiers, phagocytes, with the necessary weapons, opsonins. It simply stimulates the body tissues and especially the subcutaneous connective tissues to manufacture more of the needed opsonins. Therefore bacterial vaccines are never given intravenously or by mouth but by hypodermic injection into the subcutaneous connective tissue, where the opsonins are principally elaborated, absorbed by the blood, taken to the site of the infection, if it is a local one, and assist the phagocytes in their fight at this point. In this we are simply copying nature, for in any infection many of the bacteria are killed and disintegrated, acting then as an antigen to increase the specific opsonins, just as the absorption of toxins from the site of infection stimulates the body to produce antitoxins, etc.

After the administration of bacterial vaccines the opsonins increase in amount for approximately ten days, when the maximum is reached. Then they remain constant for a time and then slowly decrease to the normal after a period of weeks or months. In many diseases the immunity produced lasts much longer than the period of time during which antibodies are found in the blood. This is due, no doubt, to the fact that the tissues acquire the power of reacting quickly to the same infection in case it subsequently occurs, so that large amounts of antibodies are quickly elaborated and the invading organisms destroyed before they accomplish any injury.

Why are autogenous vaccines superior to the stock vaccines? Just as antitoxins, precipitins, agglutinins, anaphylactins, etc., have been shown to be absolutely specific, so the opsonins produced by the injection of bacterial vaccines are absolutely specific, preparing only that particular variety of

bacteria for ingestion by the phagocytes. Therefore, unless the right vaccine is introduced, little or no good can be expected. It is not sufficient to have the right group of bacteria, but even the subdivision must correspond, as they are specific to that extent. To obviate this many of the stock vaccines are made from bacteria obtained from many sources—polyvalent vaccines. Also it is necessary to have a vaccine prepared from bacteria of the same virulence as those causing the infection. We could not expect much benefit from a vaccine prepared from an acne pustule in the treatment of a virulent carbuncle, though the infection in both cases might be due to the staphylococcus. These conditions can be perfectly fulfilled only by using an autogenous vaccine.

In the present series of cases the writer has made no attempt to measure the effects of the vaccine by taking the opsonic index. The technique is too elaborate and the results vary too much to justify the time and labor required. Clinical symptoms plus the aid of general rules afford a sufficient guide as to dosage, intervals between doses, etc. Taking the leucocyte count would not help any as a guide. Bacterial vaccines do, of course, increase the number of leucocytes in many cases. But there are many other things that do the same, as exercise, food, the cold bath, saline infusion, certain drugs, etc. As stated before, the value of the administration of a bacterial vaccine lies in its ability to stimulate the increased production of specific opsonins, thus furnishing the soldiers with the proper weapons for the fight. There are generally plenty of the soldiers, ten to thirty thousand per cubic millimeter—one to two million per drop—but if they are not properly armed they are powerless. In many infections in which the body seems to be getting the worst of the contest, this is the trouble, as proved by the good results following the use of vaccines. In typhoid fever the endothelial cells of the lymph spaces, etc., seem to be the phagocytes most active against this particular form of infection and the leucocytes are not increased. In tuberculosis the lymphocytes and connective tissue cells seem to bear the brunt of the defense, and again the leucocytes are not increased. But the opsonins are necessary in every case to act upon the bacteria in such a way that the phagocytes are able to destroy them.

The cases mentioned in this paper are by no means picked cases. They include all that came along in hospital, dispensary, and private practice. In fact, in the hospitals only the worst cases are, in many instances, turned over for this treatment. Some of the cases were not applicable for the treatment, but it was used as a last resort. Four patients died before a vaccine could be made, within twenty-four hours, showing the hopelessness of some cases for any treatment. A number died within a few days after the treatment was instituted before it could have any effect. If only applicable cases were picked for the treatment the results would look better. Besides these cases the writer has treated about a hundred cases with stock vaccines with good results in many instances, but these are not included in this report.

The best results were obtained in cases of staphylococcus infections. For staphylococcus infections the treatment is practically a specific. Seventy-one of the present series of cases were cases of pure staphylococcus infection. All were quickly cured except two hopeless cases of septicemia following osteomyelitis, making the mortality of this class of cases 3 per cent. This is the reason why carbuncles, furuncles, etc., even in diabetics, are so easily controlled, because they are generally pure staphylococcus infections. Also cases of cellulitis and of infections of any kind, when due to the staphylococcus, are generally quickly brought under control. In preparing a vaccine one is always glad to see it turn out to be a pure staphylococcus infection, for that means a good prognosis, as a rule, no matter how severe the infection.

Many infections, cases of cellulitis, abscesses, etc., are due to a mixture of staphylococcus and some other organism, very often the streptococcus. This means a more serious infection and more difficult to control. Sixty-one of the present series were cases of mixed staphylococcus and streptococcus infection. Three of them died—a mortality of 5 per cent.

The pure streptococcus infections are worse still—46 cases, 4 deaths; mortality, 9 per cent. Pure colon infections, 36 cases, 2 deaths; mortality, 5½ per cent. Colon infections, as a rule, are very amenable to treatment by autogenous vaccines, nearly as much so as staphylococcus infections.

The *Bacillus pyocyaneus* is said to be of such low virulence that a vaccine of this organism does little or no good. Still, six cases of this series due to *Bacillus pyocyaneus* responded very nicely to an autogenous vaccine. However, the number is too small to form an opinion.

Furunculosis, 15 cases. All were due to the staphylococcus except one that was due to a mixed staphylococcus and streptococcus infection, of long standing, and very intractable to all sorts of treatment. It yielded at last to autogenous vaccine treatment. All the others were quickly cured. No failures. Generally two or three doses are sufficient.

Carbuncles, 13 cases, 3 of them in diabetics. All were pure staphylococcus infections, and the results, in every case, should persuade the most skeptical of the value of the treatment. One, situated in the middle of the patient's back, was as large as a saucer and had about a dozen small openings. Another on the back of the neck in a diabetic with a purulent cellulitis reaching as far as the eyebrows, the whole scalp a boggy, purulent mass. No matter how severe, they quickly responded to the treatment. Very often the patients describe a difference in their general feelings a few hours after the first dose. It is only necessary to make a slight opening to let out the pus and detritus. No such enormous incisions and excisions, as were formerly necessary.

Cellulitis, 54 cases, involving hands, arms, legs, etc.; 23 were staphylococcus, 10 pure streptococcus, the others mixed infections. Some of them were very severe; temperature 105°. There were no failures. The staphylococcus cases yield the most readily, though some of the most brilliant results were in virulent streptococcus infections, where the patients were very sick, with high temperature, etc. Most of them were incised, but no such extensive incisions were made as would ordinarily be necessary to control the spread of the infection. This treatment, in conjunction with conservative surgery, is undoubtedly of great value in these cases, saving time, diminishing the danger of complications, and making unnecessary extensive mutilating operations.

Abscesses of various parts of the body, 23 cases: 5 staphylococcus, 2 streptococcus, 3 colon, the others mixed infections. The same observation holds here as for cellulitis. They require less extensive operations, heal more quickly, and there is less danger

of complications. The results were very satisfactory in every case. Several cases of ischiorectal abscess were in patients dying of tuberculosis. Even in these cases the treatment was worth while, diminishing the pain and discharge, and making the last days of the patients more comfortable. Ordinary ischiorectal abscesses are greatly benefited by the treatment.

Post-operative infections, 41 cases. These were nearly all the result of the trouble for which the operation was done and not following clean operations. Gangrenous or perforated appendix 20, pyosalpinx 9, gallstones or cholecystitis 3, hernia 5, ulcerating carcinoma of the breast 1, cesarian section, both infected before operation, 2; nephrectomy 1. Many of the cases were mixed infections—10 cases of staphylococcus, 9 of colon, and 2 of streptococcus, the others mixed. This is a class of cases in which the benefit from autogenous vaccines is very marked, shortening convalescence, diminishing the danger of complications, and assisting healing. All these cases were materially benefited. None died, though there were some severe cases of general peritonitis, etc.

General peritonitis, 10 cases; streptococcus, 2 cases of which 1 died, colon, 4 cases with 1 death, the others mixed streptococcus, colon, etc. All were desperate cases, were drained and received all the routine treatment. The low mortality of 20 per cent. is a remarkable result and looks as if the vaccine treatment helped out the operative interference.

Post-partum infections, 10 cases; staphylococcus 1, streptococcus 3, the others mixed streptococcus, staphylococcus, and colon. All were in a serious condition when treatment began, several seemed hopeless, but all recovered. This is a class of cases that can be materially benefited by autogenous vaccines, but the treatment should be started early before the patient is moribund from sepsis.

Post-abortion sepsis, 10 cases; seven were pure streptococcus infections, of which two died, the others mixed infections. Two had perforation of the uterus, one of them with damage to the intestines, both recovering. Of the deaths one lingered four weeks and died of exhaustion, the other of toxemia with a subnormal temperature. Apparently these cases are worse than cases of post-partum infections, streptococcus infections being more common, 7 out of 10 to 3 out of 10 of the latter.

Septicemia with positive blood cultures, 5 cases. One died, the writer's first case, a staphylococcus infection following osteomyelitis of the leg. The other three recovered—one colon, one staphylococcus, the other staphylococcus and streptococcus. Apparently the vaccine helped these three.

Septic endocarditis, 2 cases. Both died, one two days after the treatment was begun. Vaccine treatment is of no avail for such infections; the body is in no condition to manufacture its own protective agencies. Sera, if available, would be more apt to do good.

Erysipelas, 12 cases. One, a baby, died of exhaustion, a private case that the writer never saw, treated most of the time with a stock vaccine. The others cleared up with remarkable rapidity, the temperature rapidly becoming normal and the process soon being under control. The duration of treatment, according to many authorities, is cut in half, and apparently this is no exaggeration. In some cases it was not possible to get an autogenous vaccine, and they were treated with a polyvalent streptococcus vaccine with good results. The writer has failed to see any slowly spreading, long drawn out cases treated by this method. The benefit which the patients feel twenty-four hours or so after the treatment is instituted is alone worth while, even if it did not cut short the disease, which it certainly does.

Pneumonia is a general infection with local expression in the lung, for the pneumococcus can be recovered from the blood in 70 per cent. or more of all cases. The general mortality, in spite of all treatment, remains high—20 to 25 per cent. (of 465,400 cases collected by Wells the mortality was 20.4 per cent.). There is preponderance of evidence that the immunity against pneumonia is a phagocytic one, therefore it would seem that the vaccine treatment should be especially applicable. It is essential that the treatment be instituted early. Time is a very necessary factor and there is little enough of it under the best of circumstances. There is no doubt that the treatment is applicable for pneumonia and of great benefit in many cases. Forty-seven cases of this series were cases of pneumonia with seven deaths; mortality 15 per cent. This does not give a fair idea of the value of the treatment, for many of the cases were turned over for the treatment as a last resort. Several died of delirium tremens, toxemia, etc., from 24 to 72 hours after the treatment was begun, and a number even died before the vaccine could be prepared. In proper cases, when the treatment is instituted early, it is very satisfying to see the toxemia diminished, the delirium clear up, the duration of the disease shortened, and convalescence more rapid. In an institution here on Staten Island for aged men (Sailors Snug Harbor), where the writer had early access to all cases of pneumonia, there was not a single death from pneumonia for a whole year, at one time, among nearly a thousand inmates. In the last 20 cases of pneumonia met with in the writer's private practice, treated with vaccine, there was but one death. Mortality 5 per cent. A stock vaccine should be administered while the autogenous is being prepared. Some cases clear up so rapidly that it makes it look like a case of mistaken diagnosis.

The treatment was tried out in about a dozen cases of severe "colds," acute bronchitis, etc., once upon myself. These cases are due to a mixed infection, with the micrococcus catarrhalis predominating, though the streptococcus is very evident at times. The results were very satisfactory, rapidly diminishing the cough, malaise, and fever, if present, and soon controlling the infection, saving time and much discomfort.

Empyema, 5 cases; pneumonococcus 2, colon bacillus 1, mixed staphylococcus and streptococcus 2. One died of exhaustion, one is still under treatment and nearly well, the others recovered. Empyema of recent origin is undoubtedly benefited by the treatment; but chronic empyema, of long standing, with retracted lung, etc., cannot be benefited much, except to diminish the discharge and indirectly benefit the patient by lessening the toxemia.

Osteomyelitis, 5 cases. Two died of septicemia, 2 still under observation. These are not cases in which the treatment can be expected to accomplish much, as there is generally dead bone present acting as a foreign body, and septic absorption is too rapid. In infected compound fractures, however, the treatment is of undoubted benefit to prevent spread of the infection, as shown by four cases in the present series.

Otitis media, acute cases 17, chronic 6; staphylococcus 5, streptococcus 2, the others mixed infections of staphylococcus, streptococcus, pneumococcus, etc. Many of these cases have been lost sight of after they left the hospital, so that the subsequent course is unknown. In acute cases the treatment seemed of benefit in every instance except one, which went from bad to worse in spite of everything done and had to have very severe operative interference to control it. The treatment generally rapidly lessens the discharge, diminishes the fever, lessens the duration of the disease and the danger of complications. In chronic cases there is very often dead bone present, and the treatment can do little except to diminish the discharge and possibly prevent the spread of the infection to other parts, though recently the writer has had very brilliant results in clearing up an old discharge in two cases, one of four, the other of eleven years' duration. The treatment undoubtedly makes the patients feel better, and they pick up in their general health. Some writers claim that even in chronic cases, if continued long enough, it will assist nature in throwing off the dead bone and curing the disease, producing an ultimate result better than operative interference, as hearing will be less interfered with. The treatment is certainly worth a trial in all cases of otitis media. Theoretically they should be perfect cases for the treatment. Early paracentesis and vaccine treatment will save many a mastoid.

Mastoids, 3 cases, the treatment being given after the radical operation. One died six weeks later of exhaustion (a baby), the other two recovered, one at least apparently being greatly benefited by the treatment.

Pyelitis, 16 cases, all colon infections. These are difficult cases to treat by any method of treatment. An autogenous vaccine can control the infection of the mucous membrane, diminish the pus in the urine, relieve the patient of the toxemia, and give him a subjective cure; but it is very difficult to get rid entirely of the bacteria in the urine, as they are beyond the reach of the phagocytes. These must be gotten rid of by the administration of urinary antiseptics over a long period of time. Such cases, in hospital practice, are difficult to keep track of; but as far as known all were greatly benefited, cured, or are still under treatment. The same observation holds with cases of cystitis; the treatment benefits the patient but it is practically impossible to rid the urine of bacteria by this means alone.

The treatment was tried out in three cases of asthma. One was not benefited at all, a bad case of spasmodic asthma; another is said to be cured, though it is too early to judge; the other is still under treatment and practically cured, according to last report.

The writer does not wish to appear to claim that vaccine treatment is a cure all. It has its limitations, of course. But even if there are cases where it is of no benefit, the case not being suitable for the treatment or the patient not having sufficient vitality to react, still, given with proper precautions, there seems no reason to fear any harm from the treatment. In a personal administration of over a thousand doses of autogenous vaccines, the writer cannot recall a single instance where any evident harm resulted. There were no cases of hypersusceptibility or anaphylaxis, and no evidence of bad effects due to the so-called negative phase. The treatment cannot take the place of surgery, but in many instances it is a very useful adjunct to surgical procedures. It does not interfere with old established methods of treatment, as they can be carried out in conjunction with the treatment, if thought advisable. It is simply a great addition to our armamentarium in the treatment of bacterial infections.

INSTITUTIONAL TREATMENT OF ARTHRITIS DEFORMANS.

By SAMUEL W. BOORSTEIN, M.D.,

NEW YORK.

ORTHOPEDIC ASSISTANT IN MONTEFIORE HOME, CLINICAL ASSISTANT IN THE ORTHOPEDIC DEPARTMENT OF VANDERBILT CLINIC AND THE HOSPITAL FOR DEFORMITIES AND JOINT DISEASES.

As a sequel to the publication of my article "Abstract of Treatment of Arthritis Deformans in the Montefiore Home" in the MEDICAL RECORD of February 10, 1912, I am now giving a more detailed description of the treatment of arthritis deformans. This will enable the interested reader to follow more closely the various steps in the treatment and will permit him to form his own opinion as to the efficiency of these modes of treatment. Many of these treatments can be carried on outside of an institution. This article may, therefore, be of benefit to those physicians who are practising in a locality where no institution of the kind is accessible.

This disease which disables many individuals and throws them as a burden upon their relatives and the community has always been considered incurable. A person who has unfortunately been afflicted with this disease knows that his fate is to remain a live cripple. After taking various treatments at bathing resorts, finally unimproved, he lands in a home for incurables. Not only by the laity has this disease been considered incurable, but also by the medical profession in general. When the final diagnosis was established, the practitioner would say: "I can do absolutely nothing for the patient. Send him to an institution." The homes which received such patients knew that it meant inmates for the remainder of their days. These institutions provided beds for the unfortunates, where they were permitted to remain and slowly deteriorate.

Even the orthopedists to whom these cases were referred have been rather skeptical about any improvement. Fortunately during the last few years a great deal of work has been done in England on arthritis deformans and very good results have been obtained. Great emphasis is put on "systematic treatment." These patients who have been crippled for many years cannot expect to be cured quickly. The physician and the patient must have a great deal of patience and good results will follow.

As mentioned in a previous article, various systematic treatments were undertaken at the Montefiore Home, the Hospital for Chronic Invalids, where patients are admitted for longer periods. After a good deal of patient work, marked improvement in many cases have been reported.

General Considerations.—It has been shown that arthritis deformans is not the name of a disease but is a class name of these clinical groups which include cases of deformities of joints, the specific cause of which is unknown. The changes are due to infection of some unobserved tract. A great deal can be traced to toxemia of the intestinal tract. The gouty type of chronic arthritis, which is one

of purely chemical changes, is not included in this class. Before undertaking the treatment the source of infection should be carefully looked for. The mouth, ear, nose and throat should be examined thoroughly, for these usually neglected localities are the chief places through which infection may enter the system. This disturbing source should be removed at first. If the tonsils are enlarged they should be excised. A very careful examination should then be made of the digestive system for ptosis, delayed absorption, or dilatation of the stomach, and these faulty positions should be corrected. The digestive power should then be tested. Most of these patients suffer with constipation and their urine is loaded with indican and etheral sulphates. It has been observed that whenever patients are suffering with constipation, pain and discomfort in the affected joints are the marked distressing symptoms or, as Sutter expresses it, "Exacerbation of joint symptoms follows digestive or gastrointestinal disturbances." The urine should frequently be examined, and when indican is present in large quantities a high ichthyol or castor oil enema should be given. This procedure greatly relieves the pain. Even two or three enemas a week can be given and thus eliminate distressing symptoms. After a while the condition improves and no more enemas will be needed. Some use purgatives for a short time, but it is better to attempt to regulate the evacuation of the bowels by means of diet or vibrations over the abdomen. Some use saline colonic irrigations. These remove irritating particles in the state of decomposition and at the same time give daily evacuations (Sutter).

Another source of infection is the genitourinary tract; hence the prostate, and in woman the pelvic organs should be examined.

The treatment should be divided into (1) that of the general condition, and (2) that of the joints.

General Treatment.—*(a)* Hygiene—Outdoor life is very important. Patients may be rolled out every day on wheel chairs, even in the coolest day as long as the weather is dry. Mental, emotional, and sexual rest should be obtained. Grief, fear, and severe nervous shocks have been shown to exacerbate the symptoms. An institution under the direction of a competent physician is the best place for such patients, where they can obtain complete mental rest and follow the systematic treatment without any disturbance.

(b) Diet.—The patient is allowed to eat whatever agrees best with him and an increase in weight is thus encouraged. There is a common belief that it is harmful for these patients to gain in weight. But according to careful observations, since the patients are anemic, there is no reason why the nutrition should not be increased. The muscles are greatly atrophied and it is, therefore, worth while increasing the nutrition. The physiological resistance of the various tissues and the efficiency of the vital activities in general will be augmented. "All that is required is a nutritious mixed diet as generous as can be digested and assimilated by the individual patient without producing putrefaction. It is advisable not to allow excessive meat, but complete deprivation of meat in persons who have long been accustomed to its use in large quantities is followed by loss of strength. In the light of Chittenden's well-known researches it ought to be possible to maintain patients on a relatively low quota of protein as long as other nutrients are supplied in reasonable amounts. Fifty grams of meat daily is enough for an ordinary person." (Sutter.) Sour milk, buttermilk, and kumyss give promise of being helpful in this connection. Some patients who have been kept for a long time on buttermilk diet have shown lack of appetite though their indican has disappeared. Hence it is advisable to give them a more variable diet. It is claimed that the calcium which is abundant in the buttermilk has a beneficial effect upon the bones. It has been shown by Goldthwait, Osgood, and Painter that the bones contain sixty times as much calcium oxide as magnesium oxide, and in these affecions of bone changes marked variations in the calcium metabolism was found. Therefore, some observers were anxious to introduce calcium into the system. But with the use of the calcimeter this fact can be utilized more intelligently. The blood should be examined with a calcimeter or where possible a careful metabolic study of the calcium should be made, and this element should be administered only when a deficiency is found. Calcium can be given in the form of buttermilk or calcium lactate, gram 1, t.i.d.

Some claim that carbohydrates should be reduced. On careful studies it has been found that the carbohydrate tolerance was pretty good in most of the patients and there is no use of reducing it unless the digestive system is disturbed. The use of raw apples, uncooked celery, spinach, and salads is detrimental only for purely mechanical reasons, but these substances have the benefit of helping peristalsis. Sutter claims that irritants such as pepper, mustard, salt, and vinegar should be excluded from the diet. But there is no reason for doing so.

A little alcohol before meals will do no harm to the patients.

(c) Climate.—Dry, uniform climate is beneficial.

(d) In the occupation, continued moistening of hands should be avoided, but ordinary housework is not harmful.

(e) Hydrotherapy.—Bathing is very useful. It increases the sources of eliminating toxins. Patients receive hot-air baths three times a week where they are kept in a closed box for ten minutes at a temperature of 200°–225° F. while the head is exposed and cold compresses are applied. This is followed by a douche of temperature 90° F., force 20 pounds. There is no benefit derived from keeping the patient too long in a water bath. This hot-air bath is of course more effective than the Turkish bath. In the former the patient does not inhale the hot air, since the head is protruding outside the box. The hot air causes perspiration, and thus eliminates a great deal of toxins. The douche acts as a general tonic. The spinal douche is especially advantageous in arthritis deformans of the spine where local treatment cannot be used extensively. Two of our patients have improved immensely as a result of this particular treatment.

Treatment of the Joints.—*(a)* Dry Hot Air—Baking is found to be very beneficial. Its effects are: (1) It provides an immediate and powerful stimulation of the vital physical parts, and (2) brings an increase of blood to the joint. If this is followed by massage the effect is doubled. An electrical hot-air apparatus especially constructed for each part of the body is best suited for this purpose. In this the joint well wrapped is kept for forty-five minutes at a temperature of 250°-

300° F. Other dry hot-air apparatus can be used with benefit.

(b) Hyperemia, both active and passive, produces good results. The action of the venous or passive congestion is, according to Bier, as follows: (1) It exercises an absorptive effect on the effused products of disease and on new formations that check joint motion; (2) It relieves pain and lessens the activity of progressive joint disease. Passive or venous congestion is attained by constricting the limb with several circular turns of a soft rubber bandage above the affected joints sufficiently to interfere with the return of venous blood but not with the arterial supply. When this is properly applied the joint becomes swollen and dark red in color. The local temperature is raised. This is what Bier calls "hot congestion," as distinct from edema—"cold congestion," that would result if the rubber bandage were applied too tight as to constrict the arteries (Whitman). The rubber bandages are applied for two or three hours daily, slowly increasing the time to nine hours. Finally, in addition the rubber bandages are left on for the entire night. Care should be taken to vary slightly the location of the rubber bandage near the joint for the protection of the skin. When Bier's passive hyperemia is applied before the massage it reduces the pain arising from the massage. Some use active hyperemia by emptying the blood from the limb by raising it, then applying a bandage at proximal end to stop the circulation, leaving it for one minute, then release it, thus producing hyperemia. This procedure is done once a day.

(c) Electricity.—The faradic or galvanic current seems not to produce any beneficial results on the joints. Perhaps some benefit is derived for the atrophied muscles. Static electricity, mainly the wave applied for fifteen or twenty minutes daily, may be used. Sparks may be applied over the spine and general muscular areas for their general effect but not in the acute stage. During the acute stage the static wave current may be applied. The effects of static electricity are muscular contraction, relaxation of muscular spasm, nerve stimulation or sedation, and similar effects upon glandular and circulatory functions and upon the intimate tissue processes. Glandular secretions are increased (Tousey). Some claim to have obtained good results from the high frequency current by applying it two or three times a week, using the spiral wire cage of d'Arsonval or the autocondensation couch (Snow). It has a tonic and sedative influence upon metabolism and the nervous system. Geyser claims that the high frequency current, when applied for thirty minutes to the joint, has a marked effect in stopping the pain.

(d) Massage.—This is the most useful item in treating this disease. It has been shown that the deformities of arthritis deformans are more marked in "well-to-do" people because these can afford to remain in bed and be supplied with all necessities by their servants. The result is that they become bedridden very early. The joints gradually become deformed and flexion is prevailing. The poor patients, on the contrary, have some employment as housework or finding means of subsistence and therefore are in constant motion and thus prevent deformities. The slight trauma produced by the constant maneuvering is not enough to forbid the continuance of daily work. Some physicians advise rest in bed, but according to the opinion of McCrae, Painter, and Goldthwait, only during the acute attack when the redness and inflammation are present, patients may be permitted to remain in bed. As soon as these have subsided, massage and exercise should be begun. We have had several cases in the hospital who were walking patients before an accidental intercurring disease which compelled them to remain in bed for a while, the result of which was that after recovery they could no longer walk around and had to remain bedridden. The deformities meanwhile kept on increasing. Patients usually object to the massage and exercises, as they cause pain, but if the confidence of the patient is obtained, there will be no difficulty in carrying out this part of the treatment.

Massage should not be given too vigorously, and two or three times a week is usually sufficient, and then only to the muscles and not much to the joint itself. While massaging, gentle kneading and circular movements over the joints should be given and more vigorous motions for the muscles above and below. The massage should be administered after some hyperemic measure. In institutions it is customary to give it after the application of hot-water bags, baking, Bier's passive hyperemia, hot-air boxes, or light baths. Patients can do a certain amount of massaging themselves, viz., kneading the hands, knees, and other available joints. This has a double value, for the fingers are exercised while the joint is massaged.

(e) Exercises must be insisted upon and should be begun as soon as the signs of acute inflammation have subsided. Active and passive movements are of great advantage. It is quite hard to induce the patient to do the exercises which really cause pain, but the physician must use his utmost influence to persuade his patients to continue it regularly. Most of them are neurotic, and with these such advice is easier given than followed. With older patients, especially women, this persuasion is more difficult.

The benefit of the exercise can be summed up as follows: (1) It increases the nutrition of the joint; (2) It diminishes the risk of ankylosis and muscular atrophy; (3) It lessens the tendency to contractures. The best proof of the benefit of exercises is shown in the temporomaxillary joint: this, according to McCrae, is often affected, but no ankylosis results because of the constant use of this joint while eating and talking. We had one patient, aged fourteen, who was afflicted with this disease for the last seven years. She was by nature too quiet and spoke very little. As a result, her mandibular joints were affected. She was made to talk and engage in conversation with the other children. The result of this peculiar treatment was successful.

For carrying out the exercises systematically, Zander's or other scientifically constructed apparatuses are the most proper for this purpose. But in the absence of these, one must use his own judgment and properly arrange ordinary exercisers used in gymnasiums. For the hips pulleys attached to the ceiling, the joints being stretched by halters pulled by the patient himself may be used. For passive exercises of the hip, the rocking chair is of advantage. The fingers are exercised by pressing a rubber ball purposely punctured in order to allow a better grasp. The patient should be urged to walk as early as possible.

(f) Prevention of Deformities.—This should be the main aim of the physician. In order to obtain this, exercises are the best means. Great effort

should be taken to prevent contractures, mainly in the elbows and knees. If there is a tendency to great contractures, it is advisable to put the limb in a splint for part of the day or use a light extension for some hours each day. The contracted limbs may therefore be stretched or extended by means of pulleys for two to three hours daily, whereas at night plaster splints may be applied. Of course the reason for applying the latter is to prevent involuntary contractures of muscles during sleep. But care should be taken not to leave the joints in plaster for several consecutive weeks without allowing exercises, since ankylosis is the result.

(g) Treatment of Deformities When Present.—The use of exercises on the various machines will greatly correct some of the deformities. Careful and forcible straightening of the joints will be of great value. We have been successful in straightening some fingers that had been in a contracted position for many years.

(h) Operative.—Much discussion is going on among the various observers concerning this method. Hoffa, Painter, and others are opposed to forcible breaking down of the adhesions, claiming that ankylosis will return and it may result in a worse condition than previous to the operation. The reason for their objection is that the histological phenomena presented by the joint changes in arthritis deformans are those of degeneration rather than of inflammation. This is to say that the reparative and absorptive powers of the joint structures are greatly impaired in this disease. So that traumatism not being susceptible of normal repair might, through the irritation, result in the formation of more fibrous tissue and ultimately denser adhesions. McCrae, on the other hand, thinks that brisement forcé under anesthesia is advantageous, but the joint must not be left immobile. Passive motion should be begun within twenty-four hours. Shortening of the hamstrings may require a tenotomy, but it is advisable not to leave the joint in plaster for a long time. Occasionally arthrotomy may be necessary to rid the interior of the joint of villous thickening. Some advocate the injection of oil into the cavity of the knee to aid increase of movement. Some advise excision of a joint, and Albee has advised an operation for arthritis deformans of the hip. We have many times broken up joints by means of brisement forcé and so far had no bad results.

Medicinal Treatment.—Antirheumatics should be avoided, as these harm a great deal by upsetting the digestive system and increase the joint symptoms. Herter claims that aspirin and salol act favorably, for they are intestinal antiseptics. Tincture of gelsemium is also useful to alleviate the pain, but the pain can be arrested by the above-mentioned measures without any medication. Some have claimed good results from thyroid extract (Skinner). We have tried it for a long time, using the extract from a reliable source and obtained very little beneficial result. It is good for cases where an atrophy of the organ is present and the patient presents definite symptoms of the thyroid disturbance. Thymus, which is advocated by Nathan (0.3 gram t.i.d.) may be useful. We have not used it. Guaiacol carbonate, in increasing doses beginning with 0.2 gram, together with syrup of iodide of iron, 2 c.c., is claimed by Baumatyne to bring good results.

Radium Emanations.—We have given as high as 20,000 units for six or seven months. The solution was freshly prepared before using, but no benefit has been derived from it. Those patients who had gouty tendencies had their pains slightly relieved. The enlarged glands and tophi were diminished. This was reported by S. Wachsmann at a meeting of the Medical Association of Greater City of New York in April, 1910.

For local application on the knees or other joints where the pain is severe and the skin is tender, any ointment answers the purpose; ichthyol (25 per cent.) seems to be the best. An ointment containing chloral hydrate, gram 20; camphor, gram 20; strammonium in lanolin base, gram 60, is also used occasionally. Vaccine treatment is still in the experimental stage.

Résumé.—Each patient as soon as he enters the Orthopedic Department has his casts, *x*-ray of the joints, and photograph taken, and a careful description is made of the joints so that a good record of the changes can be kept. Then a careful examination for place of entrance of infection is made. The digestive tract is examined by means of stomach and duodenal tubes, and radiograms of the tract, after a bismuth test, are taken. The place of infection is treated if possible. Any disturbance of the intestinal tract is corrected. Then, if acute symptoms are still present, the patient is allowed to be at rest for two or three weeks, during which time his joints are kept warm and local applications applied. The diet is very carefully regulated and enemata or colonic irrigations are given twice or three times a week. After that time the following treatment is administered: Baking followed by massage three times a week, "steam boxes" on the intervening days, light baths twice a week, Bier's passive hyperemia for six to twelve hours daily besides being left on for all night, enemata twice a week, static electricity three times a week, exercises daily.

If patients are not in the acute stage the place of infection is cleared up if possible, then the regular treatment is begun, the diet being regulated at the same time.

I am greatly indebted to Dr. George R. Elliott, under whose direction most of these observations were made, and to Dr. S. Wachsmann, the Medical Director of the Montefiore Home, for his kind assistance in this work.

BIBLIOGRAPHY.

1. Allbutt's "System of Medicine," 1910.
2. Albee, Fred. H.: "A Further Study of a New Operation for Arthritis Deformans of the Hip," *Surgery, Gynecology and Obstetrics*, March, 1910.
3. Goldthwait, Painter, and Osgood: "Report of a Series of Metabolism Observations Made in Atrophic Arthritis, Etc.," *American Medicine*, April 2, 1904.
4. Goldthwait, Painter, and Osgood: "Diseases of Bones and Joints," 1910.
5. Geyser, A. C.: "The Why and the How of the High Frequency Current as a Therapeutic Agent," *Journal of the Medical Society of New Jersey*, 1911.
6. Nathan, P. W.: "Differential Diagnosis of Diseases Hitherto Grouped Together as Rheumatoid Arthritis, Etc.," *American Journal of the Medical Sciences*, December, 1906.
7. Nathan, P. W.: "The Nature, Diagnosis, and Treatment of Metabolic Osteoarthritis," *American Journal of the Medical Sciences*, June, 1909.
8. Osler's "System of Medicine," Vol. VI, 1909.
9. Skinner, C. E.: "The Treatment of Arthritis Deformans," *American Journal of the Medical Sciences*, November, 1910.
10. Sutter, C. C.: "Relation of Intestinal Toxemia to Chronic Joint Diseases," *New York Medical Journal*, Feb. 24, 1912.
11. Snow, Wm.: "Static Electricity," 1909.
12. Tousey, S.: "Medical Electricity," 1911.

13. Whitman: "Orthopedic Surgery," 1911.
14. Boorstein, S. W.: "Abstract of Treatment of Arthritis Deformans in Montefiore Home," *Medical Record*, Feb. 10, 1912.
15. Wachsmann, S.: "The Use of Radium Emanations in Internal Medicine," in Year Book of Medical Association of Greater City of New York.

1227 Boston Road.

KERATITIS NEUROPARALYTICA AFTER REMOVAL OF THE GASSERIAN GANGLION.

By WALTER BAER WEIDLER, M.D.,

NEW YORK.

Trifacial neuralgia is a painful affection of the fifth or trigeminal nerve, generally due to some form of toxemia or traumatism. The exact lesion is a neuritis or degeneration, usually ascending, affecting any part of the nerve or its nucleus. Bernhardt says that in 66 per cent. of the cases of trifacial neuralgia, it is the first trunk or the ophthalmic division that is involved, but in a small number of the cases the whole distribution of the trigeminus may be affected. Keratitis neuroparalytica is a very serious condition affecting the cornea, often seen after gasserectomy. The operation of gasserectomy is performed for the relief of the condition spoken of as trifacial neuralgia or *tic douloureux*. Most serious complications involving the eyes often follow this operation, and it is with these affections that my paper has to deal, but more especially the neuroparalytic keratitis. Keratitis neuroparalytica following this operation is far more frequent than we are led to suppose from a study of the literature. A great number of these patients develop this affection months and even years after the Gasserian ganglion has been removed. One of the cases reported in this paper is an example of the keratitis coming on a year after the operation. If it were possible for us to keep accurate records of these patients for five years after the ganglion has been removed, I am sure that there would be a much greater number of such cases recorded, and that the percentage of serious eye complications after the removal of the ganglion would be much higher than our present statistics show. It is with this thought in mind that I raise the questions: Is not his loss of eyes unnecessary? Secondly, is it not possible to give the same relief to these patients without the great danger to life by some other form of treatment than the surgical? The medical treatment of trifacial neuralgia has been and is still very unsatisfactory, unless the neuralgia is migranous in origin. Dana has tried the injection of strychnine in 15 cases and concludes that in those cases of facial neuralgia, extending over a period of one or two years, the treatment will invariably arrest or control the disease. In cases that have lasted over six years, and in those cases with neuritis and sclerosis, the results are doubtful, and there may be failures and remissions. In cases extending over 15 or 20 years, the treatment is of no avail. It is well to note that there was not a single eye affection in any of his series.

For the past ten years much attention has been paid to the value of the alcohol injection of the trigeminus nerve and its branches. From the various papers that have been written on this method of treatment, one is impressed with the safety and ease with which it can be done. The relief from terrible pain and agony that is afforded these unfortunate patients and the almost complete absence of the eye lesions make it a duty for the ophthalmologist and surgeon to advise this form of treatment in trifacial neuralgia. Patrick (*Journal of the American Medical Association*, 1912), after the treatment of 150 cases by the alcohol injection method, says that it does not cure, but that there is nothing that does cure this condition except a perfectly executed gasserectomy, and unfortunately these are very rare. The alcohol injection is effective immediately and the relief may last from six months to four years and is effective in cases that have had the cutting operation previously. It is not a dangerous procedure, not a single fatality being recorded. He has only seen two eye complications follow this method of treatment and these were paralysis of the sixth nerve, and a simple keratitis. Both conditions cleared up under treatment. It is especially valuable in the very old and feeble who may have other grave diseases. The use of alcohol injections does not in any may make a gasserectomy any more serious or difficult. Blair (*personal communication*) states that he has treated 70 cases with the alcohol injections, and answers the question in this manner: "As to the comparative value of the extirpation of the ganglion and the deep injection of the trunks, I am convinced that the decision is decidedly with the latter. The patient more willingly submits to the injections, and the resulting paresthesias and anesthesias last as a rule less than six months and the patient is disabled but a few days. With the exception of one case there was no corneal disturbance and no eye protector was worn. In the majority of the cases relief from pain lasted from eighteen months to two years. In some of the cases it has been shorter, while in many there has been no return of pain. In one of these latter the injection was made five years before; this patient having been a sufferer for nine years previously. In every instance, so far as I know, the relief has been again obtained by reinjection." His cases were carefully selected and there was no doubt as to the diagnosis. The patients were carefully examined by the oculist, rhinologist, and neurologist, and it was due to this great care in making the diagnosis that he ascribes his good results.

Campbell (*personal communication*) says that he regards deep injection of the first and second branches detrimental to the eye. In one case that had received three deep injections of the second branch the patient had a progressive deterioration of the eye and at present very little vision. He does not state how many cases he has treated by this method. Keller (*New York Medical Journal*, 1911) reports his findings in 48 cases of the alcohol injections after the method of Levy and Boudanin, extending over a period of three years. He concludes that successful injections or series of injections are followed by relief for about the same length of time as that following the first resection of a peripheral nerve. Reinjections give a longer period of relief than repeated resections. There was not a single case recorded in this number where there was a serious eye complication. In one case the patient complained that her eye troubled her very much, and in another case a purulent conjunctivitis developed a few days after the injection. Bodine and Keller (*New York Medical Journal*, 1909), report twenty cases and state that "after a study of our own cases, few in number though they are, together with the cases reported by Kiliani, Hecht, and Patrick, we believe the accumulated experience justifies a favorable verdict in behalf of

the deep injection as a successful palliative treatment in *tic douloureux;* and we believe after careful study of the interesting figures of Schloesser's, together with those submitted by Ostwalt, Levy and Boudanin, that we are entitled to agree with the summary of Hecht: (1) With the pathology of trifacial neuralgia still undetermined and the operation of gasserectomy expedient only in desperate cases and as a last resort, interest in the intraneural injection of alcohol is justified. (2) Alcohol in dilutions of 70, 80, and 90 per cent. appears in clinical trials to be the best remedy in all cases with painful paroxysms of *tic douloureux.* (3) The prognosis of cure in a permanent sense from a single injection is not good. Prognosis in the sense of complete palliation after one or several injections is excellent. Recurrences, however, are to be be expected anywhere from six months to a year." Kiliani (*New York Medical Journal,* 1908), reported 55 cases treated by the Schlosser method of injection and states that it was successful in 52 cases, and further says that he considers it the most efficient form of treatment because it permits of repetition when recurrence appears. In the hand of experienced operators alcohol injection is a comparatively simple operation and practically free from risk.

The surgical treatment of this condition is not to be regarded as a cure, because in many of the cases where gasserectomy has been most successfully performed the pain has returned. What concerns us more is the danger to the eye; and in many cases where gasserectomy has been done keratitis neuroparalytica occurs with the subsequent loss of vision and the eye. This most unfortunate accident happens too frequently, therefore we should consider well before we advise this form of treatment for the relief of this most dreadful disease. Cushing (*Journal American Medical Association,* 1905) reports a series of cases and reviews very thoroughly the grave dangers to the eye after gasserectomy. "Of importance above all others are the postoperative ocular complications, which, since the first attempts to remove the ganglion, have been a great cause of concern to the surgeon. It has been shown, alas, too frequently, that from one cause or another an enucleation of the eye may eventually be necessary, and it is wise to have an understanding with the patient and friends that relief from pain may demand such a sacrifice. Twice in his series of twenty cases this was necessary, and there were a number of serious forms of keratitis and paralysis of different ocular muscles, external and internal. He claims that neuroparalytic keratitis, as a result of the ganglion extirpation, need never occasion anxiety if proper precautions are taken to guard the eye, particularly for a few weeks following the operation. He believes with Hanan, who made a series of experiments in 1890, that all changes of the cornea after trigeminus paralysis are only a consequence of external influence on the eye, unprotected through its loss of sensibility, and that this applies as much to the slight initial lesion, an especial consequence of dryness, as to the extreme degree of keratitis. In regard to the cessation of secretion of the lacrymal gland there is also added danger, but Cushing thinks that the glandular activity returns after two or three weeks, and this may be explained by the gland being activated by fibers from the facial nerve through the great superficial petrosal. The contracted pupil after a few days does not dilate with cocaine, evidencing, according to Schultz, that degeneration of the postganglionic fibers has reached the dilator muscle. With regeneration of these traumatized or divided sympathetic fibers, lacrymal secretion returns, the pupil regains its normal size and the enophthalmos, if it is observed, disappears. The oculomotor palsies have occurred with great frequency when the ganglion is removed *in toto,* but they generally clear up. The commonest sequel is injury to the abducens, and this is explained by the anatomical proximity of this nerve to the upper edge of the ganglion. The pupillary miosis remains for an indefinite period. The pupil reacts to light and accommodation; when eserine is dropped into the eye the pupil contracts; atropine will dilate it. Krause reports that there were no postoperative changes seen in the pupil in any of his cases. Cushing concludes with the statement that from his clinical experience one very naturally inclines to the view that purely traumatic influences or the combination of corneal dryness with infrequent (xerotic theory) or incomplete closure of the lids alone play a part in the causation of corneal inflammation, and that the pure trophic and trophotraumatic and vasomotor palsy theories are hardly tenable for the keratitis neuroparalytica that results in many of these cases as a postoperative sequence. Frazier (*personal communication*) says that from his findings of his series of 50 cases, there were two cases that had serious keratitis following the operation. One of these two cases was Mrs. M. (Case III); the other was a farmer, and I will add a third, Mrs. Y. (Case II). He thinks that keratitis develops more frequently in the removal of the ganglion than after section of the sensory root. He believes that there are trophic centers in the ganglion itself. A great deal depends upon the attention and care given the patient after leaving the hospital. The slightest evidence of trophic disturbances long before there is anything like ulcer formation, should be treated by immediate closure of the lids, and in this precaution we find that Horsley and Keen are in accord. Cushing uses the Buller shield and claims that this is the better method of protection. Frazier thinks that the tendency toward trophic disturbances is very much greater immediately after the operation than at any subsequent time, and if every precaution is taken and the case is kept under continued observation until the critical period is past, corneal disturbance will be a very rare occurrence. Deaver (*Journal American Medical Association,* 1909), in an article on the surgical treatment of trifacial neuralgia by gasserectomy, says that a word must be spoken of the distressing complication which is apt to follow, even when the operation has been well performed and proper care has been exercised by the surgeon, namely panophthalmitis. He recommends the suturing of the lids or the use of Buller's shield as protective measures after all operations for the removal of the ganglion.

The cases of neuroparalytica keratitis after gasserectomy are usually of the most severe form that come to our notice. There is often a gray opacity seen in the center of the cornea, with later a slight depression. The epithelium over this area is exfoliated, and we often have an ulceration following. This loss of epithelium is usually central, but the ulcer may spread to the periphery of the cornea, leaving always a small portion remaining at the corneoscleral margin. The stroma becomes clouded and opaque and later yellowish and this is followed by the formation of a hypopyon. The cornea may

in the graver cases be invaded by the purulent process, so that there may be perforation and prolapse of the iris. In some cases general panophthalmitis is set up with phthisis bulbi, completing the picture. In other cases the process is not so serious and a partially useful eye is retained. The prognosis should be set down as very unfavorable. The course of the disease is rather slow and there is always slight conjunctivitis and ciliary injection. There is little or no pain in the early part of the keratitis, but later when the process extends to the anterior chamber iris, and ciliary body the pain may become quite severe.

The cause of neuroparalytic keratitis has been a subject that has engaged the attention of the ophthalmologist, neurologist, and pathologist for years. It was Magendie who found through his experiments with rabbits that injury to the trigeminus nerve would produce a keratitis and this is the condition which we now call neuro- or trophokeratitis paralytica. As has just been said the neurotropic theory of Magendie is the result of his experiments and he concluded that this was so from the fact that there were trophic fibers running from the Gasserian ganglion to the corneal epithelium through the fifth nerve and ending in filaments of the ciliary nerve. These experiments of Magendie were later confirmed by work done by Bernard and Gaule. It was further shown that when the ganglion was cut or injured neuroparalytic keratitis resulted, but if the fifth nerve alone was cut there was only corneal anesthesia produced. These experiments were supported by the clinical observation of von Greafe, who also attaches great importance to the absence of tears as one of the causes of the keratitis. The trophic and traumatic hypothesis has been held to be the most satisfactory explanation by Parsons, Head, Sterren, and Wilbrand and Sanger. They all admit that there are such trophic nerves in the corneal epithelium and that these nerves play an important part in the protection and safety of the cornea from foreign bodies and accidents. They insist that there must be a central distribution of the nerve roots or ganglion cells to explain the keratitis. The vasomotor theory does not find many supporters. It is claimed by some that after removal of the ganglion there is noted a vasoconstriction of the vessels of the eye, more marked in the pericorneal region (Spalitta). Seydel includes four phenomena in the production of this form of keratitis, namely, vasomotor changes, corneal anesthesia, a paralysis of the sympathetic, and a trauma, all these being necessary for the keratitis and ulceration. Senftleben and Snellen believe that if the eye is properly protected the keratitis would not occur. This we know is not true because we have seen keratitis follow when there was ptosis, and when the eye has been protected by artificial means. The desiccation theory is based upon the claims that the diminution of the secretion of the tears coupled with the less frequent winking of the lids the corneal epithelium becomes dry, and foreign bodies are no longer removed from the cornea, and in consequence necrosis of the corneal epithelium follows, with ulceration. Davis and Hall have made a number of experiments with monkeys, observing the growth of bacteria after injury of the Gasserian ganglion and the trigeminus. They found that they were able to demonstrate the presence of a certain bacillus which they have called *X*. This bacillus was found in 30 per cent. of normal eyes, but was found in all the patients who had neuroparalytic keratitis together with streptococci. In the cases where keratitis did not develop after the removal of the ganglion the bacillus was not found. They therefore conclude that they are justified in suspecting that the presence of the bacillus in the sac is necessary for the production of neurotrophic keratitis.

It will be readily seen from our study of the various causes that have been advanced that all of these different conditions do not exist in all of the cases of keratitis neuroparalytica. Paralysis of the trigeminus or removal of the Gasserian ganglion with trophic disturbances should be regarded as the cause and the absence of the lacrymal secretion; the presence of a foreign body, anesthesia of the cornea, and the presence of some bacteria of suppuration should all be considered as contributing causes or factors. It is not necessary for all of these last named to be present to have this form of keratitis develop, but one or more of these factors are usually present in every case of neuroparalytic keratitis.

The two cases that are reported in this paper are examples of this form of keratitis after the removal of the Gasserian ganglion.

Case I.—Mrs. H. M., aged forty-eight, white, history of trifacial neuralgia of the right side of the face for the past five years. Was treated for the "tic" by the injections of alcohol and had gotten relief from the pain for eight months. On May 12 was operated on for this condition and there was removed the Gasserian ganglion. Three days after the operation patient found that she was unable to open the right eye. The ptosis gradually improved, however, and when I saw her October 10, 1909, the condition of the eye was as follows: partial ptosis, some injection of the bulbar and tarsal conjunctiva the cornea was anesthetic but clear and smooth. In about ten days the cornea showed the presence of a small central ulcer and this condition increased. The eye felt dry and the patient said that when she cried she found that there were no tears in the right eye. *Treatment*—Boric wash, atropine, hot compresses, protargol ointment, and a compress bandage. Arsenous acid was given internally. A very unusual complication was noted at this time. The patient had been out in the cold and on coming into the house she sat close to the stove to warm herself, holding her head near to the stove to warm her face, which was colder than the rest of her body. A few days later she noticed a sore spot over the forehead above the right eye. This became a most distressing neurotrophic ulceration of the scalp. There was loss of sensation for touch and pain over most of the right side of the face, but the sensation for heat and cold was intact. March 30, 1910, the lids were swollen and the ptosis was about the same as when first seen. Profuse mucopurulent discharge and marked injection of the conjunctiva and the ulceration of the cornea involved one-half of its diameter. The ulcer was deep, extending into the stroma and a large hypopyon was seen in the anterior chamber. Iritis and cyclitis with the pupil partially dilated and filled with exudate. Vision was reduced to counting of fingers at one foot and tension was minus one. On October 6, 1910, the skin over the right side of the face was more sensitive to pain and touch. The acute inflammatory symptoms have all subsided, the ptosis remains, and there is also a large leucomatous opacity involving one-third of the center of the cornea. The eye seems to be shrinking and

the iris is atrophic and the pupil shows remains of the exudate. Light perception and projection good. Wassermann was negative as was also the urine. Dr. Frazier tells me that this was the first time that he had seen this complication after the removal of the Gasserian ganglion. In his letter he describes the operation briefly as follows: "The injury to the nerves adjacent to the ganglion was the result of an accident which was quite unlooked for. Just as I was about to pick up the sensory nerves with a special hook which I use for this purpose, the patient's head moved and the hook became entangled in the nerves, which have since been affected. In extracting the hook I exercised the greatest care and thought I had been successful in avoiding any injury to the nerves. The ptosis and the ocular symptoms which developed shortly after the operation I had hoped would be of only a transitory nature." The last time that I saw this patient was on March 26, 1912, and at that time the ptosis was slightly improved. She told me that she massaged her face and eyelids every day and this may account for some of the improvements noted. The superficial vessels of the lids were distinctly engorged and dilated. There is still the complete absence of tears and the corneal epithelium is dry. The lower half of the cornea is opaque from the infiltration and leucoma formation which is penetrated by several blood vessels. There is always some slight injection of the conjunctival vessels above and below the corneacleral margin. In the center of the pupil, which is small, there is a white opacity which appears to be an anterior capsular cataract following the inflammation. Tension is normal, iris reacts to light in the upper half, and the vision is fingers at four feet. Patient complains most bitterly of the sensation of pain and heaviness over the upper part of the face and temple. The eye is painful at times and there are frequent recurrences of inflammatory attacks, when the pain is quite severe. The pain over the lower half of the face has been almost entirely relieved by the gasserectomy, but the patient is most decided in her statement against the operation. She regrets extremely that she ever had the operation performed and is very sorry that she was not advised to be satisfied with the relief that she could have had from the alcohol injections.

Case II.—Mrs. M. Y., aged fifty-eight, came to see me on account of severe facial neuralgia, telling me that she had been treated for this condition for over a year without any improvement. No injection of alcohol; only medical treatment. An operation was performed on March 4, 1909, and the Gasserian ganglion was removed. The operation was quite successful as the neuralgia was relieved. There were no changes seen in the eye, but she was advised to wear a shield over the right eye, which she did for several weeks. She reported at my office for about two months, making weekly visits, and during that time there was no irritation of the eye whatsoever. The eye remained quiet for over a year. She was given glasses for constant wear shortly after the operation. August 24, 1910, she came to see me, complaining of some pain and distress in the right eye. This condition had existed for a week, during which time she had no treatment. The lids were swollen, there were rather free discharges and a marked injection of the bulbar and tarsal conjunctiva. There was a central ulceration of the cornea involving about two-thirds of the cornea. The stroma underneath was grayish and there was a small hypopyon forming in the anterior chamber. The iris was discolored and there was partial synechia, as the pupil dilated irregularly under atropine. Vision was reduced to fingers at three feet. Patient complained of considerable pain in the eye and temple. Treatment consisted in the use of boric acid wash, atropine, dionin, and hot compresses. Tonics were given and later a compress bandage. The progress of repair was very slow and the woman was compelled to work for her living and was not willing to wait for months for a cure to be effected, and with the expectation of a useless eye in the end she urged me to operate, and the eye was enucleated after five months of treatment.

Pathological study of the eye revealed the following conditions: Macroscopic section of the eye shows very nicely the area of ulceration of the cornea with attempted repair. The ulcer was about 10 millimeters in diameter and seems to have not only involved the corneal epithelium but Bowman's membrane and the substantia propria. The cornea is hazy throughout and the anterior chamber is of a good depth. No deposits seen in chamber, the iris is grayish in color, showing the presence of the hypopyon and the inflammation that had accompanied the keratitis. The lens is in position, showing some senile changes. There is also some absorption of the chorioidal pigment at several places. Miscroscopical examination showed the corneal epithelial layer normal and intact around the limbus and extending toward the center of the cornea for about one-fourth of the corneal diameter. The rest of the corneal epithelium has been greatly changed by the ulceration, being entirely absent in the center together with Bowman's membrane. The stroma proper in the center is also destroyed and there is an attempt at repair. The outer layer consists of long flat cells, one or two thick and directly underneath these cells is a homogeneous layer, rather dense, straining deeply with eosin. Directly beneath this tissue are more cells that are round and polyhedral in shape. Bowman's membrane is absent over the center. In the lamina propria near the corneascleral margin, limited to the one side, are seen several new blood vessels, besides, the invasion of lepcocytes is here seen. Descemet's membrane and the endothelial layer are undisturbed. The sections that were cut first did not show any of the hypopyon. The iris tissue presents foci of round cell infiltrations and also the loss of the pigment layer around the pupillary edge showing the presence of the synechia. A section at a lower level shows the angle well filled with leucocytes, pus cells, and fibrinoplastic material. The cellular infiltration has extended to the ciliary body but no further into the eye.

This review of the work done by Patrick, Hecht, Kiliani, Bodine, Keller, Blair, and Schlosser with the alcohol injections for the relief of trifacial neuralgia, with the great alleviation of the pain, and the almost uniform freedom from any serious eye complications makes it appear to be the most satisfactory and safest form of treatment. It should always be advised in all cases of "tic douloureaux" not only as the first measure in the treatment, but in nearly all of the cases as the only form of treatment. It should be persisted in even if it does become necessary to give repeated injections, because of the great ease of performing the injections and the comparative freedom from any dangerous complications following and the absence of any mor-

tality in its performance. The consensus of opinion of the following eminent surgeons, Cushing, Deaver, Horsley, Keen, and Frazier is that the removal of the Gasserian ganglion is an extremely dangerous and difficult surgical procedure requiring extraordinary technique and skill. The mortality rate is from 5 per cent. to 50 per cent., depending on the individual surgeon's training and ability in the performance of brain surgery. Destructive neuroparalytic keratitis follows many of these operations with the ultimate loss of the eye. It is quite true that many of these patients who are in the throes of trifacial neuralgia are willing to sacrifice an eye with the hope of relief from pain, but it may be possible that with further perfection of the technique and the additional knowledge that will come from our study of the alcohol injection method we may see the time when the operation for the removal of the Gasserian ganglion will be no longer necessary. Thus a comparative study of the value and merits of the alcohol injection and gasserectomy has shown that the patient is assured of relief from pain for a varying period of time lasting for six months and in many cases for years. Furthermore there have been over three hundred cases of alcohol injections reported in this paper and in only one case was there a serious form of keratitis that followed, whereas in the seventy cases in which gasserectomy had been performed neuroparalytic keratitis followed in a considerable number of the cases and in four cases enucleation was done as a final resort for the relief of the distressing symptoms which were directly caused by the operation.

62 West Fifty-eighth Street.

THE DIAGNOSIS OF GALLSTONES.

By W. D. HAMILTON, M.D.,

COLUMBUS, O.

The bile leaves the liver through the right and left hepatic ducts. Their union forms the common hepatic duct, and the latter continues as one trunk to the duodenum. At the level of the beginning of the cystic duct it receives the name of the common bile duct. Therefore, the biliary mainline is made up of the common and hepatic ducts. It directly conveys the bile from the liver to the gut, the gall-bladder and cystic duct forming a biliary switch, where the conditions for gallstone formation are most favorable. Though in many of the cases no form of etiological bacterial invasion seems to have been shown, a previous history of typhoid has appeared in a considerable number of the cases.

While gallstones generally form in the gall-bladder, they may develop anywhere in the biliary tract. They may originate in the intrahepatic ducts, and stay there for an indefinite time; and they probably form at times in the common and hepatic ducts. Should their presence in the intrahepatic ducts produce irritation, the vitality of the tissues about them may thus be lowered. If through the lymphatics or blood vessels of the part an infective process were to arise, suppuration might be the result.

Stones which have begun in the gall-bladder may increase in size after having secured the shelter of the common duct. The bile ducts have sufficient resiliency to favor, in some degree, the passage of concretions. Under infective influence their walls may soften and stretch. This is especially observable in the common duct when it contains concretions. Under these conditions the size and lumen of the duct may be greatly increased. When incised, the examining finger can often be inserted into the choledochus. In fact, in chronic cases—usually where very large stones have found lodgement—it may even look like intestine. No doubt the stones are often responsible in a measure for the changes described. As is the case in other parts of the body, stricture or obstruction from any source is liable to be followed by dilatation above the seat of it. Likewise, ulceration and suppuration are prone to occur from these foreign bodies therein contained.

Upon dividing at operation the adhesions about the gall-bladder, an old perforation is occasionally shown, or a cholecystenterostomy which nature has made may be displayed. Angular or sharp stones would favor its occurrence. All such operations should be done under inspection, through a free incision. The want of this precaution may result in the sacrifice of a life. An opening may be found between the gall-bladder and duodenum, or between it and the stomach, or the colon. Such openings call, of course, for repair after removing the concretions. Stricture of the cystic duct may call for the removal of the gall-bladder.

Not often will cancer of the organ be seen early enough to make thorough removal practicable. That cancer of the gall-bladder may occur is the natural result in some gallstone cases where their irritative effects have been at work for years. Routine removal of the gall-bladder is objectionable, as the organ may in after years be badly needed. In five-eighths of the cases the common duct passes through the head of the pancreas—in the remainder it traverses a groove on its under surface—thus, swelling of the head of the pancreas, if of sufficient intensity, will choke the choledochus in the cases in which it passes through instead of behind it, causing obstructive jaundice. In chronic interstitial pancreatitis, or in stricture of the common duct, the bile may be unable to get from the liver to the gut, and cholecystenterostomy may be necessary to save life. In a case of this kind, with a pervious cystic duct, even the proximal portion of the gall-bladder, if left, may be invaluable in an operation for short-circuiting the bile from the liver to the gut. Unless leaving the gall-bladder will make the patient liable to sepsis, colics, or cancer, or unless it has become gangrenous or irreparably perforated, or has been converted into a useless cicatricial mass, a good deal of conservatism may be justifiable before removing it.

The ordinary landmarks within which deep palpation is practised in search for gallstone disease are described by an irregular triangle. Its angles are formed by the ninth right costal cartilage, the ensiform process of the sternum and the umbilicus. If the liver were from any cause greatly enlarged, or if it were from hepatoptosis actually located at a much lower level than normal, the triangle sketched would not be of much use. The gall-bladder will be more liable to be palpable, if it be either enlarged from obstruction at or in the cystic duct, or if its walls be thickened, or if it be packed with stones. It is, however, the presence of tenderness on deep pressure that will tend to rivet one's attention to the gallstone idea, especially if a tumor be even vaguely felt in the gall-bladder region. In looking for such, one will naturally first employ pressure—after deep expiration—close to the right costal margin, and then along the lower and outer side of the triangle. In common duct gallstone cases, or in enlargement of the pancreas, especially

the head of the organ, palpation may be more apt to elicit deep-seated tenderness along the lower fourth of the inner, or median, limb of the triangle above described, or just at the outer side of it, but still within its limits.

The passage of gallstones through the cystic duct is more painful than through the common duct. The pain of such an attack ordinarily originates near the right costal margin. In its implications and behavior it is usually a right-sided affair. It may, however, be referred to the pit of the stomach, or to the right subscapular region. Where it is referred to the left side, it may be due to adhesions between the gall-bladder and pylorus.

In appendicitis, the fact that the pain is usually referred first to the navel and later to the right iliac region, with the frequent confirmatory evidence offered by an apparently more or less vague induration at or near McBurney's point or somewhere in that region, is generally sufficient to enable one to differentiate the two conditions. Its occasional unsually high location, even near the gall-bladder or right kidney, may give rise to doubt which only an exploration will disclose. Meanwhile, its possible location in the pelvis, or right loin, may have been excluded by negative preoperative findings in the search for it.

To distinguish gallstones from ulcer—either gastric or duodenal—certain points should be borne in mind. The pain of ulcer, unless perforation has occurred, is less severe than that of biliary colic, and is more responsive to the use of opiates than is that from the attempted passage of gallstones. Hyperchlorhydria may be present in both cholelithiasis and ulcer. This, in fact, tends to suggest certain diagnostic limitations of gastric analyses, which derive their value largely by association with other collected data in the investigation of cases. More relief to the patient can often be given by lavage and starvation, as Ochsner suggests, in biliary colic than from anodynes alone. The pain of ulcer is more liable to bear a kind of periodical or habitual relation to mealtime than is true of cholelithiasis.

Renal colic deserves passing notice. Pain from loin to groin, and to testicle or labium, may invite attention to the frequency and character of the urinary discharges. One does not like to give the patient a Jordan Lloyd jab in the kidney region. Even a light one though may elicit the sharp characteristic, sword-like pain of renal calculus as testified to by the patient perhaps only too frankly. The importance of saving the urine, for a time at least, for inspection in such a case was shown on one occasion in the writer's experience many years ago, when having planned to make a lumbar section, if still called for, the patient was found next day to be greatly improved. He denied having passed a calculus. Fortunately the urine had been saved. Nothing appeared to the sight but purulent urine, but upon carrying a finger through the creamy fluid a calculus was felt. It was seven-eighths of an inch long and looked like a fragment of an old-fashioned slate pencil. The absence of blood, pus, or sand in the urine, or its negative microscopical appearance, may tend to exclude renal or ureteral calculus. The Roentgen rays may here be invaluable—the more the pity that we cannot rely upon skiagraphy in cholelithiasis.

Jaundice has no doubt too often been waited for to clinch the diagnosis of gallstones, but if it be at any time associated with a case in which there are stones in the gall-bladder and cystic duct only, it must arise from an extension of the catarrhal process in those parts, to the common duct, with some inflammatory swelling of the duct, with resultant encroachment upon its lumen. Jaundice may occur in such a case, but to produce it there must be some obstruction on the mainline, whatever its character. Stones in the common duct, thickening of the head of the pancreas, cancer of it or of the common bile duct, stricture of the latter, or cicatrization of a duodenal ulcer so located as to close the orifice of the common bile duct are to be thought of in explaining jaundice.

One must, however, consider with an open mind the subject of gallstones. Jaundice is quite liable to be present—intermittently at least—in common duct cholelithiasis, and may in such cases be deep and persistent for weeks or months. When it is so deep and persistent one should always consider the possibility of cancer or chronic pancreatitis. But the surgery which is especially to be cultivated is that which is so timely as to be used in the absence of jaundice.

There is no latent period of gallstones. The story of an octogenarian at whose autopsy gallstones were found, there having been no evidence at any time of their having done harm, is no longer so credible to surgeons as it used to be. The symptoms are generally there if we are clever enough to find them. Where we have found them at operation, unsuspected by us beforehand, symptoms to account for them have not been hard to dig up.

It is the function of the bile to assist the pancreatic fat-splitting ferment in the digestion of the fats. Would it not seem reasonable, in view of this physiological partnership, if gallstones were to produce digestive disturbances, or at times pain or vague local distress? A great many so-called inveterate dyspeptics will be found at operation to have gallstones, and most of them without jaundice.

Jaundice may at no time have been present in gall-bladder and cystic duct gallstone cases. In fact, it may never have occurred even in a case of common bile duct cholelithiasis, though this seems uncommon. In the following case history we were unable to say beforehand whether we had to do with duodenal ulcer or gallstones. We were inclined to think it ulcer. Note, if you please, the youth of the patient, and the absence of jaundice:

Mrs. F., aged 22, patient of Dr. Willard Rank, Newark, O., had had, 13 years prior to her admission to the hospital, the first attack of what was called "gastric neuralgia." Attacks occurred once a year until the last five years, when they began to be more frequent. In the beginning of the last year they were of daily occurrence, while in the latter six months they recurred on an average of about once in three weeks. She complained of sour stomach, eructations of gas, and cramps radiating from the epigastrium to the right shoulder. She had at no time in her history had jaundice. There was a little tenderness on pressure over the gall-bladder and common duct.

Operation, Oct. 17, 1907. Cholecystotomy, choledochotomy. Removed 20 stones from the ball-bladder; one from the cystic duct; several from the common bile duct, one being lodged in the ampulla of Vater. The patient recovered, and when last heard from was in excellent health.

Intermittent jaundice may occur, and probably will be observable if the biliary mainline be the seat of concretions.

There have been 205 consecutive gallstone operations in the practice of Dr. Charles S. Hamilton and the writer in the period between January 1, 1907, and April 1, 1912; 186 recovered, and 19 died—a general mortality rate of 9.20 per cent. In 43 cases stones were found in the common or hepatic ducts. Of these, 9 died and 34 recovered. Twice the cystic duct was large enough to make it possible to bring the stones back out of the common duct through the cystic duct, making them extricable through the gall-bladder incision. Both patients recovered. In one case only in the entire series, so far as is known, were concretions permitted at operation to remain in the choledochus, and it terminated fatally. The patient had coincident cancer of the pylorus, requiring a rather extensive partial gastrectomy. The gallstones were removed from the gall-bladder and the organ drained, while those in the choledochus were left in situ. Forty patients required calculous choledochotomy; 32 recovered, and 8 died—a 20 per cent. mortality for those cases in which the common bile duct was incised for the removal of concretions therein contained.

Few, if any, of the fatal common bile duct cases were promising operative subjects. Jaundice, with liability—especially if deep—to post-operative hemorrhage, sepsis acute or chronic, with the impaired physical resistance which long suffering had produced, were the more usual impediments to recovery. A few of the common duct cases might have survived provisional drainage of the gall-bladder merely, thus mitigating the "bottled up" biliary sepsis, so that a later choledochotomy might have been successful.

In the diagnosis of common duct cases one often finds the history of ague-like chills, fever and sweats from biliary sepsis. One may find, too, sometimes, deep-seated tenderness one inch to the right of and above the navel. If at operation one finds a shrivelled gall-bladder—cholecystitis obliterans—one naturally assumes that concretions may be found too in the common or hepatic ducts. A large gall-bladder with jaundice may suggest, according to Courvoiseur, Robson, and others, cancer of the pancreas or the bile ducts.

In 26—about 13 per cent. of the 205 cases—enlargement of the pancreas—usually its head—at least was found. A few had acute infections of the pancreas with fat necrosis. The most of them were cases of chronic pancreatitis. Cancer of the pancreas was not often observed.

150 East Broad Street.

ABORTION—ITS SOCIAL AND ETHICAL ASPECTS.*

By CHARLES EDWARD NAMMACK, M.D., LL.D.,

NEW YORK.

VISITING PHYSICIAN TO BELLEVUE AND TO ST. VINCENT'S HOSPITALS; PROFESSOR OF CLINICAL MEDICINE, CORNELL UNIVERSITY MEDICAL COLLEGE AT NEW YORK; PRESIDENT, GUILD OF ST. LUKE

"Abortion should be undertaken as reluctantly as one would commit justifiable homicide."[1] But inasmuch as homicide is sometimes justifiable, so are there circumstances which not only justify, but imperatively command, the induction of abortion by the conscientious physician. These circumstances are well established and generally easily demonstrable. But their occurrence is rare in comparison with the vast number of cases in which childbearing is deliberately evaded for social, economic, or luxurious reasons, and in this country, as well as in other parts of the world, decreasing fecundity, or decline of the birth rate, is a question which should give statesmen, citizens, the reverend clergy, and legal and medical men grave concern. It is the proud boast of physicians that medical science has made wonderful strides in the last fifty years. The results of this are shown in a marked decrease of the death rate, owing to preventive medicine, improved sanitation, and intelligent quarantine. In this onward march of medicine, obstetric and gynecic science have taken part. Women have been relieved of many of the perils of child birth, congenital errors of development causing barriers to conception have been removed, acquired diseases of women's reproductive organs have been cured, and we have reason to look for a large increase in the birth rate as a consequence. Instead of that, we find that the average number of children to each marriage has declined from 4.5 at the close of the eighteenth century to 2.0 at the end of the nineteenth century.

At the present time the birth rate in this country is lower than that of most European countries, being much like that of France. It is even less than that of France in some States.[2] Yet we are accustomed to think of France as degenerate, and to regard her low birth rate as an index of her morality.[11] To be sure, our death rate is less than the death rate of France, which exceeds that of her birth rate, and this fact alone protects us from the national decay which threatens any country where more people die every day than there are children born.[3] We are not alone in this decline. Most countries where statistics are kept with reasonable accuracy show also a decline of from one to six births per thousand of population since 1875. The brilliant exception to the condition is Japan, which has shown other unmistakable evidences of vigorous growth during the same period.

In this country we complacently rely upon the enormous influx of foreigners to our hospitable shores to maintain and increase the population. And it is well that we can afford to do so, to a certain extent. For it is upon the foreign-born parents that we must rely to maintain our birth rate. The average number of children to a marriage is 2.1 to each American woman and 3.8 to each foreign woman. The higher we go in the social scale, or in the intellectual scale, with American women, the lower do these figures fall, the highest social classes showing 1.8, and married women who are college graduates only 1.3.[5] In intellectual Massachusetts a study of the census shows, among the native population, a special birth rate of only 6.3 births for every 100 adult women of child-bearing age.[4] That of Berlin, a city not noted for its excessive morality, shows, for comparison, a special birth rate of 10. There is, then, the sting of truth in the statement that the descendants of the Pilgrim fathers now inhabit Mount Auburn Cemetery while the sons of Aliens live on Commonwealth avenue. And this is not alone true of Massachusetts. Even a young, vigorous State like Michigan does not afford enough children per marriage to keep itself intact.[6] To bring the matter nearer home, the statistics for our own city of New York, for the past year, show the average number of births per 1,000 of the population to be distributed as follows, among the American-born

*Read before the Bronx Medical Association, April 25, 1912.

and foreign-born mothers: Italian mothers, 46; Hebrews, 35; Irish, 25; Americans, 14.[7] The social, economic, and political significance of these figures may well invite the attention of our governing bodies. It will be noticed that the figures for American-born mothers are even lower than they were twenty-five years ago. But *it is not the American wife who reduces fecundity* as much as it is the American husband.[2] This is proved by figures which show that the children of foreign fathers who marry American-born women show a higher numerical average than those resulting from marriages where both parents are American. This race suicide means the decay of spiritual ideas and the death of true patriotism. Every physician knows that the limitation of the number of offspring is mainly volitional. The number of marriages which are unfruitful through no fault of the parents constitute but a very small percentage of the cases of sterility. The causes of this voluntary avoidance of the joys and sorrows of parenthood are many, but as it exists to the greatest extent among the comfortable classes, "the gospel of comfort" is the main factor. Gonorrhea and syphilis undoubtedly play some part in holding down the birth rate, but pale into insignificance beside the number of cases of wilful prevention of conception and interruption of pregnancy. So many women are now employed in various pursuits that marriage, and, after marriage, maternity, is avoided so that the family income may not be diminished. The so-called emancipation of women has led many others to look upon the old-fashioned dignity of motherhood as unbecoming to those who desire the political privileges of men and brothers. The aversion of many wives to normal conjugal relations is driving many husbands to the society of mistresses and harlots. It is well known that these women derive their chief support from married men. The struggle of the early years of professional life induces many physicians, lawyers, and even clergymen, to seek to limit their responsibilities. In a canvass of 64 married physicians, 15 years after graduation, Hunsberger[8] found that only 105 children had been begotten. It is to be hoped that this proportion is not true for all medical graduates. If it is, our profession hardly deserves the title of "guardian of the rights of the unborn child to live." Legislators depend upon us to suggest suitable laws to punish the abortionist. Moralists and theologians rely upon us to furnish the facts to enforce the truth on this subject upon the moral sense of the community. We should come into court with clean hands, and let our light so shine before men that they may see our own good works. If we are to throw the weight of our influence against conjugal onanism we must demonstrate that we ourselves can hand on the torch of life with unimpaired brilliancy. Of course, we must be prepared to meet the argument that "to insist upon the duties of motherhood is an impertinent interference with private rights," or "that there is nothing so wearying to the nerves as the constant care of little children,"[9] but every right has a corresponding duty, and the marital right carries the duty and the glory of parentage, and the mother who has taken to her breast many little children is far less likely to become nerve weary than she who tries to avoid or prevent conception, if possible, or to terminate pregnancy prematurely, if need be. The evil in the latter case is not only individual, it is national. We have only to look at the once powerful magnanimous, chivalrous, pious France, now humiliated, bleeding, and prostrate at the feet of a relentless foe,[10] to realize this, and to condemn the Judases of our own profession who for pieces of silver are willing to dabble their hands in innocent blood. If some of the well-meaning but misguided people who are now so solicitous about enforcing laws for the protection of the guinea pig would direct their time and energy to measures designed to stop the wholesale slaughter of innocent unborn children, future generations would rise up and call them blessed. When the men of Rome offered their highest homage to the mothers of families that nation was at the height of its imperial greatness. But when the Romans transferred their affections and homage to their mistresses, decay was not far off.[8]

The ethical aspects of abortion need not detain us long. There is no ethical question to be solved by the man who believes that there is a God, and that this God gave to Moses on Mount Sinai, the commandment "Thou shalt not kill." To the man who does not so believe, argument is a waste of time.

REFERENCES.

1. Hirst, B. C.: "A Text Book of Obstetrics," 1909, p. 797.
2. Engelmann, Geo. J.: *Philadelphia Medical Journal*, 1902, January 18, p. 121.
3. Schlapp, Max G.: *The Outlook*, April 6, 1912, p. 785.
4. Kuczynski, R. R.: *Quarterly Journal of Economics*, Harvard University, Nov., 1901, Feb., 1902.
5. Wright, Carroll D.: Sixteenth Annual Report Mass. Bureau of Labor, 1885.
6. Wilbur, Cressy L.: First Report Michigan Acad. of Sciences, 1894-0, p. 102.
7. Guilfoy, Wm. H.: Registrar of Vital Statistics (oral communication).
8. Hunsberger, J. C.: *Journal of the American Medical Association*, August 10, 1907, p. 457.
9. Harper, Ida Husted: "Small vs. Large Families," *The Independent*, Dec. 26, 1901.
10. Report on Criminal Abortion, Transactions of the American Med. Assn., 1871.
11. Kelly, Howard A.: *Operative Gynecology*. Article—"Sterility."

42 East Twety-ninth Street.

Serum Therapy of Postdiphtheritic Paralysis.—U. Calcaterra finds that the later a case is injected with antidiphtheric serum the more apt it is to have a sequent paralysis. The intraspinal injection of the serum has no effect in warding off the paralysis or in decreasing the mortality. The serum treatment of the paralysis is not of any value.—*Rivista di Clinica Pediatria.*

Obstipation of Four Months' Duration from Megasigmoid.—Luria reports a case of Hirschsprung's disease in a young woman which differs from the ordinary type of megacolon. The patient before the present attack was used to attacks of fecal retention lasting from a few days to several weeks and terminated by copious spontaneous evacuations. She came under observation on the twentieth day of one of these attacks and the author began to control the case with the *x*-ray and endoscopy as well as by ordinary physical diagnostic procedures. The present attack was associated with pregnancy. Considering her ailment the woman's general condition was surprisingly good. Her appetite was somewhat diminished. Meteorism was not in evidence nor were there any symptoms of autointoxication. The sequence of the history is not given, the author being chiefly concerned with establishing the diagnosis of megasigmoid. His claim that the fecal retention is the longest on record may not take cognizance of extreme cases in hysterical subjects.—*Deutsche medizinische Wochenschrift.*

MEDICAL RECORD.

A Weekly Journal of Medicine and Surgery.

THOMAS L. STEDMAN, A.M., M.D., EDITOR.

PUBLISHERS

WM. WOOD & CO., 51 FIFTH AVENUE.

See fourth page following reading matter for Rates of Subscription and Information for Contributors and Subscribers.

New York, September 14, 1912.

VACCINATION WITH LIVING SENSITIZED TYPHOID BACILLI IN TYPHOID FEVER.

THE results obtained by Metchnikoff and Besredka in the immunization of the chimpanzee against typhoid infection by means of the inoculation of sensitized living typhoid bacilli suggested that similar results might be obtained in the case of human beings. To W. Broughton-Alcock, working in the laboratory of the Pasteur Institute, was assigned the task of testing the practical value of this method of immunization. His results, published in the *Lancet*, August 24, 1912, supply a new and interesting chapter in the history of immunotherapy.

The method of employing living microorganisms in the inoculation of animals for purposes of immunization was first suggested by Besredka, who thought that the living organisms would give rise to an immunity response similar to that resulting from a true infection, while the phagocytosis and bacteriolysis of the sensitized bacilli would prevent any danger of the inoculated individual becoming a carrier. This method is analogous to that of vaccination for smallpox in which a living virus is also used. The typhoid bacilli are sensitized by the addition of antityphoid horse serum, and remain alive in this condition for four months without exceptional precautions.

The chief advantage claimed for the use of the living bacilli, with which there have already been inoculated 750 persons, including many soldiers, is that there is no general reaction and only an insignificant local reaction following the injection, in marked contrast to the reactions following the injection of an equal number of killed bacilli. As recommended by Besredka the bacilli are injected in two doses, at ten days' interval. The first dose for a woman of average size is 500,000,000 sensitized living typhoid bacilli suspended in 1 c.c. of 0.8 per cent. saline. For a man of good physique the first dose should be 750,000,000 bacilli. The second dose administered from seven to nine days later is twice as large. An elevated temperature, a previous history of typhoid fever, and the time of menstruation do not contraindicate the inoculations.

As regards the ultimate efficacy of this method in preventing typhoid infection there are as yet no data except those obtained by Metchnikoff and Besredka in the case of the chimpanzee. Broughton Alcock states that the sera of the vaccinated individuals have not been found to deviate complement and have been found only rarely to agglutinate an emulsion of a young culture. But the addition of these sera markedly increases phagocytosis, and it is suggested that the former may also contain antiendotoxin bodies. Experiments *in vitro* with reference to the presence of specific amboceptors, agglutinus, and bacteriolysins do not indicate the degree of immunity attained.

On the basis of his interesting results, taken in conjunction with the experimental findings of Besredka and Metchnikoff, Broughton-Alcock concludes that the living sensitized typhoid bacilli are innocuous, and that they ought to be used by preference in the immunization of human beings.

ACROMEGALY FROM THE SUFFERER'S VIEWPOINT.

"WHEN fate, shaping my 'ends,' decreed that I was to suffer from the malady acromegaly, she perhaps gave me the greatest compensation possible by causing me to enter the medical profession. After the distress caused by the one and the enjoyment due to the other—both extending over more than a quarter of a century—I find myself in the unique position of being able to relate a personal experience of this rare complaint as it affected one with some medical knowledge." With these well chosen words Leonard Portal Mark prefaces the extraordinary narrative* that may be termed the autobiography of an acromegalic. The most singular point about this history is the fact that the victim of this disease suffered from its symptoms for thirty years and that for two-thirds of this period whenever he looked into the mirror to brush his hair or to shave, a typical acromegalic was staring him in the face, and yet he never recognized this fact! This is another illustration of the observation that has been frequently made that physicians who are keen in detecting the presence of disease in others are frequently oblivious of its existence when they themselves are the unfortunate subjects. In the case of an incurable malady this ignorance may be a fortunate compensation. The friends of Dr. Mark knew for many years the secret of his changing physiognomy, of his enlarging hands and feet, and of his patient suffering, yet they wisely kept from him the knowledge that would have increased the burden that he was obliged to carry.

The author of this book has made an important contribution to medical science in describing the insidious onset of this disease and its numerous subjective symptoms. The usual conception of acromegaly is that which is derived from a consideration merely of the anatomical changes accompanying it. The subjective symptoms, however, are the more important ones from the victim's viewpoint. The

*"Acromegaly, a Personal Experience," by Leonard Portal Mark, M.D., late President of the West London Medico-Chirurgical Society, and Pathological Draughtsman to St. Bartholomew's Hospital. London: Baillière, Tindall & Cox, 1912.

practice of keeping a diary ever since the age of fourteen enabled the author to fix the earliest manifestations of his affliction. These were present when he was twenty-four years old, in 1879, about seven years before Pierre Marie recognized the disease and gave it a name. The first abnormal sensations were perceived when the sounds from a piano did not seem clear, as if the notes were double, and when at the same time there was a sensation as if the left ear were stuffed up by a foreign body. These sensations were then attributed to a Eustachian catarrh. During the next two or three years there occurred peculiar feelings in the head, and periodical attacks of "malaise," associated with subjective sensations of cold, inability to fix the attention, and giddiness. These sensations were worst in the morning. Seven years after the insidious onset of the disease there developed a persistent left-sided face-ache, which was aggravated by fatigue and by cold. But the most distressing symptom was the headaches to which the sufferer was subject for twenty-four years. During the first six years of this period the headaches were of a neuralgic nature, and were acute, frequent, and of prolonged duration. The terrible aching in the left side of the head was aptly described by the popular expression "a splitting headache," and was apparently caused by a growth within the cranium, slowly pushing its way in different directions. During the second period, from 1893 to the present time, the headaches have been less of the neuralgic type and more akin to fatigue or lassitude. During this time a more predominant feature has been what the author terms the "acromegalic state." This, with the headache and face-ache, constitutes a triad of symptoms. The manifestations of the acromegalic state are a general feeling of discomfort, a sensation akin to that produced by a narcotic, a feeling of restlessness or a desire to keep absolutely quiet, intolerance of noise or light, a feeling of giddiness, dyspnea, and mental depression. At the same time the face is pale, the lower lip is much more prominent and drooping, there is ptosis of the left eyelid, and the hands and feet become larger, and moist and cold. The acromegalic state which seems to be a sign of low vitality or of lowered blood pressure comes on imperceptibly and passes off in the same way.

Although the author had excellent eyesight in early life, he began to experience trouble with his eyes at the age of twenty-four, when he would have photophobia and his lids would become red and swollen. At the age of thirty-eight there was discovered an astigmatism which accounted for the asthenopia. Ten years later the astigmatism disappeared from the right eye, which was explained by the anatomical changes in the bony walls of the orbit causing a change of pressure on the eyeball. Another distressing symptom was the lacrymation attributed to an hypertrophy of the lacrymal glands. Second in importance to the ocular troubles were the nasal symptoms, which consisted of frequent "colds." These were supposed to be due to a postnasal catarrh and hypertrophy of the turbinates. Two marked subjective symptoms of this disease were a pronounced lethargy and the sensation of noises in the head.

In detail the author describes the physical changes of acromegaly, the enlarging hands, feet, and lower jaw; the inconvenience caused by the malocclusion of the teeth, and the enlargement of the tongue. Other troubles noted are the sudden loss of power in the legs, the development of trophic sores on the toes, and the occurrence of cardiac insufficiency as manifested by attacks of dyspnea on exertion and of irregularity in the heart's action.

In discussing the causation of the multitude of symptoms that go to make up the complex clinical picture of acromegaly, Mark notes that many of these have purely a local significance and are connected with the bony changes within or in the walls of the skull. The headaches, the acromegalic state, and the lethargy may be caused by toxins, by variations of blood pressure, or by the presence of a tumor at the base of the brain. The bony and visceral hypertrophy is attributed to a sensitization by some substance emanating from the pituitary gland, or to a disturbance of the interglandular equilibrium. One striking characteristic of the author's case is the difference in character which has marked the earlier and the later symptoms: the earlier symptoms were of a neuralgic while the later symptoms have been of a lethargic nature. Possibly the former were caused by hyperpituitarism and the latter have been caused by hypo- or dyspituitarism. A skiagram of the author's skull shows a pituitary fossa twice the normal size and it is surmised that this contains an abnormally enlarged pituitary gland. It was only seven years ago that the light suddenly dawned upon Dr. Mark that he had acromegaly. Fortunately since this revelation and even in the absence of any special therapy the symptoms have undergone decided improvement. The sufferer finds that there is still much in life that he is able to enjoy, in spite of slight "unsoundness of eyes" and a gradually increasing "weakness of wind and limb."

MECHANISM OF SALVARSAN DEATHS.

It may be taken for granted that severe phenomena following salvarsan injections do not differ among themselves essentially in fatal and recovered cases. An analysis of fatalities alone does not appear to throw much light on the mechanism of death. It is highly probable from analogy that many deaths from this and other powerful drugs are in the full sense of the word accidents due to the fortuitous association of a number of elements, the absence of any one of which might have spared the individual.

A recent analysis of severe and fatal cases by Lesser showed the presence of two groups, in one of which after from three to five days fatal coma sets in, the patient succumbing within twenty-four hours. In the other type the symptoms do not develop for weeks and the patient recovers. Since this analysis was published Hammer has published a fatality corresponding to Type I (*Münchener medizinische Wochenschrift*, July 23), in which, despite the fact that patient was a young vigorous

subject infected within a year, he already presented severe syphilitic alterations of the heart and aorta. Ehrlich from the first warned against these lesions as forming a contraindication to the use of salvarsan; and it is probable that this formed an important link in the chain of causal factors.

In the same number of the same journal Hirsch reports two fatalities which do not belong to Lesser's first group. While the two appeared to show the same syndrome of fever, jaundice, cramps in the calves, convulsions, coma, etc., which pointed strongly to arsenical poisoning, one patient was taken acutely ill after the second injection, the other was not attacked until all treatment had been discontinued and patient was free from symptoms. These cases showed a strong supersensitiveness to arsenic, the first one suggesting a condition analogous to anaphylaxis, while the other patient was suddenly attacked over four months after the injection. As an autopsy could not be obtained in the second case its nature must remain dark.

The number of possible factors in salvarsan poisoning is now very large. Leaving aside such possibilities as an embolism and status lymphaticus which used to be invoked in parallel cases, we have to consider both anaphylaxis and cumulation, and the sudden liberation of endotoxins acting in concert with the drug itself, which combination is believed to be highly deleterious in syphilis of the heart and aorta, meningitis, and other conditions. Impurities in the solution and the reaction of the latter have received much attention in this connection. Comparisons have someimes been instituted between salvarsan and methyl alcohol as neurotropic substances, and poisoning with the latter appears to be due to the formation of by-products from imperfect attempts at oxidation. It has recently been shown of the action of two synergists that with only a fair dose of one a mere fractional dose of the latter will double the effect. This cooperation might be invoked as a factor in drug poisonings. The number of possible factors in such cases could be considerably amplified.

SERUM IN THE TREATMENT OF SCARLET FEVER.

The manifestations of scarlet fever are due to two causes, the unknown virus of scarlatina itself and the streptococcus that is almost invariably present in addition. Of course, really specific treatment by means of sera or antitoxin is out of the question so long as the cause of the disease is unknown, but enough evidence has been accumulated that the accompanying infection with the streptococcus is frequently the main element which makes scarlet fever such a dreaded disease. It is not surprising, therefore, that antistreptococcic sera should have been advocated in the treatment of the disease, and of them Moser's serum, first prepared in Vienna under the supervision of Paltauf and Escherich, has had most prolonged and carefully observed trial. Moser tried the effect of his serum in 84 cases, with the following results: (1) The earlier the injection the better the result. (2) Large doses are preferable to small ones. (3) Fever is cut short abruptly by the injection, the throat symptoms are made much lighter, the nervous symptoms disappear. (4) Complications (septicemia, nephritis) become infrequent. (5) The mortality is reduced. Numerous Russian authors, in whose land scarlet fever is often a veritable scourge, decimating the children in the villages, have tried Moser's serum and have spoken very favorably of it. Thus Egis and Langovoy have used it in several hundred severe cases and think that the mortality in their cases dropped from the usual 47 to 16 per cent.

In a recent number of the *Wiener klinische Wochenschrift* (Vol. XXV, No. 24) Dr. Oscar Szekeres tells of the favorable impression produced by the use of the serum in Hungary. The injections were followed constantly by a drop in the temperature and a very marked diminution of the symptoms of toxemia. The duration of the exanthem appeared to have been shortened, and complications made rarer. It seemed also that the serum could be used as a prophylactic, exposed children being very rarely attacked by scarlet fever if injected with the serum.

These results are simply confirmatory of those previously published. They, however, serve to call attention once more to Moser's serum and the undoubted good effects produced by it. Its manufacture is not as simple as the production of vaccines, involving as it does the isolation of streptococcus from the blood of patients severely ill or dead of scarlet fever, and the injection of living cultures of these streptococci into horses. This may explain why of late vaccines have been so much exploited in comparison with such sera as Moser's. The latter, however, should find extensive trial, for if it does even a moderate part of the good claimed for it, it forms a valuable weapon in the fight against the mortality of scarlet fever.

BIOLOGICAL SIGNIFICANCE OF THE THYMUS.

Until very recently the thymus has been looked upon as having no necessary significance for the integrity of the individual, but recent studies by Klose and others have demonstrated that the organ is actually indispensable to life. Negative results of earlier years are clearly seen now to have been due to defective technique and defective knowledge of autogeny. The gland must be removed at the height of its activity and with due aseptic and other surgical precautions. When this is done in the newly born dog no changes in growth rate are at first apparent. This is the period of latency, which lasts from two to four weeks. Thereupon there ensues a rapid accumulation of adipose (stadium adipositatis), while the bones and organism at large show progressive enfeeblement. When the animal is three or four months old, the stage of cachexia develops, and is attended eventually with mental failure called thymic idiocy. At the age of 14 months or thereabout, the animal perishes.

Last spring before the Verein der Aerzte of Halle (*Münchener medizinische Wochenschrift*, August 13) Lampé went exhaustively into the spe-

cial features of thymus deprivation. The bone changes are characteristic of the latter. The longitudinal growth is arrested and osteoporosis, rachitis, and osteomalacia appear, due evidently to lack of undissolved calcium. Fractures in such animals cannot heal by callus formation, and fibrous union occurs. Klose believes that thymus extirpation causes acidosis and that the excess of acid in the economy prevents the deposition of the lime salts. The inference is that a natural function of the thymus is the prevention of acidosis. Thus free phosphoric acid is rendered harmless by the nuclein synthesis. The changes in the nervous system are parallel with those of the bones. There is a peculiar swelling and liquefaction of nervous substance, presumably due to the acidosis. This is expressed clinically in many ways. The coma which results in time from this mechanism is readily intelligible. Extirpation of the thymus is followed by diminution of lymphocytes in the blood, which may be made good by thymus grafts or injection of extracts. There is a compensatory hypertrophy of the genital glands after thymectomy, while the thyroid, pancreas, and spleen are similarly affected. Those with persistent thymus usually have very small genital glands. The spleen is probably the organ best suited to compensate for the loss of the thymus.

Neosalvarsan.

Salvarsan was number 606 in the list of arsenic compounds which Ehrlich made in an endeavor to produce a drug which should be non-toxic to man and yet fatal to spirochetes in the body. Its success was marked and immediate, but the chemist was not satisfied and continued his work along the same lines. Number 914, the next to merit attention, he has named neosalvarsan. This drug is a condensation product of salvarsan and sodium formaldehyde-sulphoxylic acid; it contains one-third less the percentage of arsenic so that, theoretically, the dose should be half as much again as that of salvarsan. H. E. Kersten (*Centralbl. f. Bakt.* vol. 65, p. 369) has conducted comparative animal experiments with the two drugs and finds that this is not the case. With the introduction of a new group the toxicity of the arsenic compound has been changed. According to this investigator, the minimum fatal dose of the new drug is, for rabbits at least, over twice that of the original salvarsan. The therapeutic powers were tested upon mice infected with *Spirocheta obermeieri* and *Trypanosoma brucei*, with the result that the dose of neosalvarsan necessary to cause the disappearance of the parasites from the blood was about one-half that of the older drug. If these differences appear also in the effect of these drugs upon man, we must consider the new substance a valuable addition to our chemotherapeutic agents. Still, neosalvarsan is very new and should be used with extreme caution until it may be possible to draw definite conclusions as to its value. Not the least of its advantages is the fact that it is easily soluble in water and that such a solution has a neutral reaction, so that there is no need of the preliminary neutralization of the solution as there is in the administration of salvarsan.

Fighting the British Insurance Act.

Domestic servants, their employers, clerks of both sexes, and others are fighting the British Insurance Act with tooth and nail. A new organization has been formed by the disgruntled ones entitled "The Amend-the-Act League." This league, which is non-political, has adopted as a method for attracting supporters and registering them as members the sale of a penny (two-cent) "amend-the-act stamp." The stamp is large, with an allegorical design printed in brown. Forms are to be sent in with the stamps. Each of the forms has twelve squares upon which the stamps are to be stuck, and there is a place for the name and address of the buyer opposite each square. Every buyer of a stamp becomes a member of the league, and while the money received for the stamps goes to swell the funds of the league, the names and addresses form a register of the members of the organization. The stamp idea is taken, in a spirit of audacity, from Chancellor of the Exchequer Lloyd-George's own scheme, but the officials say with this difference: "It is better to lick a stamp once to help in getting the insurance you want than to lick stamps for years in payment for what you don't want." It is said that the movement is making headway.

News of the Week.

New Plague Cases in Porto Rico.—A despatch to the Public Health Service from Porto Rico last week told of a continuance of bubonic plague in the island. A suspicious case reported from Puerto de Tierra was confirmed and a new case was reported from Santurce. This brings the total number of cases in Porto Rico up to fifty-one. The total deaths have been twenty-seven.

Watching for Cholera Carriers.—Officers in charge of the Public Health Service quarantine stations, which comprise most of the stations in the country, with the unfortunate exception of New York, have been warned to be on the lookout for cholera carriers. Double examinations of all entering aliens will be prescribed until the present outbreak of cholera in southern Sardinia and Italy and in Beirut, Syria, subsides.

Concealing a Diphtheria Epidemic.—A despatch from Toronto last week said that thirty deaths from diphtheria had occurred at St. Vincent's Infant Home in that city during the past few months, although the knowledge of the outbreak has only just been made public. There are about one hundred children in the institution, of whom ten or fifteen are now suffering from the disease. The authorities have treated those not yet attacked with prophylactic injections of antitoxin.

Street Fatalities in New York.—During the month of August this year 18 persons were killed in New York City by automobiles, 17 by horse-drawn vehicles, and 13 by trolley cars, making a total of 48 deaths from street accidents. In the same month last year there were but 24 deaths, 7 from automobiles, 13 from horse-drawn vehicles, and 4 from trolley cars. In the year 1910 there were 376 street killings, in 1911, 423, a number already nearly reached in the eight months of the present year.

Glanders in Philadelphia.—A fatal case of glanders in man has occurred in Philadelphia. The sufferer contracted the disease from a horse that he had purchased a short time previously.

Health Rules on Match Boxes.—It is stated in *The Sun* that the Grand Duchess of Hesse has induced all the manufacturers of matches in the grand duchy to have printed on their paper wrapping boxes the rules for fighting tuberculosis. This idea, which seems to have originated in South America, likely will be extended in Germany.

Pennsylvania State Board of Medical Education and Licensure.—Dr. J. M. Baldy of Philadelphia, president, and Dr. D. P. Maddux, of Chester, have been reappointed by Governor Tener to membership on the Pennsylvania State Board of Medical Education and Licensure, to serve for three years. Dr. Wm. A. Stewart, of Pittsburgh, has been appointed a member for one year, to fill the unexpired term of the late Dr. Seip. The remaining members of the Board are Dr. J. T. Johnsonbaugh, of Bethlehem, whose term will expire September 1, 1913, and Dr. Adolph Koenig, of Pittsburgh, whose term will expire September 1, 1914.

The Vaccine Treatment of Typhoid Fever.—Dr. W. H. Watters, Director of the Department of Pathology and Bacteriology, Evans Institute for Clinical Research, Boston, Mass., requests reports of cases of the vaccine treatment of typhoid fever, to be used in a forthcoming article on this subject. Due credit will be given in the article to each person favoring him with such report.

Reception to Visiting German Physicians.—As previously announced, the German Medical Society will give a reception to the German members of the Congress on Hygiene and Demography, at the Liederkranz building, East 58th street, on the evening of September 18. Physicians, not members of the German Medical Society, who desire to attend this reception, may purchase tickets from Dr. Wolff Freudenthal, 1093 Madison avenue.

Gifts to Charities.—The will of Nathan Herrmann, who died on August 23, disposes of an estate estimated at over $1,000,000 and gives more than $90,000 to forty charitable and religious organizations. Mr. Herrmann left $15,000 to Beth Israel Hospital, $10,000 to the United Hebrew Charities and $5,000 each to the following: Montefiore Home, Mount Sinai Hospital, Hebrew Sheltering Guardian Society and the Hebrew Orphan Asylum. Institutions to receive $2,500 each were the Sanitarium for Hebrew Children, Jewish Protectory, Educational Alliance, Technical School for Hebrew Boys, Technical School for Hebrew Girls and the Hospital for Deformities and Joint Diseases. The will left $1,500 to the Institute for the Improved Instruction of Deaf Mutes and $1,000 each to eighteen other institutions. The Home for Aged and Infirm Hebrews and the Lebanon Hospital also received each $2,000. By the terms of the will of Cyprian S. Brainard, Jr., who died recently at Haddam, Conn., the Yale Medical School will receive $25,000.

Dr. Simon Flexner, director of the Rockefeller Institute, has been appointed Huxley Lecturer for the current year. This lecture will be given before the Charing Cross Hospital Medical School, London, on October 31, 1912.

Dr. Edna S. Valentine has been appointed third assistant bacteriologist and Dr. Aaron Barlow fourth assistant bacteriologist in the Philadelphia Bureau of Health.

Dr. Don R. Joseph, formerly associate in Physiology and Pharmacology at the Rockefeller Institute, has been appointed Associate Professor of Physiology at Bryn Mawr College.

Dr. Frederick J. Birchard, formerly assistant in Chemistry at the Rockefeller Institute, has been appointed a research chemist in the Dairy Division of the Bureau of Animal Industry, Washington, D. C.

Harvey Society.—The following provisional program of lectures, subjects and dates for the season 1912-13 has been arranged: Oct. 5, Prof. Max Rubner, University of Berlin, "Modern Steam Sterilization." Nov. 9, Prof. Joseph Erlanger, George Washington University, "The Localization of Impulse Initiation and Conduction in the Heart." Nov. 23, Prof. G. N. Stewart, Western Reserve University, "The Rate of the Blood-flow and the Vasomotor Reflexes in Disease." Dec. 14, Prof. F. B. Mallory, Harvard University, "The Infectious Lesions of Blood-Vessels." Jan. 18, Maj. J. J. Russell, U. S. A., "The Prevention of Typhoid Fever." Feb. 15, Prof. Theodore C. Janeway, Columbia University, "Nephritic Hypertension: Clinical and Experimental Studies." March 1, Prof. Edward C. Conklin, Princeton University, "The Size of Organisms and Their Constituent Parts in Relation to Longevity, Senescence and Rejuvenescence." March 22, Prof. John Howland, Johns Hopkins University, "The Scientific Basis for the Artificial Feeding of Infants."

National Association for the Study of Pellagra.—The second triennial meeting of this association will be held at Columbia, S. C., on October 3 and 4, 1912. The preliminary program contains forty-one titles of papers to be read, and in addition it is stated that papers are expected from thirty other contributors, the titles of whose communications are not yet announced. The announced and expected contributions are from authorities in England, Italy, France, Austria, Spain, Rumania, Algiers, Egypt, the Philippine Islands, the Panama Canal Zone, Mexico, Brazil, the Argentine Republic, Cuba, Porto Rico, and the Bahama Islands. Further details may be obtained from the Bureau of Information, Main Street, Columbia, S. C.

Foreign Lecturers at the Post-Graduate Medical School.—Prof. H. Strauss of Berlin will lecture at the New York Post-Graduate Medical School and Hospital, on October 12, 14 and 15, on the Diseases of the Stomach and Kidney. Professor Carl von Noorden, of Vienna, will also deliver a series of lectures on the Pathology and Treatment of Diabetes, Radium Therapy, and Arteriosclerosis at the same place, on October 28 to October 31 inclusive.

Appointments at the Rockefeller Institute.—The Board of Scientific Directors of this institute announce the following appointments: Michael Heidelberger, Fellow in Chemistry; Linda Bartels Lange, Fellow in Pathology; Florentin Medigreceanu, Assistant Resident Physician.

The Texas State Medical Law.—It was stated recently in this column that the Texas State Medical Association is preparing to petition the legislature for a medical examining board consisting of seven members, composed of all schools of medicine. Dr. Holman Taylor, secretary of the association, writes that Texas has such a law already on her statute books and it is one of the best medical practice acts in the United States. This law was enacted in 1907 and the results following its operation are more satisfactory than they could possibly be with any other plan, except, possibly, the single board composed of regular physicians alone, and covering all phases of the practice of medicine.

Obituary Notes.—Dr. W. J. McGee, a well-known geologist and anthropologist in Washington, died on September 4 at the age of 59 years. He was born on a farm in Dubuque County, Iowa, and while doing farm work studied Latin, mathematics, astronomy, surveying, and law. Later he studied geology, archeology, and ethnology. He was for a time attached to the U. S. Geological Survey, later was in charge of the Bureau of Ethnology, from which he resigned to take charge of the department of anthropology at the St. Louis Exposition. He was president of the American Anthropological Society, and had held many other positions of honor and merit in connection with the sciences in which he was so prominent. His wife was Dr. Anita Newcomb McGee, the only woman holding a commission as Lieutenant in the U. S. Army; she organized a corps of women nurses for the army in the Spanish-American war. Dr. McGee bequeathed his brain for examination to Dr. E. A. Spitzka of the Jefferson Medical College of Philadelphia. The weight of his brain was a fraction over forty-nine ounces.

Dr. Charles D. Cook, a retired Brooklyn physician, died of apoplexy yesterday at his home, in his eighty-seventh year. He was born in Hardwick, Mass., and was graduated from the Castleton College of Medicine at Castleton, Vt., in 1853, and two years later settled in Brooklyn and had been in active practice there until 1908. He was a charter member of the New York Institute of Stomatology and a member of the Kings County Medical Society, the American Association for the Advancement of Sciences, the National Geographical Society and the Odontological Society of Great Britain.

Dr. Ernest H. Sparrow of Cambridge, Mass., a graduate of Harvard Medical School, in 1910, died at his home on August 27, aged 32 years.

Correspondence.

OUR LONDON LETTER.

(From Our Regular Correspondent)

WINTRY SUMMER—INSURANCE CAMPAIGN—VITAL STATISTICS—ANOTHER LOW BIRTH RATE—THE R. A. M. C.—TRAINING AND AMBULANCE WORK—NOTIFICATION OF CEREBROSPINAL FEVER—ITEMS—OBITUARY.

London, August 23, 1912.

The abnormal weather has been the most prominent topic of the week among all classes. The effect of the cold and wet on the public health is a subject of speculation, but the injury to the crops is obvious. Yesterday was the finest day of the month: seven hours of socalled "bright sunshine" were recorded for London, but it was cold, only 64°F. at the highest, and in the afternoon there were signs of backing toward rain, which fell in the night and is falling all to-day. The next most insistent topic is the Insurance Act. As it affects all classes, there are protests in all directions. A league of resisters has been formed, said to have already reached three or four thousand members. In one county the farmers have declared they will defy the act. In other parts large employers are refusing to comply in order to force a case into the courts. The Government has responded and already three summonses have been decided by the magistrates, and appeals are going to the higher courts. Much is made of the inequalities as flagrant instances of injustice. A favorite example is that the Chancellor of the Exchequer with his £10,000 a year can keep half a dozen servants for his insurance tax of £3.18.0. But a small manufacturer who can only make £1,000 a year, employing 100 men to do so, is to be mulcted in £119.3.4 for insuring them. A house surgeon inquiring about his honorarium has been informed officially that he must pay unless it exceeds £160 per annum. Cricketers have been told that those who play for money must pay as manual workmen on what they earn by their sport. Footballers are so classed, too, though it sounds rather odd.

The profession continues as a whole united against the act, as must be obvious to the Government in the many resignations and refusals to accept offices under it. The British Medical Association is widely supported in its pledge, and other societies are adopting similar movements. Thus it is proposed to decline to support the Government at the assembling of the territorial force. On Wednesday a Provisional Medical Committee for Cardiganshire unanimously passed a resolution calling on all practitioners acting as medical officers on the territorial force to resign their commissions. It was strongly urged that so long as ministers are determined to work the act in a way to cripple the profession, medical men should not leave their practices and go into camp on terms involving financial loss.

On Wednesday there was put in circulation a summary return by the Registrar-General of the vital statistics collected under his authority for the year 1911. This shows another low birth rate—a subject much discussed of late—and already a number of writers are dealing with the figures. The population of England and Wales in the middle of the year, on the assumption that the rate of increase has remained as in the last intercensal period, is estimated at 36,163,833. The births numbered 881,241, a proportion of 24.4 per 1,000. This rate is 7 per 1,000 below that of the previous year and that was the lowest on record. The rate varied in different counties between 31.1 and 18.2. In the 77 great towns containing more than 50,000 inhabitants (at the census of 1901) the births numbered 411,666, equal to a rate of 25 per 1,000.

London requires distinct consideration, not only for its size and importance, but various circumstances complicate its statistics of births, and also of marriages and deaths. The population had shown a decline in the intercensal period of 1901 and 1911. In the middle of the latter year it is estimated to have been 4,521,301. The marriages in 1911 were 40,201, equal at that estimate to a rate of 17.8 per 1,000 of the population at all ages. This is an increase of 0.5 over the rate of 1910, and of 0.4 over the average rate of the five years 1906-10. The births registered in the year were 111,738; that is, after the registration as far as could be of those occurrring in the chief institutions admitting maternity cases. The number gives a rate of 24.8, which is the lowest recorded in the metropolis. It is the same as for the whole of England and Wales as stated above.

Circumstances which interfere with the statistics in the metropolis are far more obvious in regard to deaths than to births. As an example, no less than 2,826 deaths of London residents took place outside and 3,299 nonresidents inside the boundaries of the County of London. Making the necessary correction for these, it is estimated that the rate was 15.0 per 1,000 in 1911, which is 1.3 above that of 1910 and 0.1 above the average for the previous five years. What is called Greater London includes

all Middlesex, parts of Essex, Surrey, and Kent, with the boroughs of Croydon and West Ham. In this great area the rate was 13.8 and in its outer ring alone it was only 11.8. The figures for infantile mortality in Greater London were 124 per 1,000 births, as against 108, 102, and 95 in the three preceding years. In the County of London the infantile mortality was 129 and in the outer ring alone it was 115.

In connection with the military maneuvers the Royal Army Medical Corps has gone through exercises as to tending wounded in the firing line and passing them by hospital train to the base and to a clearing hospital. Three field ambulances, fully equipped, have been used, each with 10 officers, 240 men, 22 vehicles, and 100 horses. A battle was arranged between infantry brigades, and certain men ordered by their officers fell out while marching, forming casualities for the R. A. M. C. Each man carried an identity disc and in a pocket a first field dressing to be ripped out for first aid. Removal by stretcher squads to a field dressing station is the next step; then by horsed ambulance to tent for surgical treatment, further removal to clearing hospital, and thence by ambulance train to base hospital.

The value to the R. A. M. C. of exercises of this kind is generally pronounced considerable, and the manner in which they were performed is attracting commendation. Some criticism of the system is, however, being made. For example, as at present constituted the R. A. M. C. is not self-contained, but depends on the Army Service Corps for horses and drivers, receiving them only on mobilization. Each ambulance is then supplied with 47 Army Service Corps drivers, 86 horses, and 24 wagons, but a clearing hospital at the field remains immobile until furnished with transport by the officer in charge of communications; consequently it might happen that such hospital would be in an awkward position should the transport service be at a distance or completely occupied. The suggestion is therefore made that it would be an improvement for the R. A. M. C. to have its own transport and so be complete in itself during peace and organized always in war units like other troops.

The local Government Board has sent a circular to health authorities to put in operation the regulations as to the notification of acute poliomyelitis and cerebrospinal fever, under the Public Health Acts.

Many practitioners are foregoing their usual annual holiday, partly on account of the unfavorable weather, but more probably from the difficulty of finding substitutes. It is commonly reported that a locum tenens is more exacting than ever and prefers a temporary post in some pleasant country or seaside locality to close work in towns, while young men who can afford it take a trip abroad before settling in practice. I suggested to one complaining, that an annual holiday was not absolutely essential to health, and my statement being ridiculed, I pointed to the many bed-ridden patients who survive for years.

A radium syndicate is in treaty for the purchase of the Bath springs and mineral water establishment with the Roman remains and exclusive rights to develop them. The City Council will probably lease them all under proper safeguards. The syndicate is willing to spend a quarter of a million on developing the radium water springs of the bathing resort.

The death is announced of Sir William J. Sinclair, Professor of Obstetrics in Manchester University and Physician to the Southern Hospital for Women and Children. He was ex-president of the North of England Obstetrical and Gynecological Society, of the Manchester Medical Society, Honorable Fellow of American and Austrian allied societies, and held many other distinctions. He was an Aberdeen graduate in arts and medicine, 1873-5, with highest honors in both. He contributed to the societies and journals ten successful cases of cesarean section, a paper on this operation under cocaine, and an article on malignant diseases of the uterus in Allbutt and Clifford's system. He took an interest in public matters and was the first chairman of the South Manchester Liberal-Unionist Association.

Dr. T. F. Gardner, Physician to the R. West Hants Hospital, Bournemouth, died on August 1, just after his return from his summer holiday. He was president of the Medical Society of Bournemouth, where he practised many years, and of the Balneological Section of the Royal Society of Medicine.

A verdict of accidental death was found on the 17th at an inquest on the body of Dr. John Wade, Lecturer on Chemistry at Guy's Hospital. He died at Sevenoaks Cottage Hospital, to which he was taken on July 28, having met with an accident when riding his motor-cycle in that neighborhood. Coming into collision with a trap, he was struck on the chest by the shaft, breaking three ribs. Pneumonia followed, from which he was recovering when he died from embolism on the 15th inst.

OUR PARIS LETTER.

(From Our Regular Correspondent.)

SOCIAL CAMPAIGN AGAINST ALCOHOLISM—ABUSE AND DANGERS OF RADIUM THERAPY IN ANGIOMA—TREATMENT OF GONORRHEAL EPIDIDYMITIS WITH RADIOACTIVE EARTHS—GENITAL IMPOTENCE—OBITUARY, DR. VILLEMIN.

PARIS, September 2, 1912.

THE Council on Hygiene of the Department of the Seine has just received a communication from the National League for the Suppression of Alcoholism, asking that the legislative bill limiting the number of saloon licenses be submitted as soon as possible to the Chamber of Deputies. Quite recently a similar bill had been introduced by the Government, but unfortunately the discussion over it led to no decision. For this reason the National League for the Suppression of Alcoholism has registered its stern protest, asserting that this question is of vital importance from the viewpoint of public health. Chronic alcoholism in France is indeed a veritable social disease—a scourge comparable to the plague in India. As so well expressed by Profesor Letulle, alcohol fills the prisons with criminals, the asylums with madmen, and the hospitals with consumptives. Unfortunately those who are engaged in the liquor industry have an all-powerful influence, and have prevented the fruition of the Government's project. The large number of saloons is one of the chief causes of the perpetuation of alcoholism, providing the ready temptation to those who are addicted to drink. The contagion of example rapidly spreads. Official statistics show that during the past forty-five years the number of saloons has increased fourfold. It is important that those who are not yet confirmed victims should be shielded from the numerous temptations. For

this reason the Council on Hygiene of the Department of the Seine has unanimously declared that the public authorities should restrict the number of saloon licenses.

The abuses and dangers of the radium treatment of angioma was the subject of a discussion before the Surgical Society. Professor Kirmisson is not opposed to this method, but he calls attention to its abuses and dangers. He cites the case of a fifteen-month-old baby girl in whom the surgical extirpation of an angioma would have been a very simple matter, but in whom the radium treatment has resulted at the end of five months in the production of an extensive ulceration which does not respond to treatment. Another case was that of a young girl in whom a large angioma of the left cheek was treated by means of radium. As the result of this treatment the entire lower lip was completely destroyed. The mouth was gaping, showing the border of the lower alveolar process, the tongue, the sublingual region, and the inner side of the cheeks. Kirmisson believes that these facts are worth communicating, for they show the powerful action of radium on the nutrition of the tissues and the dangers which accompany its use. Pierre Delbet believes that radium provides an excellent form of therapy, the indications and technique of which must be understood. He mentions the case of an unfortunate woman who had a diffuse angioma of the cheek. Following the applications of radium there resulted crusty ulcerations and scaly thickenings of the epidermis, and the patient was much worse than before the treatment. The speaker believes that in the case of subcutaneous angiomata the radium which may be introduced beneath the skin gives excellent results.

The treatment of gonorrheal epididymitis by means of radioactive earths was the subject of study by de Beurmann, Regnault, and Cottin, who reported their results before the Medical Society of the Hospitals. In spite of the considerable attention that has been paid to this subject the treatment of gonorrheal epididymitis is still far from producing satisfactory results. During the past few years there have been utilized in the treatment of gonorrheal arthritis various radioactive earths containing salts of uranium. It has been but a step to apply this treatment in the case of gonorrheal epididymitis. The results obtained have been quite satisfactory. The application of the radioactive earths has caused disappearance of the pain and swelling. The action has been all the more favorable the more acute and recent the inflammatory condition has been. The technique of applying this treatment is as follows: Vaseline is rubbed on the scrotum in order that erythema may be prevented. A thick layer of radioactive earth mixed with glycerin to prevent drying is spread on a compress. According to Ramsay, when the radioactive earths lose their absorbed moisture the emanations are no longer produced, and the curative powers are no longer in evidence. The cataplasm of glycerinated earth is applied to the affected testicle by means of a cotton suspensory covered with rubber tissue, which retards the desiccation of the medicament. At the same time the suspensory causes gentle compression. The application is renewed every twenty-four hours

Genital impotence was the subject of a prolonged and interesting discussion before the Medical Society of Paris. According to Lefur this condition is a most unfortunate calamity, the prevention and cure of which should be mastered by the physician. Genital impotence may be defined as the inability to accomplish the sexual act. In man this occurs in the organic diseases of the nervous system—tabes, paresis, and disseminated sclerosis; in the neuroses such as neurasthenia; and in diseases of the genitourinary system as the result of local lesions. It is also present in diseases of nutrition, such as obesity, and in certain modifications and deviations of the genital function. The treatment depends upon the cause. In impotence associated with organic diseases of the nervous system, it is necessary to attend to the primary condition which in most cases is syphilis. In the case of impotence caused by the neuroses, moral and psychotherapeutic measures frequently produce surprising results. In the case of impotence associated with local genitourinary lesions, the treatment of these is first necessary. Impotence caused by diseases of nutrition is combated by attending to the causal albuminuria, dysuria, etc. The opotherapy recommended by Brown Séquard gives excellent results. This treatment consists in the subcutaneous injection of orchitic extract in doses of 2 cubic centimeters every two or three days. After the tenth injection the treatment is suspended for eight days. In some cases prostatic extract may be substituted for the orchitic extract.

Luys believes that a large number of cases are the result of lesions of the posterior urethra left after a badly treated gonorrhea. The diagnosis of these lesions may be made with the aid of the urethroscope, which also permits of the application of an effective local treatment. Berillon believes that frequently impotence is of psychic origin, and that in this case hypnotism may be employed with advantage. Dartigues believes that a large number of cases are caused by sexual intercourse with women in whom there is a relaxed or torn perineum left after childbirth, and that perineorrhaphy is almost as important for the man as for the woman. Guelpa states that impotence which is not the result of an organic lesion may be attacked by means of a treatment of detoxication; purgation and starvation cause the cells to get rid of their toxic products which inhibit the physiological activity of the cells.

Villemin, surgeon of the hospitals, has just died suddenly and prematurely. He inherited the name of one who was the first to demonstrate the true nature of tuberculosis. He was much interested in the diseases of children. His great gentleness and kindness won for him the confidence of all. Three years ago at the bedside of a patient he was stricken with an attack of cerebral hemorrhage. For one year he bore without murmur a left-sided hemiplegia, but he gradually recovered the use of his limbs and was able at last to walk and to wield the scalpel. Death seized him brusquely while he was peacefully at work in his laboratory.

Bilateral Edema of the Ethmoidal Septum in Sinus Suppuration.—D. McKenzie reports the case of a young man who illustrated a type of septal edema. The ethmoidal portion of the nasal septum on both sides presented a smooth, rounded, and boggy swelling, which on the right side was so considerable as to occupy the whole of the upper meatus of the nose. Microscopical examination showed that the swelling was due to simple inflammatory edema.—*Proceedings of the Royal Society of Medicine.*

OUR CANADIAN LETTER.

(From Our Own Correspondent.)

TYPHOID FEVER IN OTTAWA—BIRTH AND DEATH RATES IN MONTREAL—COCK CROWING AND CATERWAULING AS PUBLIC NUISANCES—DEATHS FROM DRINKING WOOD ALCOHOL IN NOVA SCOTIA—PUBLIC HEALTH EXHIBIT AT THE TORONTO EXHIBITION—CREATION OF DOMINION DEPARTMENT OF HEALTH PROPOSED—ANTI-FLY CAMPAIGN IN TORONTO.

TORONTO, Sept. 4, 1912.

CANADA, like the United States, is visited all too frequently by epidemics of typhoid fever. There are few cities of any size in the Dominion in which more or less enteric fever is not present in the autumn and winter months, while Montreal has been almost notorious for its recurring outbreaks of the disease. Toronto again has more typhoid fever by far than should be the case in a well drained, properly sewered modern city with a good water supply. However, in these cities it has been the water supply in fault, and somewhat tardily now the municipal authorities are endeavoring to remedy defective public water supplies. In Ottawa within the past two years there have been significant object lessons as to the need for insuring water free from infectious germs. An epidemic of typhoid fever broke out there some months ago, the origin of which was clearly shown to be infected water. Advice was given by Dr. Charles Hodgetts and other experts with regard to the steps to be taken to avoid future epidemics. Whether the city authorities neglected this advice or whether the suggestions were only partly carried out, the fact remains that a very serious outbreak of typhoid fever occurred in Ottawa six weeks or so ago. Up to the time of writing there have been over one thousand cases, with about forty-six deaths. The outbreak was extremely explosive, all the cases occurring within the course of three or four weeks. Perhaps the most notable feature in connection with the epidemic is that it originated in the summer, thereby upsetting preconceived notions of the seasonal occurrence of the disease, but emphasizing the fact that whenever there is a defective point in a public water supply an outbreak of enteric fever will follow upon the infection reaching the source of supply. Dr. Charles Hodgetts, medical advisor to the Canadian Commission of Conservation, has been engaged by the Ottawa City Council to prepare a report on the recent epidemic, and Major Drum has been asked to cooperate in the preparation, while Dr. G. G. Nasmith of Toronto has been engaged to give special evidence in reference to the hypochlorite treatment of water. The report should be of value and it is to be hoped that it will show as far as is possible the proportion of paratyphoid fever cases to those of true typhoid. Judging from the relatively small mortality rate in this most recent epidemic of enteric fever, it would seem that many of the cases should be classed with the paratyphoid group.

Montreal has long been celebrated for its high birth rate, and, on the other hand, has gained an evil reputation for its high death rate, mainly amongst young children. Dr. L. Laberge, Medical Officer of Health of Montreal, is now about to publish his report for 1911 and has given out to the lay press some figures which will be included therein. The total number of deaths in Montreal in 1911 was 9,974, which, basing the calculation on the official census return, by which the population of the city is shown to be 478,480, gives a death rate of 21.10 per 1,000. The births in Montreal last year numbered 17,637, which gives a rate of 37.40 per 1,000.

Recently there have been numerous complaints in Montreal with regard to noisy cockerels and howling cats. It appears that some of the inhabitants of Montreal are of decidedly rural tastes and that their bucolic sentiments carry them so far that they endeavor to form a *rus in urbe* by keeping even in flats fowl of various kinds, such as hens, cockerels, geese, and turkeys. The cackling of the hens in the early morn is annoying to those dwelling in neighboring flats, but the vociferous, persistent, and lusty crowing of healthy cockerels is almost beyond the limit of the powers of human endurance. Accordingly, the Medical Officer of Health has been petitioned to indict as a nuisance the keeping of cockerels and other fowl in the heart of the city. The Officer of Health is placed in somewhat of a quandary, as, although he fully recognizes the validity of the claim of citizens to be defended from noisy fowl, so far as he is concerned he can only take action when the obnoxious birds may be regarded as creating an unsanitary nuisance. Still, every citizen has a right to take action under the common law to suppress a nuisance, and there appears to be no doubt that the offensive "rooster" crowing comes under that head. As for the nuisance of cats by night, the citizens of every city of the world are only too painfully aware of its existence. If the Medical Officer of Health of Montreal can discover any means whereby this horror can be abated or done away with, he will gain the undying gratitude of city dwellers everywhere.

Eleven deaths and one case of blindness occurred in Nova Scotia some few weeks ago among Russians who were sold liquor made from wood alcohol.

A feature of the Toronto Exhibition has been the public health exhibit of Ontario arranged by Dr. J. McCullough, Chief Medical Officer of Health of the Province of Ontario. The exhibit is almost, if not quite, the most popular of the Exhibition, an immense amount of interest being taken in the puppets representing the rate of infantile mortality in Chicago and the danger to health of children from sleeping in a vitiated atmosphere. The whole exhibit is educative in a high degree, not the least so being the moving picture views illustrating certain phases of public health. The arrangement and control of the exhibit reflects the greatest credit on those responsible and is in keeping with the marked progression in the direction of public health made by Ontario, especially during the past few years.

At the meeting of the Canadian Medical Association, which took place at Edmonton on August 10, 12, 13, and 14 last, and to which I shall refer at some length in my next letter, one event of considerable importance occurred. This was the passage, by unanimous vote of those present at the meeting, of the report on the Department of Public Health for Canada. The sentiment of the meeting was that the need for the creation of such a department is urgent. Furthermore, the Hon. Dr. Roche, Secretary of State of the Dominion, has declared himself strongly in favor of the establishment of a Canadian Department of Health.

In Toronto a very energetic campaign is being waged against flies under the leadership of the able

Medical Officer of Health, Dr. Charles Hastings. As is pointed out in the monthly bulletin issued by the Health Department, the educational effect of the anti-fly campaign is by no means its least valuable feature. Disease will never be prevented effectually until the public has learned how to prevent, and to appreciate intelligently the methods used to bring about this end.

Progress of Medical Science.

The Boston Medical and Surgical Journal.

August 29, 1912.

1. Acquired Hallux Valgus: Late Results from Operative and Non-Operative Treatment. C. R. Metcalf.
2. Contributions to the Neurology of the Child. II. Note on the Mortality and the Proportion of Backward Children in Cases of Congenital Syphilis Followed Subsequent to Hospital Treatment. W. P. Lucas.
3. Progress in the Treatment of the Neuroses. E. W. Taylor.
4. Tuberculosis in the Aged and the Diagnostic Value of Increased Whisper in the Interscapular Space. H. F. Stoll.

1. Acquired Hallux Valgus.—C. R. Metcalf states that hallux valgus refers to an outward displacement of the big toe—largely from mechanical causes—with inward displacement of the first metatarsal bone and hypertrophy and erosion of its head. Bunions and hammer toes often accompany this condition. The longitudinal arch may drop: the anterior arch is nearly sure to do so. Oftentimes symptoms are due primarily to these defects. By non-operative treatment an effort has been made to hold the feet in approximately normal position; in non-aggravated cases this may be done by wearing proper shoes and plates. Other forms of treatment have proved of doubtful merit. Advanced cases demand operation. Fifteen operations, many of them closely allied, have been devised. The operations fathered by Wilson and by Barker have not met with success in the author's clinic. Better results have followed employment of the methods of Porter, Hueter, and Mayo, remembering always that the two latter may subsequently require plates. Other operations have not been tried, so that the value of tendon transplantation, removal of the sesamoids and like details cannot be fairly expounded. Syms' dictum is worth noting: employ different procedures for different deformities. Always operate on the deformity, not on the bursa. Finally, the most acceptable incision, the question of drainage, of splinting, of shoes and other details of after treatment should be carefully considered for the individual case.

2. After History of Cases of Congenital Syphilis.—W. P. Lucas records the following observation that he has made in these cases: (1) The high early death rate. This may be due partly to the instructions not being followed out, but in great measure it must be admitted that this mortality might be lessened to a considerable degree if such cases could be very much more closely followed, insisting on maternal nursing and on continuance of specific treatment, the two cardinal points in the early management of such cases. (2) The high percentage of backward children. No attempt has been made to draw any absolute percentages in such a small number of cases, but it must be clear that something should be done when, out of sixteen children of school age suffering from any congenital disease, eleven are more or less mentally affected. (3) The lack of following up the initial treatment. As history after history shows, treatment was discontinued as soon as the eruption which, in most cases, was what the mother had brought the child in for, had disappeared. The question here, of course, which might be raised is: Is the mother the one on whom the entire blame is to be put, or is this within the field of the medical service? This naturally raises a second question—whether the responsibility for completed treatment rests on the medical service? The author feels that too often it is really the lack of a follow-up system being provided by the hospital, which would hold and keep hold of such cases, and see that they realize the importance and understand the significance of the treatment.

4. Tuberculosis in the Aged.—H. F. Stoll concludes that pulmonary tuberculosis is not an uncommon disease in persons past 60 years of age. It is more prevalent than the mortality suggests, as an acute pneumonia is often the ultimate cause of death. In persons in the latter decades of life the disease is chiefly characterized by its extreme chronicity and by periods of relatively good health. Many people contract tuberculosis each year from the intimate association with some elderly member of the household who has had a "stomach cough" or "catarrh" for "as long as he can remember." The examination of the sputum of elderly people for tubercle bacilli is a much neglected procedure. The recognition of the pulmonary lesion is often difficult as the typical physical signs are frequently masked by some other condition, notably asthma or emphysema. In these cases the key to the diagnosis will often be found in the interscapular space. The detection of bronchial gland enlargement in adults speaks for tuberculosis rather than for chronic bronchitis or emphysema.

New York Medical Journal.

August 31, 1912.

1. The Cinematograph as an Aid to Medical Education and Research. R. Matas.
2. Wheat Bran: Its Chemical and Physical Characteristics in the Treatment of Chronic Constipation. A. E. Gallant.
3. Blood Pressure in Pulmonary Tuberculosis. Some Factors Which Alter It. F. M. Pottenger.
4. Bubonic Plague; Seen at Close Range in the Far East; Some Random Notes. C. S. Braddock
5. Cutaneous Sporotrichosis, with Report of a Case. G. B. Foster and W. H. Thearle.
6. Arthritis Deformans; Successful Treatment by an Autobacterin. H. M. Greene.
7. School Lunches: Their Relative Physical Advantages in Elementary and Secondary Schools. J. S. Wile.
8. Salvarsan Therapy; Present Status in Germany, with Report of Fifty Cases. H. H. Morton.
9. A History of Surgical Hemostasis. W. C. Borden.

1. The Cinematograph in Medical Education and Research.—By R. Matas. (See MEDICAL RECORD, Vol. 81, page 142.)

2. Wheat Bran in Constipation.—By A. E. Gallant. (See MEDICAL RECORD, August 17, 1912, page 314.)

3. Blood Pressure in Pulmonary Tuberculosis.—By F. M. Pottenger. (See MEDICAL RECORD, August 3, 1912, page 225).

4. Bubonic Plague Seen at Close Range.—C. S. Braddock states that no plague case should be taken inside the four walls of a house, but should be treated in tents or small temporary pavilions that can be burned and replaced at small expense upon the death of the patient. He has learned this from the Chinese in the island of Puket in the Indian Ocean, who had several acres of land fenced in and a great number of small pavilions with floors raised from the ground and attap roofs to accommodate one patient each. On the death of the patient the body could be cremated and the pavilion destroyed by fire at the same time. This also saves the lives of many nurses and doctors who would perish if attending pneumonic cases in a close room. The English have found it almost impossible to disinfect large stone buildings in Hong Kong, Singapore, Bombay, and Calcutta. Plague recurs in these buildings with terrifying frequency after everything has been done that science can devise. The author attributes this largely to bed bugs and fleas that are not destroyed by the disinfection and fumigation, and also to the fact that the soil itself becomes infected where the tropical sun does not get at it. He has also found that the disease was not transmitted nearly so much if every one was compelled to put on shoes and stockings. All of the soldiers used in quarantine duty, and who were in close contact with plague cases, were compelled to wear shoes

and stockings, and not one contracted the disease. The author was always careful not to stoop too closely over a pneumonic case so as to avoid the breath or coughing of the patient, and also to keep his leggings saturated with coal oil to keep the fleas away. In the town of Petchaburi a great number of children died, and it was found on investigation that the rats having died, the fleas took up their habitat on the dogs, and the children, petting the dogs, suffered in proportion.

5. Cutaneous Sporotrichosis.—G. B. Foster and W. H. Thearle state that many conditions formerly diagnosed as tuberculous lymphangitis, tertiary syphilis, glanders, etc., are now being recognized as sporotrichal infections. Sporotrichosis is widespread, occurring sporadically in man, but it may assume endemic or even epidemic proportions among animals. Infection most frequently occurs in young adult males, but age and sex appear to play no part as predisposing factors other than in their relation to exposing the individual to the sources of infection. Occupation plays an important part, the disease usually occurring among farmers, stablemen, and others who handle stock. The period of incubation, usually seven days, varies from six to twelve days. The symptomatology of the reported cases is strikingly similar. The initial lesion, as a rule on the hand or forearm, follows traumatism which has broken the continuity of the skin. The original lesion may heal before the sporotrichal lesion appears, or it may remain open. The primary sore develops as a nodule or pustule surrounded by a circumscribed area of induration, becomes reddened and boggy, and eventually breaks down, discharging thick, viscid pus. Sloughing follows, with the formation of an indolent ulcer which shows no tendency to heal. Following the initial lesion, similar nodules appear along the lymphatics which drain the part and these, in turn, inflame, soften, and break down. Glandular involvement may be absent, local, or generalized. Constitutional disturbances are not usual, but occasional sensations of chilliness and mild febrile reactions occur in some cases. Recovery almost invariably follows the internal administration of one of the iodine salts, with vigorous antiseptic treatment of the local lesion. Death may occur in the debilitated or as a result of intercurrent infection. Extensive abscesses, the formation of fistulous sinuses, and erysipelas have been noted as complications and sequelæ. A tentative clinical diagnosis of sporotrichosis may be confirmed by demonstrating the specific causative agent, the sporothrix, in smear preparations or cultures from the lesion. The organism is a fungus, consisting of branching mycelia with numerous highly refractive pyriform spores which are not unlike yeast cells in appearance.

9. History of Surgical Hemostasis.—W. C. Borden traces the history of surgical hemostasis to the perfected essentials in the operation of the present day, *i. e.* elastic compression, ligation, and asepsis, and the less important hemostatic measures, such as heat, cold, torsion, and acupressure. In reviewing this history he notes that all the important surgical discoveries in hemostasis were preceded by suggestions or practices of a similar kind which, however, did not become of value until the flash of genius touched them. Genius did not bring forth these facts until other conditions, such as opportunity, and more particularly the progress of invention and the advance of the sciences made their finding possible. Opportunity gave to the acute and courageous mind of Paré the occasion to employ, and the high position authoritatively to recommend the ligature; this was known, but not used, by his predecessors. The advance of anatomical knowledge after Vesalius and the physiological triumph of Harvey in discovering the circulation of the blood, completed the facts necessary firmly to establish the ligature in surgical practice. The invention of rubber made possible Esmarch's advocacy of elastic constriction and its later wide application. The researches of Pasteur led to the investigations of Lister and the establishment of antiseptic and aseptic surgery, and this, combined with the findings of the many workers in pathology and bacteriology, made possible the aseptic ligature and the clean wound, in which repair can proceed unfraught with the dangers of inflammation and suppuration, and completing the present day perfection in aseptic control.

Journal of the American Medical Association.

August 31, 1912.

1. Prognosis in Chronic Heart Disease as Adversely Affected by Certain Medical Traditions. C. L. Greene.
2. The Treatment of Diphtheria-Carriers by Overriding with Staphylococcus Aureus. W. T. Lorenz and M. P. Ravenel.
3. Pneumococcus Infection and Immunity. R. Cole.
4. Corpus Luteum Extract, with Suggestions as to Its Use in Gynecological Practice. C. F. Furnam.
5. Puerperal Infection. A Study of Some of the Most Interesting and Practical Features of the Disease. T. J. Watkins.
6. Gynecological Disease in the Insane and Its Relationship to the Various Forms of Psychoses. E. J. Tanzig.
7. The Radial Treatment of Abortion, with Observations on and an Analysis of 3,500 Cases. R. McPherson.
8. The Epidemic of Sore Throat in Chicago. A Preliminary Report. P. G. Heinemann.
9. Family Hematoporphyrinuria and Its Association with Chronic Gastrointestinal Dilatation, Peculiar Fits and Acute Polyneuritis. A Preliminary Report. L. F. Barker and W. L. Estes.
10. Auto and Bicycle Inner Tubes Used as Ice-Bags and Hot Water Bottles. J. H. Schaap.

1. Prognosis in Chronic Heart Disease.—By C. L. Greene. (See MEDICAL RECORD, Vol. 81, page 1120.)

3. Pneumococcus Infection and Immunity.—R. J. Cole presents a critical review of the work of the last few years on pneumonia. He considers first the infection or onset—how the pneumococcus lying harmless in the mouth under ordinary circumstances, can bring about the severe infection of the lung. Decreased resistance of the patient as a cause lacks experimental proof, but there is evidence that a changed condition of the lung may permit the pneumococcus to gain lodgment and to grow in its tissues. There may be at first a non-specific exudate dependent on cold, trauma, etc., and pneumococci being the organism most commonly present, may set up on this an added irritation. There is much evidence against the old view that lobar pneumonia occurs at once throughout a lobe. Sections of the lung of persons dying from the disease show a constant irregular extension of the process. The clinical features of pneumonia are an acute intoxication, and the author relates experiments of his own to test Friedberger's theory of this in pneumonia, and he does not accept Rosenow's theory of difference of virulence in the pneumococci causing autolysis in one case and not in another. Typical pneumococci always autolyze whether highly virulent or not. An active poison can be readily and constantly produced from the bodies of pneumococci and it may or may not be responsible for the symptoms in pneumonia. As regards the occurrence of the crisis, the development of immune bodies in the blood serum cannot be demonstrated. From clinical observation it would seem much more likely that the crisis represents a kind of neutralization of the intoxication rather than a destruction of the bacteria of the lungs. The crisis is still an obscure phenomenon and it cannot be stated positively whether it represents a destruction of the bacteria, a neutralization of the poison, a kind of anaphylactic shock, or a combination of all of these. Lastly the author speaks of the action of immune serum and specific therapy generally in the lungs. The failure of immune sera in the human subject is laid by Neufeld to the impossibility, or at least the failure, to inject a sufficient amount in proportion to the body weight. Dochez's experiments seem to indicate that there may be another explanation of the failure and that, in addition to the presence of immune bodies in the serum administered, it is necessary for the body of the infected animal itself to play an active part and that in case of very severe infection it is unable to react to a sufficient degree. If one

is to make serum efficacious in treatment some method of increasing this completing action of the body must be found, and one may be able to obtain curative results by combining active immunization, that is, vaccination, with the supplying of immune bodies by immune serum administration. It is uncertain whether the use of a polyvalent serum would be better than the univalent one of immune serum.

4. **Corpus Luteum Extract.**—C. F. Burnam, reviewing the function of the internal secretion of the ovaries and the use of the extract, gives his personal experience in experimenting with the extract of the corpus luteum of the pig. When given by the mouth corpus luteum tissue of the sow, even in large doses, has little or no toxic effect on women. It affords a valuable means of controlling the nervous symptoms which occur in so many patients at the time of the natural or artificial menopause, giving relief to most sufferers. It is a valuable remedy in treating patients with insufficient internal ovarian secretion during the menstrual life. This class constitutes a very large number of women. It is an excellent remedy to induce menstruation in young women suffering from functional amenorrhea. Those who are fat, in addition to regaining menstruation, usually, but not always, lose weight. There would seem to be a possibility for the use of the drug in cases of unexplained sterility and repeated abortions. Extensive use should be made of corpora lutea from the cow, sheep, and other animals to determine if these extracts work more successfully than those of the sow. The ideal luteum tissue for any animal is doubtless tissue from its own species, but this cannot be obtained for the woman. So far as it goes, the author's work strengthens his conviction that Fraenkel is correct in attributing menstruation to the internal secretion of the corpus luteum. From clinical experiences he is inclined to believe that the corpus luteum possesses different properties due to different chemicals. One of these substances causes hyperemia of the pelvic organs; another relieves nervous symptoms of a toxic character, as at the menopause. It would seem that this product acts as a neutralizer, since even large doses of the luteum cause no disturbance of a toxic nature. On the other hand, the toxic results of intravenous injections of the luteum extracts, as well as the nervous phenomena of menstruation, show that there must also be some toxic material present which is not absorbed from the stomach or intestines. All of these various substances may in the future be separated.

5. **Puerperal Infection.**—F. J. Watkins, from a study of recent literature, and also from personal observation, has been impressed with the difference of opinion that exists concerning the treatment of puerperal infection. His investigations indicate that local treatment is too prevalent and that systemic treatment would be advisable in most cases. He finds that most cases are treated by curettage, douches, and intrauterine medication. The author gives his reasons for believing the disease a systemic one and that it should be treated chiefly by general remedies which strengthen the bodily resistance and hasten the development of immunizing bodies. Retained products of conception should be left to escape spontaneously. In individual instances gauze packing should be employed to check bleeding, to hasten separation of the tissues, and to stimulate uterine contraction. Pelvic inflammatory exudates are usually absorbed, but in exceptional cases, usually due to colon bacillus infection, incision and drainage should be employed. Cases of suppurative peritonitis should be operated on early, but the vigorous operative treatment employed frequently is more dangerous than the disease.

6. **Treatment of Abortion.**—R. McPherson concludes that abortions are more common than is realized and the sequelæ are frequently serious. Rarely, if ever, is an abortion complete. Only in 13.7 per cent. of the cases analyzed was there the slightest reason to believe that the ovum was expelled unbroken. All abortions should be investigated and the uterine cavity explored. When this is done properly, one can show a mortality in all classes of cases of not more than 1.8 per cent. and in ordinary cases, exclusive of accidents and malignant complications, of not more than .016 per cent. One can always show, which is perhaps most important of all, satisfactory results in 97 per cent. of all cases so treated.

7. **Gynecological Disease in the Insane.**—F. J. Taussig calls attention to the following three facts (1) The decidedly greater frequency of gynecological disease in manic-depressive insanity—74 per cent. as compared with the average of 47 per cent. (2) The large proportion of chronic inflammatory conditions of the genital tract in this form of insanity. (3) The proportionately large percentage of mental recoveries after gynecological operations done on women having this form of insanity. In manic-depressive insanity every patient should be subjected to a gynecological examination, and when a definite lesion is found this should be corrected either by local or operative measures.

9. **Family Hematoporphyrinuria.**—By L. F. Barker and W. L. Estes. (See MEDICAL RECORD, Vol. 81, page 1118.)

The Lancet.

August 24, 1912.

1. Observations on the History of Syphilis, on the Wassermann Reaction and Parasyphilis, and on Treatment. Sir Henry Morris.
2. Vaccination for Typhoid Fever by Living Sensibilized Bacilli Typhosi. W. Broughton-Alcock.
3. Preliminary Note on a Method of Vaccinal Treatment of Surgical Tuberculosis. J. Fraser and J. P. McGowan.
4. Nerve-Ending Anesthesia. C. Clarke.
5. The Nature of Colon Bacilluria. E. M. N. Williams.
6. Preliminary Report on the Forcible Feeding of Suffrage Prisoners. A. J. Savill, C. W. Mansell Moullin and Sir Victor Horsley.

2. **Vaccination with Living Typhoid Bacilli.**—By W. Broughton-Alcock. (See page 481.)

3. **The Use of Tuberculous Tissue Products in the Vaccine Treatment of Surgical Tuberculosis.**—J. Fraser and J. P. McGowan, acting on the supposition that while artificially prepared tuberculins may contain many of the toxic substances responsible for the pathological changes present in a tuberculous focus the whole of these toxic substances would be most likely obtained in tuberculous foci as they occur in the naturally infected human body, have used such material for the preparation of a vaccine. In short, instead of using artificial media for the growth of the tubercle bacillus in the preparation of vaccinal material, the products occurring where human tissues have acted as the culture medium have been employed. Further, the authors have made as far as possible the vaccinal treatment autogenous, using the patient's own tuberculous material, obtained at an operation or otherwise, as the source of the vaccine. In some cases this was impossible as no operation had been performed, and in such instances material from other patients was used; but bone cases were always treated with material from bone tubercle, and gland cases with material from gland tubercle. The technique used was as follows: A portion of tuberculous tissue—preferably caseous—was taken at the operation and ground up in an agate mortar with washed silver sand, saline was then added, and the emulsion was allowed to stand for an hour to allow the grosser particles of the sand and tissue to settle. The supernatant fluid was then centrifuged to get rid of the finer particles. This supernatant fluid was pipetted off and sterilized by heating to 60° C. for an hour. The fluid so obtained was tested for sterility, and finally put up in measured quantities in sterile capsules which were sealed. In the preliminary experiments no attempt was made to accurately standardize the vaccine. The authors began their experiments with a very small

quantity of the vaccinal fluid—5 cubic millimeters—and if the patients did not react too severely the next dose, which was given a week after, was increased to 10 c.mm., and so on with increments every week of 5 c.mm., until at the end of ten weeks a dose of 50 c.mm. was given. In one case only was there a severe reaction to a 5 c.mm. initial dose. In this case the dose for the first few weeks was kept at 5 c.mm., the reaction becoming less severe with each injection, and in the end the dose was increased as in the other cases without severe symptoms developing. The most encouraging results are seen in gland tubercle, the reason probably being that, from their greater accessibility to clinical examination, improvement was more readily detected. Even more striking than the local improvement has been the general change. Another noticeable feature is the rapidity with which improvement has made its appearance; in one case only has the treatment exceeded ten weeks. An improvement begins to be noticeable usually after the third inoculation. As regards disadvantages there are possibilities of two. In one instance the general reaction was severe enough to prevent the progressive increase in dosage which one aims at, but in such circumstances a repetition of the smallest tolerable dose induces an immunity which soon permits the use of the larger amounts. The second disadvantage is a local one—the treatment undoubtedly induces a considerable focal reaction. This may lead to the formation of abscesses and caseation, but the exhibition of minute doses is sufficient to prevent such a complication.

4. Nerve-Ending Anesthesia.—C. Clarke states that a 0.6 per cent. aqueous solution of beta-eucaine hydrochloride injected hypodermically has an immediate anesthetic effect on sensory nerve endings, while the nerve cords and fibers passing through the infiltrated area retain their conducting power unimpaired for some considerable time after the injection. During the course of many operations the surgeon divides comparatively few nerve endings, considering the size of the wound, for the knife cuts a cleft which afterwards gapes and exposes the tissue or organ to be operated upon. The primary objects of nerve-ending anesthesia are concentration and economy of anesthetic, for the actual quantity of beta-eucaine which can be safely injected into a patient is limited to about 6 or 7 grains. For the operation the tissues are first desensitized and then divided in successive layers. No interval need elapse between the injection of the anesthetic and the commencement of the operation, for beta-eucaine in 0.6 per cent. strength acts on sensory nerve endings practically at once. The chief points to be observed when using beta-eucaine hydrochloride in 0.6 per cent. strength as a nerve-ending anesthetic are: (1) Inject the anesthetic freely in the actual line of the incision; (2) keep strictly to the infiltrated tissues; and (3) operate immediately after the injection.

5. The Nature of Colon Bacilluria.—E. M. N. Williams believes that colon bacilluria is a late stage in a chronic disorder of the intestine, and that by traversing diseased intestinal walls the organism usually gains access to the urinary tract. The short straight female urethra has been supposed to offer facilities for an ascending infection, but it must be remembered that women are more subject than men to constipation, and therefore [illegible] conditions dependent upon it.

British Medical Journal.

August 24, 1912

1. Further Experience of the Specific Curative Action [illegible] Disease of Hypodermic Injections of Soluble Salts [illegible] L. Rogers.
2. Granule-Shedding in *Trypanosoma Gambiense*. H. S. Ranken.
3. The Results of Sanatorium Treatment. F. W. Burton Fanning and W. J. Fanning.
4. A Note Upon the Use of Antiformin in Sputum Examination, and on Staining Methods for the Demonstration of [illegible] Bacilli. G. H. K. Macalister.
5. The Pikrin Method of Staining Tubercle Bacilli. H. Wilson.

1. Hypodermic Injections of Soluble Salts of Emetine in Amebic Disease.—L. Rogers concludes that his method of the subcutaneous injection of soluble salts of emetine is a specific treatment of amebic hepatitis and amebic dysentery. The treatment is so rapidly beneficial in the latter as to be also of great diagnostic value between that and other causes of the passage of blood and mucus in the stools. Yet, strange to say, this remarkable remedy, according to the author probably the most active specific in the whole range of medicine, not excluding quinine and salvarsan, has for long been thrown away by those who pinned their faith in ipecacuanha sine emetina.

2. Granule-Shedding in Trypanosoma Gambiense.—H. S. Ranken states that the "infective granule" of trypanosomiasis occurs in *T. gambiense* in cases of sleeping sickness. Granule shedding has been observed, and the free granule has been seen in lymph glands and internal organs—liver, spleen, and lung. The granule is at first pyriform, but develops a flagellum. It is actively motile, and can be distinguished from "blood dust."

3. End Results of Sanatorium Treatment.—F. W. Burton Fanning and W. J. Fanning state that the first three years after sanatorium treatment are the crucial period. The patients who survive that time possess a greater expectation of maintaining their ascendency over the malady. Among the cases observed by them the authors note that during the first triennium after residence in the sanatorium there died 50.7 per cent. of the patients. During the second triennium there died 7.1 per cent. The authors are convinced that the results of the sanatorium treatment of pulmonary tuberculosis promise to become better and better. Attention must be concentrated on the early diagnosis of the disease. Experience has shown that the early consumptive does not discover himself, but must be actively sought out, and that for this work the service of an expert is required. At present the applicant for admission to a sanatorium is provided with a form certifying to the presence of more or less glaring physical signs in his chest. One should aim instead at utilizing the sanatoria for patients certified to have no physical signs of lung destruction.

4. The Antiformin Method of Sputum Examination.—G. H. K. Macalister concludes that by means of treating with 25 per cent. antiformin 1,051 samples of sputum found negative as a result of the direct examination, it was possible to demonstrate the presence of tubercle bacilli in 9 cases, that is to say in 0.54 per cent. of cases. This figure, though small in comparison with those obtained by other workers, is large enough to justify the use of this reagent when a large number of specimens are examined. The discrepancy between these results and others is possibly due to the detailed care which is expended upon the direct examination.

5. The Pikrin Method of Staining Tubercle Bacilli.—H. Wilson notes that this, which is also known as Spengler's method, is simple, and is conducted as follows: Having made a suitable film—(1) Stain with carbol fuchsin, warm, but without too much heat. (2) Pour off the stain without washing. (3) Pour on picric acid alcohol (consisting of equal parts of saturated solution of picric acid and absolute alcohol); after three seconds. (4) Wash with 60 per cent. alcohol. (5) Treat with 15 per cent. citric acid till yellow (thirty seconds). (6) Wash as in with 60 per cent. alcohol. (7) Counterstain with picric acid alcohol till lemon colored. (8) Wash with distilled water and dry gently at a low heat. With a little practice this will be found an easy and quick method, and the extra time involved in the staining will be more than compensated by the ease with which the bacilli are found if present, and the consequent less time spent at the microscope. This applies particularly to urinary sediments.

Berliner klinische Wochenschrift.

August 19, 1912.

Splanchnomegaly with Acromegaly.—Amsler mentions the difference of opinion as to the nature of this association. While one sees a primary splanchnomegaly, coordinate with acromegaly, others regard the former as secondary to the latter and due purely to stasis and increase of connective tissue. It is, of course, possible that true hypertrophy may be associated with this secondary hyperplasia. At an autopsy by the author were found acromegaly, tumor of hypophysis, enlargement of the tongue, spleen, kidneys, and liver. The testicles showed involutional changes, and a goiter was present. The heart was dilated and hypertrophied. There were choked disks and retinal hemorrhages. The abnormal tissues were all submitted to microscopic examination. The hypophysis tumor was found to be an eosinophile adenoma of the anterior lobe. The heart was in brown atrophy, and the hypertrophy was evidently primary, as neither arteriosclerosis nor valvular disease was present. The spleen was also the seat of primary hyperplasia. The adrenals showed hyperplasia of the cortical portion. The enlarged kidneys showed neither stasis nor fatty alteration, and the increase in size was due to hyperplasia of the glomeruli and tubules. The state of the enlarged liver was chiefly one of hyperplasia with a certain amount of hypertrophy. There was a slight enlargement of the pancreas, due to hyperplasia of Langerhans islets. Other histological finds were not important. The author, therefore, feels confident that the splanchnomegaly is not secondary to stasis, but while due evidently to primary hyperplasia the nature of the latter is obscure, although it may be considered as akin to the acromegaly itself.

Recent Results of Research in Tropical Medicine.—Hoffmann mentions first the spirochetotropic action of salvarsan in frambesia, relapsing fever, and ulcus tropicum. In all of these affections the new remedy exerts the same brilliant specific action as in syphilis. The affection known as venereal granuloma, a new venereal disease studied in South America, has been found to show noteworthy analogies to rhinoscleroma. The cause is not a spirochete, as has been claimed, and salvarsan has entirely failed to cure or favorably affect the disease. The affection known as parasitic thyreoiditis has been found to be due to a trypanosome, for which the big bedbug or conorhinus acts as host. The affection has therefore been styled coreotrypanosis (kopsis-bedbug). Much work has been done in the comparatively new field of the leishmaniosis. It has been learned that the so-called pian boil or Surinam yaws, long regarded as frambesia, is due to a leishmania introduced by a tick and hence is a congener of the Aleppo boil. Pellagra now seems to be attributable to a simulium or sandfly which acts as host for an unknown microorganism. The food theory has almost been abandoned. A similar etiology is being agitated for beriberi, although insufficient diet may furnish the predisposition if not the actual causation. Verruca peruana makes one more dangerous disease to be traced to an insect or tick host. The latter is not yet known, but is evidently one of nocturnal habits. We now know that this affection may occur in a benign form. The incubation period is three weeks. The actual cause is doubtless a hematozoa. Varicla is now fully recognized as a perennial disease in certain regions of the tropics and one which slays an immense number of people. A stable vaccine is indispensable and any detail of technique which will assist in preserving the same will protect in direct proportion to the degree of presentation. The lepra bacillus has been freely cultivated and is seen to be a streptothrix. As far as the bubonic form of the plague is concerned, it is certain that it is exclusively flea borne. No flea, no plague. The anti-rat crusade is, it is to be feared, ineffective in stamping out the disease as a whole, although a useful resource. One should not rest content with rat killing. The best prophylactic is prompt recognition and isolation of the first cases, because fleas quickly spread the disease from man to man.

Deutsche medizinische Wochenschrift.

August 22, 1912.

Thrombosis.—Ribbert states that in the majority of cases thrombosis is due to roughening of the vascular wall, which causes a precipitation of the blood plates. In other cases, secondary in character, unevenness of the first stratum of precipitation is the cause of further deposit. Slowing of the circulation is a contributory factor, for otherwise the bloodstream might wash away the deposit. In regard to the initial roughening of the vascular wall this may be due to a variety of dissimilar lesions. Some of these are chronic—arteriosclerosis, phlebitis, endocarditis, etc., while others are more abrupt, as an infection, an injury, the penetration of tumors. Slowing of the bloodstream is an auxiliary cause in a very large proportion of cases.

Excretion of Diphtheria Bacilli in the Urine.—Conradi and Bierast as a result of personal studies which thus far have been fragmentary conclude that in about one-third of all cases of diphtheria virulent bacilli reach the urine and are often in position to propagate the infection. The danger of direct contact infection is slight because of the great dilution, there being relatively few bacteria present in a given bulk of urine. However, the latter should be disinfected as long as it is infected. Under exceptionally favorable conditions the urine might contaminate the milk vessels and so infect a milk supply. In theory the urine might infect the patient's skin, causing for example, diphtheritic vulvitis.

Mercury as a General Spirillocide.—The efficacy of hydrargyrum against the spirochete of syphilis has influenced Kollé and two others to test it in diseases of similar causation. In fowl spirillosis the disease appears to yield to those mercurials which are of proved value in syphilis. Hence the affection of the fowl may be used as a sort of trial horse for new antisyphilitic combinations. The authors found that the presence of the benzol ring or pyrazolon nucleus in the mercury molecule gave evidence of an active form of remedy. In other words the latter combined an efficient portion of the salvarsan molecule with mercury. The next step was detoxication without impairment of therapeutic efficiency. The ultimate result was a substance sulfamino-dimethyl-phenyl-pyrazolon-hydrargyrum, believed to represent an effective general spirillocide, the chief value of which should of course be as an antisyphilitic.

Combination of Medicines.—Kochmann has investigated this subject from the viewpoint of Bürgi's teachings. As a result he disputes the correctness of the generalizations of the Swiss. He does not find that a minute dose of a synergist will necessarily potentize the ordinary dose of the principal remedy. He does not appear to deny that this phenomenon may be noted under particular circumstances, but the mechanism in different combinations may vary greatly. Hence instead of proceeding upon the supposition of the existence of a general law it will be much wiser to consider each special case as a law in itself, at least for the present. In combining remedies in addition to increasing the force by synergism we also have to neutralize the unpleasant collateral effects, hence the further merit of the special problem viewpoint.

Peculiarities in the Course of Varicella.—P. Merklen has observed in the course of varicella the following unusual complications: enlargement of the lymph nodes, torticollis, and extreme itching. These peculiarities are attributed to an abnormal reaction to the varicella virus.—*Annales de Médecine et de Chirurgie Infantiles.*

Insurance Medicine.

REPORTING OF NON-ORGANIC HEART MURMURS.

To the Editor of the Insurance Department:

Sir:—In regard to the discussion as to reporting all non-organic heart murmurs, I may be permitted to report a single experience. Some years ago I was examiner for a considerable number of leading life insurance companies, until I resigned because of lack of time to give the examinations suitable attention. During that period I examined for a New York company a man who seemed to be a perfect risk except for a slight murmur which I assumed was probably non-organic, but which I reported in my examination with a special letter of explanation and recommendation to the home office. The application was promptly rejected, somewhat to my humiliation. A few days later I received a telegram from a Milwaukee company, for which I was not examiner, directing me to examine the same applicant, and to report directly to them. I repeated the examination and sent the company a copy of my original letter to the first mentioned company. (The murmur was so slight that their local examiner had failed to detect it, but in the meantime they had received the adverse report of the New York company.) The application was held up by this company for a few weeks until the applicant was seen by a special examiner from the home office. He found, as it was later reported to me, just what I found, but recommended the application and the policy was issued.

A little later one of the medical directors of the company in New York, who was visiting the principal agencies, called on me, and we spent a delightful evening together. I brought up for discussion several problems that had presented themselves to me, and among others the matter of heart murmurs. I asked him if in one of these doubtful cases it would do any good to send the applicant, if the case was one of sufficient importance, to the home office, so that the medical directors could examine him for themselves. His reply was that that was unnecessary; that they had a hard and fast rule that no one with any trouble about the heart would be accepted, since no one could tell just what the trouble was, and the organ involved was too important. This statement was, of course, entirely satisfactory and settled the matter.

Within one year the Milwaukee company was called upon to pay the face of the policy. I was never, however, able to learn the immediate cause of death.

J. F. Baldwin, M.D.

Columbus, Ohio.

Interest in the subject of life insurance medicine would be stimulated if others would follow Dr. Baldwin's example by contributing a leaf from their experience, or by offering any criticism occurring to them of statements appearing in these columns.

Dr. Baldwin evidently encountered here one of the many difficulties connected with examining for life insurance. The description of his case has a familiar ring to one devoting much time to the subject, but it nevertheless is one from which a lesson may be learned. The three following points call for special notice.

1. A slight murmur was heard. Since Dr. Baldwin assumed that this was *probably* non-organic, there was some element of uncertainty in the diagnosis at the time, even in the mind of this experienced examiner: therefore the most advisable course to pursue would have been to recommend rejection, notwithstanding the fact that the murmur was subsequently pronounced non-organic by another authority. There should be no question, under all circumstances, as to giving the company the benefit of any possible doubt in regard to the character of cardiac affections. Heart murmurs may be looked upon as *positively* organic, doubtful, or *positively* non-organic. The last of these is of no importance and the *only* kind to be omitted from the report.

2. Doubtful cases will be rejected without hesitation, whether reported by the field or home office examiner. We do not agree with the medical director, however, who assured Dr. Baldwin that it is unnecessary to send applicants with doubtful cardiac conditions to the home office, or even to members of the home office staffs who happen to be in the neighborhood. One of the duties of medical directors is the personal inspection of doubtful or rejected risks whenever possible, and they will, according to our knowledge, always be found cheerfully ready to look over such cases in order to assure their respective companies that no injustice is being done to either the applicants or the agents.

3. The actual cause of death in the case cited would be a most interesting feature, especially as to how far, if at all, it was due to some defect in the circulatory system.—Editor.

Varieties and Motives for Suicide.—Schilling has recently compiled statistics on suicide in Prussia and the German Empire. Hanging occupied first place during the period 1883-1890, no less an average than 60 per cent. electing that mode of death. Less than 20 per cent. chose drowning, while over 10 per cent. shot themselves. Next in order comes the knife, and after that poison. As for motive, with women it is love and jealousy, with men matters involving their name and honor. Alcoholism is responsible for many suicides. More single than married people slay themselves, more unmarried women than unmarried men, but more widowers than widows. Students and soldiers show a proneness to suicide, and the lower schools have more victims than the upper ones. In Prussia during 1901-1903 there were 1,700 suicides among students, and the ratio should have increased since. In the Prussian army in 1883-1890 there were 30 suicides per 100,000 between the ages of 20 and 25. The enormous increase of suicide in our day gives a shocking picture. In the nineteenth century two millions of Europeans took their own lives. Since 1831 the number of suicides has increased 400 per cent., while the number of people has increased but 60 per cent. During the years 1869-1872 Prussia had 72 suicides per million. During the period 1891 to 1900 the total number was 60,518. In the German Empire during the year 1881 the number was 9,004, in 1903 it was 12,730. Suicide in children is also constantly increasing. In Prussia from 1879 to 1898 there were 1,708 cases, and since then the number has been steadily augmented. The same increase in suicide is to be noted elsewhere, save in Denmark, Norway, and Spain, where the rate is decreasing.—*Deutsche Versicherungszeitung*, No. 85, 1912.

Book Reviews.

Das Subaquale Innenbad. Von Privatdozent Dr. Anton Brosch. Unter Mitwirkung von Dr. Otto von Aufschnaiter. Zweite, vermehrte Auflage. Mit 10 abbildungen im Text. Price: 3 marks. Leipzic und Wien: Franz Deuticke, 1912.

Die Gesundheitskontrolle durch den Organsinn. Von Privatdozent Dr. Anton Brosch. Unter Mitwirkung von Dr. Otto von Aufschnaiter. Zweite, oermehrte Auflage. Price 2 marks. Leipzic und Wien: Franz Deuticke, 1912.

The authors of these two brochures have taken very much to heart Bouchard's famous aphorism that man is a laboratory of poisons, and have gathered numerous arguments in favor of "washing out" these poisons from the organism. They consider that the colon and the rectum are the chief offenders and that all of the present day methods of cleansing these organs are futile. Instead they propose the use of an "enterocleaner," which seems to be nothing but a very cumbersome apparatus for administering a high enema to a patient immersed in a bath. We have not gathered from the text what other motives have prompted the authors to manufacture this apparatus, but their ingenuity certainly deserves a better subject.

Traité International de Psychologie Pathologique. Directeur: Dr. A. Marie (de Villejuif). Comité de Rédaction: MM. les Professeurs Bagenoff (de Moscou), Bechterew (de St. Pétersbourg), Clouston (d'Edinbourg), Déjerine (de Paris), Grasset (de Montpellier), Lugaro (de Modène), Dr. Magnan (de Paris), Pilez (de Vienne), Ziehen (de Berlin). Tome Troisieme. Psycopathologie Appliquée. Par MM. les Prs. Bagenoff, Bianchi, Sikorsky, G. Dumas, Havelock-Ellis, Dr. Cullerre, A. Marie, Dexler, F. Helme, Pr. J. Wertheim Salomonson. Avec 338 gravures dans le Texte. Price 25 francs. Paris: Librairie Felix Alcan, 1912.

This is the third and last volume of this treatise. All three are bulky volumes, the present containing 1080 pages. The others were about equally large. The first was on General Psychopathology, the second on Clinical Psychopathology. The present treats of pathological psychology and opens with an original study by Professors Bianchi and Sikirsky on morbid mentality considered from the psychophysiological point of view. Sikorsky in writing the main part of this article has presented the subject in a most interesting way—at one and the same time ethnical, artistic, physiognomonic, clinical, and philosophic. There are numerous illustrations which depict the expression, attitude, etc., in various intellectual, emotional or volitional states, in various races, in both sexes and at various ages. Physical changes in the respiration, blood, voice, etc., are carefully studied. The methods of physiological and experimental psychology are pursued. An appendix by G. Dumas on "Pathological Sadness and Joy," and another by Havelock Ellis on "Psychopathic Sexuality" add much interest to this part of the work. Following this is a long chapter on comparative psychopathology, in which the question is delightfully treated from various points of view. Cullerre writes on examples of madness in history; Marie on madness in various races and countries; Marie and Bragenoff on collective psychopathology (epidemics of madness, insanity of families, etc.); and Dexler, on mental disorders in the higher types of animals. The book concludes with a chapter on the general causes of psychopathic disorders by Marie; and a chapter on laboratory methods by several authors. This volume, like the two which have preceded it, is of great value and of much interest. The collaborators are all men of authority in their various special fields, active workers and widely known.

Nervöse Angstzustände, und ihre Behandlung. Von Dr. Wilhelm Stekel, Wien. Mit einem Vorwort von Professor Dr. Siegmund Freud. Sweite, vermehrte und verbesserte Auflage. Price 17 marks. Berlin: Urban & Schwarzenberg, 1912.

This is the second edition of an important contribution to psychiatry, treating of the anxiety or fear neuroses. A critical comparison of it wtih the first edition, the author himself states, will disclose the fact that his conception of these neuroses has undergone considerable change. He still believes that the way to their proper understanding is through psychoanalysis; and his therapeutics remain the same. But the peculiar nature of these neuroses, as they appear to him, is disclosed with clearer insight. There is a broader development, perhaps rather than an alteration of the views that were set forth in his first edition. He mentions, also, a more extensive gradation or shading of conditions from the neuroses into the psychoses. The book is divided into three parts. The first is devoted to the anxiety neuroses proper; the second to anxiety hysteria; the third to diagnosis and treatment. The technique of psychotherapy is described. The second edition commends itself to us as affording a broader conception of the subject and of greater interest and value even than the first edition.

Common Disorders and Diseases of Childhood. By George Frederic Still, M.A., M.D. (Cantab.); F.R.C.P. (Lond.); Professor of Diseases of Children, King's College, London; Physician for Diseases of Children, King's College Hospital; Physician to the Hospital for Sick Children, Great Ormond Street; Honorary Member of the American Pediatric Society. Second Edition. Price $5.50. London: Henry Frowde, Oxford University Press; Hodder & Stoughton, 1912.

This work differs strikingly from the general run of textbooks on diseases of children in the personal note which permeates its pages. There is a wide departure from the stereotyped method of presenting the subject of pediatrics, with the dreary sequence of definition, etiology, pathology, etc. No effort is made to cover the entire subject, the author having been content to draw upon his own extensive experience in describing fully the most important of the diseases of children which the practitioner is called upon to treat. Particularly satisfying is the large space that is accorded to the details of treatment. The following subjects which were not discussed in the first edition are included in the present one: enlarged tonsils and adenoid hypertrophy, epilepsy, asthma, and hydrocephalus. The author's views on infantile paralysis and congenital syphilis have been considerably modified. It is difficult to pick out any one subject whose discussion more than any other displays the keen observation of the mature clinician whose views are not a mere repetition of what others have said and written. The author's attitude with respect to the operative treatment of hypertrophied tonsils and adenoids shows this originality. He decries the use of the fingers as a means of detecting the presence of adenoids. These, even when unmistakably present, and hypertrophied tonsils, need not be removed unless there is some definite evidence of impairment of the child's health, such as the presence of earache, deformity of the chest, etc. The definite risks of operation, the occasional bad sequelæ, the best time for operating, and the necessity of the operation being performed by one specially trained for the purposes are all carefully weighed. The author alludes to the frequency with which asthma occurs during childhood, and shows how many cases of this disease occurring in adults had their beginnings in the unrecognized chest conditions of early life. In discussing the treatment of threadworms the author emphasizes the futility in many of the cases of attacking the condition solely by means of local measures. Among the other topics exhaustively and entertainingly described may be mentioned the following: curd indigestion; flatulency and colic in infancy; abdominal pains in children beyond the age of infancy; bilious attacks, so called, in children; fever of obscure causation; jaundice in children; tuberculosis; rheumatism; some urinary disorders in childhood; mentally deficient children; head-nodding with nystagmus in infancy; and sleeplessness, loss of appetite, and some other symptoms. The various surgical measures in the treatment of hydrocephalus are gone into. In view of the increasing prevalence of poliomyelitis the author might have devoted some attention to the subject of the diagnosis of this disease during the prodromal stage. However, this is not a serious omission in a work of this kind, which treads only upon the firm ground of the author's own experience. The paper, typography and binding are in keeping with the high standards that have been maintained by the Oxford University Press. The book may be recommended without reserve as a valuable contribution to the already extensive literature of pediatrics.

Report from the Pathological Department and the Department of Clinical Psychiatry, Central Indiana Hospital for the Insane, 1909-1910 and 1910-1911. Vol. IV. Indianapolis: Wm. B. Burford, Contractor for State Printing and Binding, 1912.

The value of this report is attested in letters embodied from men connected with the colleges of Indiana. It is also evident that the opportunities for instruction afforded by the hospital to physicians and students availing themselves thereof are many and various. The report contains matter of interest to physicians of hospitals for the insane, to pathologists, and to specialists in nervous and mental diseases. It ought to encourage other hospitals to work along similar lines.

Society Reports.

AMERICAN NEUROLOGICAL ASSOCIATION.

Thirty-eighth Annual Meeting, Held at Boston, Mass., May 30-June 1, 1912.

DR. E. W. TAYLOR, VICE-PRESIDENT, IN THE CHAIR.

Thursday, May 30—First Day.

Note on the Examination of the Cerebrospinal Fluid for Arsenic Following the Administration of Salvarsan.—DR. CARL D. CAMP of Ann Arbor, presented this communication. The cerebrospinal fluid was withdrawn by lumbar puncture, following the administration of 0.6 gram of salvarsan by intravenous injection, and examined for arsenic in the laboratory of Dr. Victor C. Vaughan. The interval between the salvarsan injection and the lumbar puncture varied from 15 minutes to 40 hours in the seventeen observations that were made. Cases of tabes, paresis, cerebrospinal syphilis, secondary and tertiary syphilis not affecting the nervous system were utilized in this research. In only one case was there any trace of arsenic and in that case (3 hour interval) the patient was also being intensively treated with mercury and the trace was too small to make sure of its identity. Another case with the same interval showed no trace of arsenic. Arsenic does not appear in the cerebrospinal fluid as ordinarily administered, by intravenous injection, unless the dose is so large or so often repeated that there is danger of causing meningoencephalitis.

Dr. JOSEPH COLLINS of New York said that two years ago he began to treat cases of nervous syphilis with salvarsan and in that time had treated 137 cases. There had been cures, some of which had lasted eighteen months, which could not have been accomplished by anything else. Among these had been cases of brain syphilis, meningoencephalitis, vascular syphilis, tabes, syphilitic bulbar palsy, cases of syphilitic neurasthenia occurring in the wife or husband of patients who had had tabes or general paresis.

Dr. B. SACHS of New York said he had published one experience referring to eighty cases and since that time his experience had been doubled. He believed that no remedy that had ever been exhibited or employed in syphilis of the central nervous system had helped to such a degree as had salvarsan. He could not see that the presence or absence of arsenic in the cerebrospinal fluid would affect very much the question as to whether salvarsan ultimately benefits parasyphilitic or metasyphilitic changes in the nervous system. That it did bring about changes and affect the syphilitic virus as it circulated in the body there was no doubt. Both in private and hospital practice he had followed this matter closely and as a result he had never gone beyond 0.4 gram intravenously. This dose could be repeated after two or three or four weeks and it was much safer to give a small dose frequently repeated than to give a larger one.

Dr. DERCUM of Philadelphia said that in his experience the use of salvarsan in nervous syphilis depended upon the duration of the symptoms. The majority of paretics had not been benefited. As regarded tabetics he had seen no remarkable improvement. There had been cessation of tabetic pains and improvement in that way. One case was injected over a year ago by the intravenous method and pains were still absent. He always followed the salvarsan by mercurial inunctions just as vigorously as if salvarsan had not been used. One acted upon the germ and the other on the tissues. He believed that if the patient was not given both, he did not receive the maximum benefit.

Dr. KNAPP of Boston said that he could corroborate what Drs. Dercum and Sachs had said of salvarsan. He had not seen any disastrous results from it and certainly there could be no question of the beneficial effect.

Dr. CAMP said he had not intended to bring up any question of the efficiency of salvarsan in these cases. Of course it came up incidentally. If the effect of salvarsan was due to its antiseptic or germicidal effect, then arsenic or something which represented it should be present in the central nervous system. His experience as to the beneficial results had not been so favorable. The Argyll-Robertson pupils had not disappeared, there had been no return of the reflexes, though the patients had in many cases lost their subjective symptoms.

Clinical Confirmation of the Hypothesis That Disordered States in the Parents Produce Defective Offspring.—Drs. LUDLUM and CORSON WHITE of Philadelphia read this paper, stating that from an examination of 600 defective children they had concluded that changes in the chemico-physical environment of the developing ovum produced defective children. In all cases of arrested, retarded, or defective developments, all environmental factors should be most carefully eliminated before the especial defect should be stated as hereditary. Often, through defective nutrition or other untoward conditions of nurture, the organism was not able to perfect itself in all its parts, not from any germinal defect, but simply because it was not sufficiently nurtured, or because it was poisoned or otherwise injured as shown especially in children born during famine, in children of lead workers, etc. Statistics which exclude environment, as diseases or metabolic changes, etc., in the mother or father, are faulty, because, along with organic inheritance, ther must be a stimulus of an external developmental environment which supplies the stimulus without which hereditary potentials cannot be expressed. There was at least as much evidence for the retarding of the development of the ovum by untoward circumstances in the environment as there was for hereditary defect. The reason why statistics showed such a low percentage of syphilis or tuberculosis in defective children was because the majority of openly infected children died before their mental defect was definitely demonstrable and it was only those arising from parents with changed metabolism or low grade infection that persisted.

Dr. KNAPP of Boston said it was exceedingly rare to get an absolutely accurate history of the mother's condition during the period of pregnancy, but even without that it was often possible in those forms of disease, as those of more strictly degenerative character where heredity has been most often invoked, to obtain information as to the mother's condition during pregnancy which certainly must have a marked influence upon the development of the child. Such, for example, was an acute infection during the period of pregnancy which would certainly be explanatory of various degenerative conditions in later life.

An Examination of the Ductless Glands in Eight Cases of Dementia Præcox.—Drs. F. X. DERCUM and A. ELLIS of Philadelphia presented this paper in which they stated that their studies were prompted by the view that in dementia præcox we have to do with autointoxication. It was only relatively late in the disease that cases of dementia præcox showed quantitative mental loss, the striking early feature being confusion. In those cases the negative clinical history with regard to infections and intoxications from without, pointed to the conclusion that the toxins are produced within the body. That the ductless glands should be involved in this process of intoxication was extremely probable. That the glands of internal secretion were also closely interrelated to each other was another fact of prime importance. This relationship was no longer a matter of theory and of speculation but must be regarded as established. There was reason to believe that the organism in dementia præcox was one which unfolded or evolved imperfectly and irregularly and that at the time when adolescence takes place, the response on the part of the ductless glands was imperfect. During the last four years there had been studied clinically in the Insane Department of the Philadelphia General Hospital a large number of cases in reference to the ductless glands. Of these cases 8 came to autopsy. Cases 1, 3, and 5 suffered apparently from hebephrenia; 2 and 4 from catatonia, the 6th was catatonic at times, the 7th and 8th while classifiable with hebephrenia, were distinctly paranoid. All of these cases died of tuberculosis. In the cases of dementia præcox, the thyroid gland was studied in 8 cases, the hypophysis in 8, the adrenals in 8, the parathyroids in 5, the carotids in 6, the thymus in 1, and of the other glands, the testicles were studied in 1, the pancreas in 8, the spleen in 7, the liver in 8 and the kidneys in 8. One of the most notable points in the ductless gland findings was the underweight of the thyroid in 7 of the 8 cases. In addition 3 of them showed abnormalities in the colloid, quantitative or qualitative, and 4 decided regressive changes in the acinar epithelial cells. In the hypophyses there was less colloid than is usually found in a series of these glands. There was in all probability a disturbance in those cases of what Sajous has called the "adrenal system," *i. e.* of the chain made up of the pituitary, the thyroid and the adrenals. As far as the thyroid gland was concerned, the changes were to be explained in terms of inadequacy. Now Sajous has pointed out that in tuberculosis there was an inadequacy of the adrenal system and the thought naturally occurred that those eight patients suffered from dementia præcox for the same reason that they suffered from tuberculosis. It was rather a remarkable fact that the almost universal cause of death in dementia præcox was tuberculosis, and, if feebleness of resistance to the tubercle bacillus was due to the inadequacy of the adrenal system, there was reason to infer that this inadequacy pre-existed and that it was one of the factors in the makeup of dementia præcox.

Dr. Starr of New York said that about fifteen years ago he was exceedingly interested in the study of cases of cretinism and particularly of myxedema. It so happened that there came into his office within one week a case of myxedema in a young woman about eighteen and two cases that would now be classified as dementia præcox. The striking resemblance in the mental characteristics of the three individuals led him to regard the three cases as instances of maldevelopment, and to administer to them thyroid extract. The people were still under his observation. While there had not been a development of very great genius, yet these young women were perfectly able to live with their families, able to go about ordinary occupations and were fairly good members of society; whereas without that line of treatment they would long since have been confined to an asylum. On the basis of those cases he had put almost every case of dementia præcox that he had seen on thyroid treatment. In a good many of them it had done no good, but it had been of decided benefit in a certain number of cases and he was quite convinced with Dr. Dercum that treatment along that line with either the thyroid or pituitary gland, in a good many cases of dementia præcox was decidedly beneficial.

Dr. Onuf of New York said he had found on the whole that the manic-depressive form of insanity was quite responsive to thyroid treatment, as there was quite a distinct effect upon the psyche in the direction of elation. On the contrary, in the dementia præcox cases there was a peculiar irresponsiveness to the thyroid treatment.

Dr. McCarthy of Philadelphia said that in 500 autopsies at the Phipps Institute of patients dying with tuberculosis the thyroid was carefully examined and showed extensive lesions in a large percentage of cases. In this study of Dr. Dercum's, great caution should be used on account of these lesions.

Myasthenia Gravis.—Dr. M. Allen Starr of New York said he had gathered 250 cases of myasthenia gravis for purposes of analysis. Of these 142 were females and 108 males. The youngest case on record was 2 years and 9 months old, the oldest 72. The age of greatest frequency was between 20 and 30. It was true that the cranial nerves were chiefly affected. Thus ptosis or double vision had been recorded as the first symptom in 40 per cent. of cases. The difficulty in speech was more commonly due to paralysis of the tongue or lips. Difficulty in swallowing had been recorded in 8½ per cent. of the cases. A striking point of contrast between true bulbar palsy and myasthenia gravis was that diplopia and ptosis were present in the former and in true bulbar palsy double vision was very rare. The predominant symptom is weakness in the limbs; early fatigue on exertion and recovery of power on rest. Enlargement of the thymus gland had been observed in 28 per cent. Its absence in 72 per cent. seemed to show that it was not essential to the development of the disease. The pathology of the disease was obscure, but it had been shown that creatinin was diminished in the excretions in about 80 per cent. In the large majority of cases death occurred in six months. That the disease was an extremely serious one was shown by a large percentage of fatal terminations within a year of the onset. It was important to differentiate from diphtheritic paralysis and acute poliomyelitis of the acute bulbar type. The use of thyroid, pituitary and parathyroid gland seemed to have been very universal in the past ten years, but so far results of this treatment had not been successful. Strychnine and calcium lactate had been used in some cases with benefit.

Dr. Spiller of Philadelphia stated that cases of myasthenia gravis with recovery were sufficiently rare to make them worthy of record. Therefore he related the following: A middle-aged lawyer had marked symptoms. There were difficulty in swallowing fluids and ocular palsies. In dressing he would put on his trousers and find it a great effort to put on his coat and vest. He commenced his meal and after a few minutes would be unable to continue it. This was five years ago. He had a letter from him within the last two weeks. He had just returned from a journey of 2,000 miles and had been able to continue his cases in court with even more ability than before the disease occurred. Calcium lactate was no doubt of value in treatment. The speaker thought the avoidance of every form of fatigue, and the wearing of smoked glasses for the house and more deeply smoked ones for the street were essential in treatment.

Dr. Pearce Bailey of New York said the most characteristic manifestation of myasthenia gravis was its periodicity. Such collections as Dr. Starr has made were very timely, but at the same time, in view of the periodicity, he thought there was a danger in crowding together so many cases of giving myasthenia gravis a place which it did not deserve. There were so many varying types of the disease. He doubted whether anyone could distinguish between relapsing third nerve palsy and myasthenia gravis. Possibly myasthenia gravis was only a symptom-complex which came up in organic nervous disease and as a result of certain intoxications. If we could assume that the ductless glands were the basis of the disease, then the variation of the symptoms might be explained by whatever caused disturbance of their functions and the determination of the type by the particular biological alterations of the muscular system.

Dr. Mills of Philadelphia said he had seen quite a considerable number of cases of what he believed to be true myasthenia gravis and had published some of them. He had seen cases in which apparent recovery had lasted ten years or more. In his experience diseases, which had been supposed to be myasthenia gravis, had really been hysteria, disseminated sclerosis, forms of cerebrospinal syphilis and rarely cases of post-infectious paralysis and one or two cases of what were supposed to be poliomyelitis, or polioencephalitis inferior or superior. Treatment in his experience had been rest, with precautions, and the rather increasing use of nux vomica or strychnine.

Dr. George A. Waterman of Boston said that myasthenia gravis was not a disease of the nervous system. All its clinical phenomena pointed to toxemia. He pointed an analogy between myasthenia gravis and that other disease of the glands characterized by persistent thymus and tremendous over-development of lymphatic structures. There was a distinct analogy between lymphatism with sudden death and relaxation and palsy of muscles due to myasthenia gravis.

Dr. N. E. Brill of New York said it was worth while to give consideration to choking of the lymphatic spaces. In myasthenia gravis the condition of the muscle prevented rapid deterioration. This was closely related to what was found existing in normal fatigue. If the normal muscle was stimulated and the products of metabolism were prevented from being carried off, very quickly this state of fatigue set in, so that further contractions were impossible.

Dr. Starr, in concluding, protested against Dr. Bailey's supposition that the condition was one that might arise under any circumstance and that it did not present a typical assemblage of symptoms forming a disease. Dr. Starr maintained that there was a clinical syndrome that was perfectly characteristic and could not be mistaken for anything else.

Acute Bulbar Palsy Following in the Wake of Mumps; a Contribution to the Literature of Poliomyelitis.—Dr. Joseph Collins and Dr. Robert G. Armour of New York presented this paper which was based on a study of an 11-year old boy who complained eight days after the onset of a mild attack of mumps, of dizziness, headache, and malaise. The next day he staggered on attempting to walk and had partial paralysis of the left face. He developed rapidly dyspnea and died on the third day of the illness. Section through the oblongata, pons and crura showed a severe inflammatory round cell infiltration most pronounced at the superior level of the bodies diminishing in intensity in both directions from this level. The round cells appeared similar to those seen in poliomyelitis. There were a few cells resembling polyblasts. The greater number of cells were lymphocytes. The ganglion cells showed all stages of chromatolysis.

Dr. Israel Strauss of New York said that it appeared to him that Dr. Collins' case, interesting as it was, was simply a case of poliomyelitis coming on in an individual who happened to have had an infectious parotitis.

Dr. Sachs of New York said that without wishing to criticise the interpretation of the case at all, he thought it would be perfectly safe to speak of a case of that sort as a case of infectious polioencephalitis and leave the question as to whether it was really identical with a poliomyelitis unsettled for the present.

Dr. N. E. Brill of New York said that the parotid glands were peculiarly involved in general septic conditions and it was possible that the inflammation of the parotid glands was the beginning of a general infectious process secondary perhaps to a middle ear disease, inasmuch as Dr. Collins had stated that the tympanic cavity was filled with a serous effusion.

Dr. Collins said that he had never in 25 years' hospital experience encountered a case like that reported. It seemed to him extraordinary that a boy apparently well should feel a little dizzy on Wednesday and on Friday be dead; then to send specimens to skilled pathologists and have them say that they could not distinguish the lesions from poliomyelitis. Therefore, he ventured to say that it might be a contribution to the pathology of poliomyelitis.

Cerebellotegmental Lesion from Occlusion of Branches of the Superior Cerebellar Artery.—Dr.

Charles K. Mills of Philadelphia read this paper which embodied investigations into the literature of the organic basis of emotional expression, a study of the functions of certain tegmental tracts, histological investigations by means of serial sections and a study of the distribution of the superior and posterior inferior cerebellar arteries. The microscopical investigation was made by Dr. W. G. Spiller and the study of arterial distribution by Drs. Ludlum and E. M. Williams. Dr. Mills' conclusions were mainly based upon his study of the literature of the subject and on the complete investigation of the particular case which formed the basis of the article. Other unreported cases were included. The persisting symptom-complex in this case for four years from the time of the original attack until the death of the patient was ataxia in the left upper and the left lower extremity, complete right-sided deafness, loss of the senses of pain, extreme heat and extreme cold and impaired tactile discrimination, on the right half of the body, with preservation on both sides of light touch and the senses of deep pressure and of position, passive movement and stereognosis; the retention, everywhere, of voluntary movement and complete paralysis of emotional expression on the right side of the face. The brain on close inspection by the naked eye showed a marked depression in the cerebellum above the dentatum, and this body as well as the tissues above it were much atrophied. The vessels on the upper surface of the left cerebellar lobe were much smaller than on the right. Many of the branches of the superior cerebellar artery were occluded. These occlusions were especially those of the branches of the ventral part of the corpus dentatum and the adjacent part of the superior cerebellar peduncle. The cerebellar nuclei in the neighborhood of the left corpus dentatum were equally affected. At least the upper two-thirds of the left superior cerebellar peduncle was degenerated, as a consequence of which the right nuclear ruber was at least one-third smaller than the left, but it apparently contained a full number of the nerve cells. The left mesencephalic root of the fifth nerve and the left lateral lemniscus were much degenerated. The whole process was evidently syphilitic as shown by much round cell infiltration in the pia. As the result of the study of the supply of the anterior superior and the posterior inferior cerebellar arteries it was found that the anterior superior supplies a considerable portion of the border of the pons and middle peduncle and the anterior lateral portion of the cerebellar cortex. The infiltration from stain extended into and included a portion of the superior cerebellar peduncle on its way from the dentate nucleus, and the anterior lateral portion of the dentatum itself. The black stain of the inferior cerebellar artery infiltrated an area of considerably less size. This included about the posterior one-third of the cortex of the cerebellar lobe and the vermis, and the posterior and posteromedian portions of the dentate nucleus. In addition to the above supplies, many minute black points or dots were found throughout the lateral tegmentum in the most caudal portion of the pons, showing the possibility that this artery in addition to its supply to the oblongata also reaches forward to some of the pontine tracts in the region of the medium lemniscus. More lateral to this the supply seemed to be that of the anterior superior. After reviewing the hypothesis of von Bechterew, Lewandowsky, and others, Dr. Mills submitted his own views of the interior mechanism of emotional expression. These included the predication of an emotional motor zone, especially developed in the right frontal lobe, anterior to the precentral convolution, this being connected by way of the internal capsule and lenticular nucleus with the nucleus ruber and the ventral pontile nuclei, the afferent portion of the mechanism being by way of the dorsal pontile nuclei, special tracts in the tegmentum to the thalamus, tracts from the thalamus to the parietal lobe and thence to the frontal emotive zone, reenforcement taking place for coordination and muscular tone from the cerebellum by way of the superior cerebellar peduncle. The histological study of the chief case of the paper affords some new light upon the afferent lemniscal tracts.

Dr. James J. Putnam of Boston said he had recently seen in consultation a case very much like the one reported. This condition was sufficiently rare to make it valuable to collect such cases. He had seen only two similar cases.

Dr. Theodore Diller of Pittsburg said that he would like to refresh Dr. Mills' memory in regard to a girl about 14 years of age, whom Dr. Mills and he examined two years ago. She had symptoms indicative of a brain tumor and had one symptom which was especially marked, that was a very distinct hemiataxia. An operation was done over the cerebellum on the side which seemed to be implicated and nothing was found, but the death of the patient some little time later showed a tumor of considerable size almost in the region which Dr. Mills has indicated as present in his case, namely, involving the dentate nucleus and superior peduncles. The red nucleus seemed to be entirely intact.

Tabes Dorsalis: The Exhaustion Theory of Its Pathogenesis with Experimental Evidence.—Dr. Colin K. Russel of Montreal presented this communication in which he stated that the pathogenesis of tabes dorsalis was admittedly unsatisfactory. In tabes there was probably a slowly acting toxin which influenced cell metabolism in a deleterious manner so that the building up process was relatively insufficient and the cells became exhausted. The cells which were most constantly active, and which we would expect to be affected first, were those cells which maintained the tone and position of the muscles, especially those muscles which were most frequently called into activity. The distal parts of the neurone underwent atrophy and thus the peculiar anatomico-pathological condition of the fibers in the posterior columns might be accounted for. The practical absence of any lesion in the posterior ganglia was also explicable. The reaction of the pupils to light, being far more frequent and active than that to accommodation, produced an exhaustion of the neurones subserving that function, giving rise to the well-known Argyll-Robertson pupil. Clinically this theory explained also the fact that men were more frequently affected than women and why the natives of tropical countries were practically immune to the disease. The lightning and girdle pains were probably due to a definite syphilitic process in the spinal meninges as was shown among other things by their alleviation after salvarsan treatment. Following up this theory the writer had been able to produce the Argyll-Robertson pupil in rabbits which had first been inoculated with the *Treponema pallidum*, by subjecting them to alternating light and darkness, by means of a miniature revolving lighthouse. Control rabbits which had not been inoculated did not develop any abnormality of the pupil although placed under the same conditions, and rabbits which had been inoculated but had not been subjected to the light stimulation also remained normal.

Dr. Sachs of New York said he had tried ever since Edinger first formulated his theory to reconcile the facts with the theories or the theories with the facts, but could not say that he had adopted the theory as anything more than an interesting theory. It had not proved particularly helpful in the explanation of the morbid processes. It seemed easy enough to explain a number of the morbid symptoms on the basis of the theory, but, on the other hand, there were a number of cases that we all see in which just the opposite course occurs to what one would expect if the theory were true.

Dr. Collins of New York said he was in a position today to say that a case had come under his observation in which the Argyll-Robertson pupil existed according to the opinion of three competent trained neurologists and that it disappeared after active salvarsan therapy. If Dr. Russel's very ingenious explanation, or rather his explanation of the Argyll-Robertson pupil based on this ingenious experiment which he had carried out, was true, and Dr. Collins saw no reason why it should not be considered to be so, then it was likely that that and the other cardinal symptoms of the disease might be relieved if attacked sufficiently early by appropriate therapy. These observations support the contention that tabes is in reality a meningitis which is an expression of a syphilitic infection.

Dr. Hugh T. Patrick of Chicago said he had not been able to find facts in his practice to support Edinger's theory. On the contrary, he had been inclined to think that such patients as pursued an occupation making a particularly strong call upon one set of extremities were apt to suffer on that side less. He narrated the case of a painter of pictures who was and always had been very sluggish in regard to general exercise, who became rapidly exceedingly ataxic in his legs, but painted his pictures extraordinarily well.

Dr. F. W. Langdon of Cincinnati said that Dr. Russel had given an extremely valuable contribution to what might be termed the rational pathology of tabes. Some 15 years ago in a paper upon the subject Dr. Langdon alluded quite emphatically to the biological reason for the preponderance of tabes in the lower extremities in man. Man had for a comparatively few generations been walking on his hind legs, so to speak, and those were the neurones that had no rest. The muscle sense was continually acting even in the sitting position and more so in standing. Some years later, when Edinger's exhaustion theory was promulgated, Dr. Langdon called attention to not only the upright position as causing this constant strain, but also the enormous demand on the sensory light reflex of the pupil.

Dr. Russel, in closing, said he had found a great many patients who had not done well on the Fraenkel treatment.

In those cases it had practically always turned out that in their enthusiasm to get well they had overstepped the limit and done too much and they had exhausted themselves rather than reeducated themselves. The only way to prevent this was to take the pulse as an indication as to when the patient was becoming exhausted. In every case that he had experience with where this had been done the patients had become reeducated.

(To be continued.)

THE AMERICAN DERMATOLOGICAL ASSOCIATION.

Thirty-sixth Annual Meeting, Held at the Barnard Free Skin and Cancer Hospital, St. Louis, Missouri, May 23, 24, and 25, 1912.

THE PRESIDENT, DR. GROVER W. WENDE OF BUFFALO, IN THE CHAIR.

President's Address.—This consisted of a brief review of the history of American medical journalism in the field of dermatology.

A Critical Study of the Organisms Cultivated from the Lesions of Human Leprosy, with a Consideration of Their Etiological Significance.—Dr. CHARLES W. DUVAL of New Orleans, by invitation, presented a paper on this subject, which embraced a critical review of the acid-fast organisms that had been cultivated from the lesions of human leprosy in various parts of the world, together with an efficient cultural method which might be of distinct value in the early diagnosis of leprosy. The following conclusions were offered: 1. From a bacteriological study of 29 cases of leprosy, they had cultivated an acid-fast bacillus from 22 of these cases. 2. A chromogenic strain similar in all essentials to that described by Clegg was recovered from fourteen cases. 3. Under certain conditions the Clegg culture grew as (*a*) non-acid-fast streptothrix; (*b*) non-acid-fast diphtheroid; and, (*c*) an acid-fast bacillus. 4. Eight cases yielded an organism which thus far was distinctly different from Clegg's bacillus in its biological character, growing only upon special media and not producing pigment. 5. Animal experiments undertaken for the purpose of differentiating the two types recovered from the human leprous lesion and to fix their etiological status were not regarded by the author as conclusive. 6. Serological tests, especially those performed with highly immune sera, suggested that the leprosy bacillus of Clegg was not related to the non-chromogenic slow-growing culture from leprosy. 7. The role played by the chromogenic bacillus of Clegg in the production of leprosy was as yet an unsettled question. 8. The non-chromogenic strain, while behaving according to most of our notions regarding a pathogenic organism, had likewise not up to the present been proven to be the cause of leprosy, although he was impressed with the probability of such a rôle being eventually attributed to it, and he considered that it deserved more serious attention than any strain so far cultivated from the human leprous lesion. 9. The wide variation in morphology and staining reaction for certain cultures which subsequently became rapid growers and chromogenic explained the interpretations of European writers that the *Bacillus lepræ* was a bacterium of such pleomorphism that it could be recognized as a diphtheroid, a streptothrix, and an acid-fast bacillus.

DR. ANDREW P. BIDDLE of Detroit referred to two cases of leprosy that had recently come under his observation in Michigan, and he stated that the occurrence of these sporadic cases in localities where leprosy was rarely found emphasized the importance of anything that threw more light upon the early diagnosis of the disease.

Experience with Noguchi's Luetin Reaction.—Dr. HOWARD FOX of New York said the successful cultivation of the *Spirochæta pallida* by Noguchi had opened up new opportunities for the experimental investigation of syphilis. A direct result of this achievement was the luetin reaction, a diagnostic cutaneous test similar to that of von Pirquet for tuberculosis. The reaction was produced by the injection of a suspension of the *Spirochæta pallida* that had been grown in pure culture and then destroyed by heat. In his experience with luetin, the speaker said he had followed the technique described by Noguchi in his original communication (*Jour. Exper. Med.*, XIV, 1911.) His experience with luetin was limited to 100 cases, 49 of which were cases of acquired syphilis, while the others were used as control cases and were suffering from various non-specific diseases of the skin. In fourteen cases of active secondary syphilis, the luetin reaction was positive in six cases, or 43 per cent.; the Wassermann reaction was positive in 100 per cent. of the cases. In 33 cases of tertiary and latent syphilis the luetin reaction was positive in seventeen, or 51 per cent.; negative in fourteen, and doubtful in two. The Wassermann reaction showed varying degrees of positiveness in nineteen, or 65 per cent., and was negative in ten. In four it was not performed. Most of the patients in whom a positive reaction occurred had continued up to the present time to show a bluish maeule or tiny keloid at the point of the injection. Dr. Fox said that before an opinion of real value could be expressed upon the luetin reaction it would be necessary to study the results of a very large number of clinical investigations. His own experience was too small for definite conclusions to be drawn therefrom. It was, however, his hope and belief that the luetin test would prove to be of some value as a diagnostic aid, particularly in cases where the Wassermann reaction failed to give any definite information.

Erythema ab Igne.—Dr. M. B. HARTZELL of Philadelphia said that although most English and American treatises on diseases of the skin mentioned briefly the reticulate erythema and pigmentation which might follow the long-continued application of heat to the skin, very little was to be found about this curious and rather interesting affection in dermatological literature. French and German authors of recent treatises on diseases of the skin did not mention it at all. Indeed, the English dermatologists were apparently the only ones who saw it with any degree of frequency, and they were, consequently, the only ones who seemed to have a real practical acquaintance with it. While the malady was found principally in those who had exposed the skin to the heat of the stove or furnace, and in consequence was usually situated on the legs, it might follow exposure to other sources of heat and might be found in other situations. In one of the four cases reported by Dr. Hartzell the disease was situated in the lumbar and sacral regions, and had followed the long-continued application of a hot water bag. It was worthy of note that in all four of the cases here reported the patients were decidedly below the normal standard of health, either as the result of previous illness, alcoholism, or old age, and this seemed to be true generally. Indeed, he doubted very much whether the disease could occur in an ordinarily healthy individual. Although the inflammation rarely passed beyond the erythematous stage it might go on to decided thickening and even vesiculation. The result of the pathological examinations showed very clearly that the affection was an inflammatory one and not simply a staining of the skin, as had been claimed.

The Single-Dose X-Ray Method.—Dr. GEORGE M. MACKEE and Dr. JOHN REMER of New York presented a paper on this subject. The authors stated that the term single-dose *x*-ray method did not mean that the maximum amount of benefit must necessarily follow a single application. It was intended to signify a radical departure from the former fractional-dose method where small and repeated applications were made until the desired result was obtained. This often necessitated from fifteen to a hundred or more exposures in the treatment of a small rodent ulcer. With the single-dose method, on the other hand, from one to four treatments might be required in the treatment of a given lesion. Furthermore, a definite attempt was made to measure the amount of *x*-ray administered, so that the method was scientific and was associated with a certain degree of accuracy. Roughly speaking, there were two methods of administering the massive or single *x*-ray dose; one in which the quality of the rays was ascertained by the use of instruments, while the quantity was estimated by the duration of the exposure, the amount of current employed, and the distance of the tube from the lesion; the second method consisted of employing the usual qualitative instruments, with the addition of estimating the quantity by the use of pastilles composed of platino-cyanide of barium. Although both methods were difficult, and neither could be said to be absolutely accurate, the first was certainly the more unreliable and was associated with more troublesome and perplexing details. After describing the technique of both of these methods the authors passed on to the advantages of the single-dose method, by which it was now possible to obtain a defluvium of the entire scalp in from sixteen to twenty-five minutes. The entire surface of the body, if necessary, could be given a normal dose in a very short time. This possibility, however, could not be made use of in diseases such as mycosis fungoides, for fear of causing toxic symptoms. In this condition, where there were many lesions, it was only necessary to expose each lesion once, the treatments being given once or twice a week. Sycosis would usually heal under the influence of a single epilating dose. In epithelioma, under the old fractional-dose method, the tumor or ulcer would

often improve for a while and then continue to grow worse in spite of additional treatment. This did not appear to be the case since the advent of the single-dose method. By this method better results were obtained in many of the cutaneous diseases amenable to *x*-ray treatment, but it was not successful, so far as the authors were aware, in curing cutaneous affections that were not benefited by the older method. The technique of the single-dose method was difficult and exacting, and the novice was advised to become thoroughly acquainted with it through experimental work before employing it in practice.

(*To be continued.*)

State Medical Licensing Boards.

STATE BOARD EXAMINATION QUESTIONS.

NEVADA STATE BOARD OF MEDICAL EXAMINERS.

May 6, 7, and 8, 1912.

ANATOMY.

1-2. Give location of the coronary sinus and its length. What valve guards its termination?

3. Describe the circle of Willis.

4. Give origin, insertion, and action of the rectus capitis anticus major muscle.

5. What organs are supplied with blood from the celiac artery?

6. What is a synarthrodial joint? Give an example.

7. Give location of the capsules of Bowman.

8-9. Give description and location of Cowper's glands. What glands in the female correspond with Cowper's in the male?

10. Name the nerves that supply the tongue with taste, sensation, and motion.

PHYSIOLOGY.

1. What inorganic salts does muscular tissue contain?

2. What is the specific gravity of human blood? (*a*) What is the relative weight of the blood to the body?

3. What functions have the leucocytes?

4. What are enzymes?

5. What is lymph?

6. What part does the liver play in the general nutrition of the body.

7. What is the origin and significance of urea? (*a*) Normally, what per cent. does urine contain? (*b*) What quantity is eliminated in twenty-four hours by the healthy adult?

MATERIA MEDICA AND THERAPEUTICS.

1. Write a complete prescription for a cathartic pill—not official—containing at least three active ingredients.

2. Define a mixture, a sinapism, a lotion, a liniment.

3. Give the habitat of ipecacuanha, coca erythroxylon, cascara sagrada, strophanthus.

4. Describe the physical properties of tr. ferri chloridi, acidum salicylicum, liquor plumbi subacetatis.

5. Write a prescription for a diarrhea mixture containing at least three drugs.

6. Name three remedies you might use in a case of typhoid fever. Give reasons.

7. Differentiate the physiological action of opium from chloral hydrate.

8. In heart conditions, when would you use nitroglycerin, strychnine, strophanthus, digitalis?

9. Give proportionate dose for child of two weeks, one year, and adult. Give exceptions.

10. Give a classification of cathartics, with example of each.

CHEMISTRY AND TOXICOLOGY.

1. Write the chemical formulæ to represent the reaction that takes place in boiling Fehling's solution with diabetic urine.

2. Write three prescriptions in which a chemical change takes place. Give results.

3. Give the chemical name for Epsom salt, Rochelle salt, tartar emetic, copperas, blue vitriol.

4. Describe a method for detecting arsenic.

5. How would you prepare an antidote for arsenic?

6. Differentiate acute alcoholism from concussion of the brain.

7. Give the symptoms and treatment of a case of cannabis indica poisoning.

8. What is the cumulative effect of digitalis?

9. Give symptoms and treatment of a case of attempted suicide by a mineral poison.

10. Give symptoms and treatment of a case of attempted suicide with a vegetable poison.

BACTERIOLOGY.

1. Describe in full one method of staining for bacteria.

2. Describe the *Diplococcus lanceolatus* of Fraenkel and the method of staining for it.

3. Differentiate between the *Micrococcus catarrhalis* and the *Micrococcus intracellularis meningitidis*.

4. Define epidemic, endemic, pandemic, bacillus, toxins, alexin, faculative anaerobic?

5. Describe the *Streptococcus erysipelatis*?

6. Differentiate bacteriologically between diphtheria and tonsillitis.

7. Describe the spirochete of Vincent's angina.

8. How would you determine the presence of pathogenic bacteria in milk?

9. Given a specimen of sputum, how would you determine whether the tubercle bacillus was present or not?

10. If you were a health officer what means would you take to prevent the spread of a contagious disease?

PATHOLOGY.

1. Differentiate between carcinoma and sarcoma

2. Give in detail the pathology of the first stage of lobar pneumonia.

3. Give the lesions occurring in a case of amebic dysentery.

4. Describe the pathological changes that occur in hypertrophic cirrhosis of the liver.

5. Give the microscopical appearance of the blood in progressive pernicious anemia.

6. Give the pathology of chronic parenchymatous nephritis.

7. What do you mean by the term "malignant growth"? Give examples.

8. Give the pathology of acute interstitial myocarditis.

9. Give the pathology of amyotrophic lateral sclerosis.

10. Describe the two chief degenerative changes in a tubercle.

PRACTICE OF MEDICINE.

1. How does dysentery differ from ordinary diarrhea?

2. Differentiate empyema and pleurisy with effusion.

3. What are the physical signs of aortic regurgitation?

4. Outline the area of normal liver dullness.

5. What are the causes of endocarditis?

6. How do human beings acquire tapeworm?

7. Mention the causes and symptoms of gastralgia.

8. Give the physical signs of a cavity of the lung in pulmonary tuberculosis.

9. What is bronchorrhea?

10. Why does ascites occur as a consequence of cirrhosis of the liver?

OBSTETRICS.

1. Give pathological anatomy of a vesicular mole.

2. Give etiology and diagnosis of rachitic pelvis.

3. What effect has placental syphilis upon the fetus?

4. Give cause of intrauterine amputations.

5. From what month does the placenta date?

6. What is the principal cause of eclampsia?

7. What position does the uterus assume during the first three months of pregnancy?

8. What are the most grave gynecological diseases to anticipate after delivery?

9. Describe an operation for tubal pregnancy.

10. Give clinical history of ruptured uterus.

SURGERY.

1. What are the symptoms of air embolism? (*a*) Give treatment. (*b*) Surgical operations in what regions are most liable to be followed by this accident?

2. What is the first surgical principle in the treatment of infected wounds? (*a*) Give in minutiæ your treatment of infected wounds.

3. Give treatment of rattlesnake bite.

4. Reduce a dislocation at the elbow, both bones of the forearm backward. (*a*) Give after treatment.

5. Give technique of operation for appendicitis.

6. What is Pott's disease? (*a*) How would you treat this condition?

7. Describe burns of the first, second, and third degrees. (*a*) Give treatment.

8. For the cure of what disease is neurectomy employed? (*a*) In what cases may success be expected. (*b*) Give technique of operation.

9. What are the symptoms of complete and partial injury of the spinal cord?

10. Give treatment of lymphangitis.

GENITOURINARY AND DERMATOLOGY.

1. How would you treat a case of urethral chill?

2. What are the symptoms and treatment of gonorrheal rheumatism?

3. Give symptoms of stone in the bladder.

4. What are the symptoms and treatment of acute prostatitis?

5. How would you treat a case of chronic posterior urethritis?

6. What are the causes, symptoms, and treatment of verruca?

7. Describe seborrhea.

8. What is hypertrichosis?

9. What are the causes, symptoms, and treatment of vitiligo?

10. Give the diagnosis and treatment of an epithelioma.

ANSWERS TO STATE BOARD EXAMINATION QUESTIONS.

NEVADA STATE BOARD OF MEDICAL EXAMINERS.

May 6, 7, and 8, 1912.

ANATOMY.

1 and 2. The *coronary sinus* is situated in the posterior part of the left auriculoventricular groove. It is about one inch in length. Its termination is guarded by the Thebesian valve.

3. The *circle of Willis* is situated at the base of the brain. It is formed in front by the anterior cerebral arteries, which are connected by the anterior communicating artery; behind by the two posterior cerebral arteries, which are connected on each side with the internal carotid by the posterior communicating arteries.

4. The *rectus capitis anticus major* muscle arises from the anterior tubercles of the transverse processes of the third, fourth, fifth, and sixth cervical vertebræ, is inserted into the basilar process of the occipital bone. It draws the head forward after it has been drawn backward; it also serves to flex the head and to rotate it.

5. The *celiac artery* supplies the stomach, lower end of œsophagus, lesser omentum, liver, gall-bladder, pancreas, and spleen.

6. A *synarthrodial joint* is one in which there is no motion; the bones are in almost direct contact, and there is no joint cavity. *Example:* The articulation between the occipital and the sphenoid bones.

7. *Bowman's capsule* surrounds the glomerulus of the kidney.

8 and 9. *Cowper's glands* are two small rounded bodies behind the membranous portion of the urethra, between the two layers of the triangular ligament. In the female the glands of Bartholin correspond to Cowper's glands in the male.

10. The *tongue* is supplied with *taste* by the chorda tympani and glossopharyngeal; with *sensation* by the inferior maxillary and glossopharyngeal; and with *motion* by the hypoglossal nerve.

PHYSIOLOGY.

1. The *inorganic salts in muscular tissue* are: Chlorides, sulphates, and phosphates of sodium, potassium, calcium, magnesium, and iron; chiefly potassium phosphate.

2. The specific gravity of human blood is about 1055 to 1065. The relative weight of blood to the body is about 1:13.

3. *Function of the leucocytes:* (1) To serve as a protection to the body from the incursions of pathogenic microorganisms; (2) they take some part in the process of the coagulation of the blood; (3) they aid in the absorption of fats and peptones from the intestine, and (4) they help to maintain the proper proteid content of the blood plasma.

4. An *enzyme* is a body produced by a living organism, or cell, and is capable of effecting certain chemical changes without itself undergoing change in the process.

5. *Lymph* is an alkaline fluid derived from the blood and found in the lymphatic vessels, in the thoracic duct, and in the large lymphatic trunks.

6. The *functions of the liver* are: (1) The secretion of bile; (2) the formation of glycogen; (3) the formation of urea and uric acid; (4) the manufacture of heat; (5) the conversion of poisonous and harmful substances into inert material.

7. *Urea* is one of the most important of the end products of proteid metabolism. It is the main form of the nitrogen eliminated. The urine normally contains about 2 per cent. of urea, and a healthy adult eliminates about 500 grains of urea in twenty-four hours.

MATERIA MEDICA AND THERAPEUTICS.

1. R. Scammonii
Jalapæ } āā gr. ij.
Saponis
Tinct. zingiberis q.s. M.
Fiat pilula.

2. A *mixture* is an aqueous preparation which contains insoluble substances in suspension. It is intended for internal use.

A *sinapism* is a mustard plaster.

A *lotion* is similar to a mixture, but is for external use.

A *liniment* is a preparation consisting of a solution of some medicament in alcohol or oil or water, and is applied by friction to the skin.

3. The *habitat* of ipecacuanha is Brazil to Bolivia; of coca erythroxylon, Peru and Bolivia; of cascara sagrada, Idaho and westward; of strophanthus, tropical Africa.

4. *Tinctura ferri chloridi* is a bright brownish liquid having a slightly ethereal odor, an astringent taste, and an acid reaction.

Acidum salicylicum is a white crystalline powder, or prismatic needles, odorless, of a sweetish taste which becomes acrid, not very soluble in water, but very soluble in boiling alcohol.

Liquor plumbi subacetatis is a clear, colorless liquid with a sweetish, astringent taste and an alkaline reaction.

5. R. Tincturæ opii
Tincturæ capsici
Tincturæ rhei } āā 5j. M.
Spiritus camphoræ
Spiritus menthæ piperitæ
Sig.: Thirty minims in water.

6. Cold water, to reduce the temperature; turpentine, for tympanites; opium, for hemorrhage from the bowels.

7. *Chloral* is of no use if there is pain; it lowers the body temperature, and has no effect on the pupil.

Opium relieves pain, makes the skin warm, and causes itching; and contracts the pupil.

8. Digitalis is indicated in diseases of the heart: (1) when heart action is rapid and feeble, with low arterial tension; (2) in mitral lesions when compensation has begun to fail; (3) in nonvalvular cardiac affections; (4) in irritable heart, due to nerve exhaustion. Digitalis is contraindicated in diseases of the heart: (1) in aortic lesions when uncombined with mitral lesions; (2) when the heart action is strong, and arterial tension high.

Strophanthus is used as a cardiac stimulant; in mitral or aortic obstruction; in cardiac dilatation; palpitation; alcoholism; exophthalmic goiter, nephritis; when heart action is feeble but rapid, and accompanied by low arterial tension; in general, same as digitalis.

As compared with digitalis, strophanthus acts quicker, is less enduring in its effects, is less certain, is not cumulative, has less marked vasoconstrictor effects, has greater diuretic power, and is said to be safer for aged patients.

Nitroglycerin causes a dilatation of the blood-vessels, fullness in the head, giddiness, buzzing in the ear, the heart beat increases in rate and force, arterial tension decreases, it is a cardiac and nerve depressant, respiration is first stimulated and then depressed, it produces frontal headache. It is *indicated* in angina pectoris, cardiac dyspnea, chronic nephritis, with high tension pulse, vomiting, epilepsy, hiccough, asthma.

Strychnine is used as a vasoconstrictor to raise the blood pressure, and as a cardiac stimulant.

9. "Infants under a year receive 1/20 of the adult dose; and at the age of one year 1/10 of the adult dose is safe." —(Koplik.)

Children are very susceptible to opium, so that drug should be given in smaller doses; arsenic and belladonna are well borne, so they may be given in larger doses.

10. *Cathartics* may be classified as: Laxatives (manna); Purgatives (rhubarb); Drastic (croton oil); Hydragogue (magnesium sulphate); Cholagogue (mercury).

CHEMISTRY AND TOXICOLOGY.

1. When the two parts of Fehling's solution are mixed the following reaction occurs:

$$CuSO_4 + 2KOH = Cu(OH)_2 + K_2SO_4.$$

If glucose is present in the added urine oxygen is taken out and cuprous oxide is formed:

$$2Cu(OH)_2 = 2H_2O + O + Cu_2O.$$

2. *Three examples of chemical incompatibility:*

(1) R. Sodii boratis, gr. x.
Zinci sulphatis, gr. j.
Aquæ camphoræ, f5j.
Aquæ rosæ, q.s. ad f5j.
Misce.
Sig.: One drop in each eye night and morning.

The zinc is precipitated by the borax as zinc borate.

(2) R. Antipyrinæ, gr. xx.
Hydrargyri chloridi mitis, gr. x.
Sodii bicarbonatis, 5j.
Misce et fiant chartulæ No. xx.
Sig.: One every three hours.

In the presence of moisture this mixture turns gray, due to the formation of metallic mercury and mercurous oxide. Mercuric chloride is also formed.

(3) ℞ Quininæ sulphatis, gr. xx.
Potassii acetatis, gr. xl.
Acidi sulphurici aromatici, ℥viii.
Aquæ cinnamomi, q.s. ad ℥ij.
Misce.
Sig.: One teaspoonful after meals.

In this prescription a voluminous precipitate of quinine acetate is formed which cannot be poured from the bottle (Thornton's *Materia Medica.*)

3. Epsom salt is magnesium sulphate; Rochelle salt is potassium and sodium tartrate; tartar emetic is antimonyl potassium tartrate; copperas is ferrous sulphate; blue vitriol is copper sulphate.

4. *Test for arsenic:* Reinsch's test is as follows: To the suspected fluid add a little pure HCl; suspend in the fluid a small strip of bright copper foil, and boil. If a deposit forms on the copper, remove the copper, wash it with pure water, dry on filter paper, but be careful not to rub off the deposit. Coil up the copper, and put it into a clean dry glass tube, open at both ends, apply heat at the part where the copper is. If arsenic is present there will appear in the cold part of the tube a mirror, which will be found on microscopical examination to consist of octahedral crystals of arsenic trioxide.

5. To prepare an antidote for arsenic keep the two following solutions in separate bottles and when needed mix them and administer:

℞ Liq. ferri tersulphatis, ℥ij.
Aquæ, ℥vj. M.
℞ Magnesiæ, ℥iij.
Aquæ, ℥viii. M

6.

ACUTE ALCOHOLISM.	CONCUSSION OF BRAIN.
Can be aroused by supra-orbital pressure unless very profound.	Deep coma; may have history of onset after fall or injury. Evidence of fracture of vertex or base.
Pupils normal or somewhat dilated.	Pupil dilated on side of lesion. Choked disc.
Pulse more rapid than normal and full.	Pulse very slow.
Regular respiration.	Respiration slow and stertorous.
Temperature may be low or normal.	Temperature higher—101°.
Urine normal.	Urine normal or contains trace of albumin.
No hemiplegia.	Hemiplegia on opposite side to that of injury. If contusion of brain is also present may have generalized convulsions.

7. Dilated pupils, coma, lowered reflexes, vertigo, headache, anesthesia of skin, and ravenous appetite. *Treatment:* Emetics, alcohol, strychnine, and lemon-juice.

8. Cumulative effect of digitalis is: Irregularity of the heart, dicrotic pulse, headache, and vomiting.

9. The *symptoms of acute lead poisoning* are: "Metallic taste; dryness of the throat; thirst; severe colicky abdominal pains, referred particularly to the umbilical region, and relieved by pressure; pulse very feeble and slow, great prostration; constipation; urine scanty and red; violent cramps; paralysis of the lower extremities; convulsions, and tetanic spasms."

The antidotal treatment consists in administering "magnesium sulphate, which brings about the formation of the insoluble lead sulphate, while the purgative action of the magnesia is also useful. It should be preceded by an emetic, or by the use of the stomach tube."

10. The *symptoms of poisoning by strychnine* are "a sense of suffocation, thirst, tetanic spasms, usually opisthotonos, sometimes emprosthotonos, occasionally vomiting, contraction of the pupils during the spasms, and death, either by asphyxia during a paroxysm, or by exhaustion during a remission. The symptoms appear in from a few minutes to an hour after taking the poison, usually in less than twenty minutes; and death in from five minutes to six hours, usually within two hours."

Treatment: "The convulsions are to be arrested or mitigated by bringing the patient under the influence of chloral or chloroform as rapidly as possible; the stomach is to be washed out, and the patient is [illegible] as quiet as possible."—(Witthaus' *Essentials* [illegible])

BACTERIOLOGY.

1. *Gram's method of staining.* Stain a cover glass preparation for two or three minutes in aniln gentian [illegible]. Wash in water. Treat with Gram's solution (Iodine 1 gram; potassium iodide, 2 grams; water, 300 c.c.) for a minute and a half, when the preparation becomes [illegible] black. Decolorize with strong or absolute alcohol [illegible] at least five minutes, wash, dry, and mount. Sometimes a contrast stain of Bismarck brown or eosin is used.

2. *The diplococcus lanceolatus or Pneumococcus* is motile, non-flagellate, non-sporogenous, non-chromogenic, non-liquefying diplococcus; it is aerobic and optionally anaerobic. It stains by the ordinary methods, also by Gram's method. (See QUESTION 1.)

3. The *micrococcus catarrhalis* is a coccus; the *micrococcus intracellularis meningitidis* is a diplococcus.

4. *Epidemic* implies a disease attacking a large number of people in a community nearly simultaneously.

Endemic implies that a disease is always more or less present in a community.

Pandemic is a disease that is epidemic over a very wide area.

Bacillus is a rod-shaped bacterium.

Toxins are the poisonous products of bacteria.

Alexin is a defensive body existing normally in the blood serum.

Facultative anaerobic implies that a bacterium can live and thrive either in the presence of oxygen or without oxygen.

5. The *Streptococcus erysipelatis* appears in chains of varying lengths or in tangled masses, the presence or absence of oxygen does not seem to be of much importance, it grows at room temperature, and has the cultural characteristics of the *Streptococcus pyogenes.* This latter is a micrococcus, of spherical shape, and arranged in chains of about thirty or forty cocci (in liquid media), but the chains are much shorter in solid media. Each coccus is about one-half to two mikrons in diameter. It is not motile, does not form spores, does not liquefy gelatin, and stains readily with the ordinary anilin dyes, and by Gram's method. It grows very well on blood serum and milk, also on gelatin, and agar.

6. The *Bacillus diphtheriæ* (of Klebs-Loeffler) is present in diphtheria and is not present in tonsillitis.

7. *The spirochete of Vincent's angina* is a long, slender, anaerobic bacillus, with pointed ends, slightly swollen in the middle, it is non-motile, and does not stain by Gram's method.

8. *To determine the presence of bacteria in milk:* "As a routine procedure, in cold weather, entirely satisfactory results may be obtained by taking 1 c.c. of the milk to be examined, after it is thoroughly mixed, and putting it into 9 c.c. of sterile water, and taking 1 c.c. of this solution in 9 c.c. of sterile water. Plates made from this dilution with 1.10 c.c. and with 1 c.c. respectively have been found to give closely corresponding results, and unless the milk is badly contaminated it is always possible to count the colonies readily. In warm weather and in the case of cream a third or even a fourth dilution should be made. Where the milk or cream are mixed with the medium in the tube the resulting colonies are apt to be more uniformly distributed on the plate than where the milk is put into the Petri dish and the culture medium poured in afterward. The number of bacteria remaining in the test tube in the former method of procedure must be very few where the medium is properly fluid when it is poured."—(Williams' *Bacteriology.*)

9. To demonstrate the existence of *tubercle bacilli* in the sputum: The sputum must be recent, free from particles of food or other foreign matter; select a cheesy-looking nodule and smear it on a slide, making the smear as thin as possible. Then cover it with some carbolfuchsin, and let it steam over a small flame for about two minutes, care being taken that it does not boil. Wash it thoroughly in water and then decolorize by immersing it in a solution of any dilute mineral acid for about a minute. Then make a contrast stain with solution of Loeffler's methylene blue for about a minute; wash it again and examine with oil immersion lens. The tubercle bacilli will appear as thin red rods, while all other bacteria will appear blue. The tubercle bacillus is rod shaped, is from 1½ to 3½ mikrons in length, and about one-third to one-half a mikron in breadth, is a strict parasite, is not motile, and has no flagella. It is slightly curved, does not form spores, is not liquefying, and nonchromogenic, is aërobic; it resists acids; it grows well on blood serum; stains well by Ehrlich's, Ziehl-Nielsen's, or Gabbett's method; it is Gram-positive.

10. All infectious and contagious diseases should be promptly reported and proper isolation or quarantine be insisted on. One of the chief things is to watch the schools; here there should be regular and efficient inspection by physicians; prompt exclusion and isolation of any one suffering from a contagious disease, or coming from a house where such disease is; compulsory vaccination; compulsory notification of all infectious and contagious disease; individual towels, drinking vessels, and other implements; children who have had a contagious or infectious disease, or who have come from a house where such disease prevailed, should not be readmitted to school until sufficient time has elapsed since the occurrence of the last case to insure safety.

PATHOLOGY.

1. *Carcinoma* is apt to occur at a later age; is found in structures derived from the epiblast or hypoblast; possesses a fibrous stroma, in which are found both blood-vessels and lymphatics; metastasis is by the lymphatics.

Sarcoma is apt to occur earlier; is found in structures derived from the mesoblast, there is no stroma between the cells; the blood-vessels are in direct contact with the tumor cells; there are no lymphatics; metastasis is by the blood-vessels.

2. *Stage of hyperæmia*, or congestion, consists in distention of the vessel of the alveoli encroaching on the cavity of the air-vesicle; the lung has a reddish-brown color, is more resistant, and is heavier, sinking somewhat lower in water than a normal lung, and having a slight exudation upon the vesicular surface. The same changes are seen in the adjacent bronchioles.

3. In *amebic dysentery* there are pronounced ulcerations in the intestines (chiefly the colon); abscess of the liver is frequent; and occasionally there is perforation into the right lung. The inflammatory process is severe, the exposed follicles necrose, the sloughs separate, and thus the ulcer is formed. The ulcer has irregular and undermined edges, and when it heals there is marked cicatrization.

4. In *hypertrophic cirrhosis of the liver* the liver is large, yellowish, the interlobular connective tissue is proliferated and extends into the peripheral zones of the acini and between the hepatic cells; proliferation of the liver cells and bile ducts may also be found.

5. In *progressive pernicious anemia* the marked feature of the disease is pronounced oligocythemia. This progresses rapidly, and in ordinary cases the number of red corpuscles sinks to 1,000,000 or less per cu. mm.; at the same time, changes in size (microcytes and megalocytes) and in shape (poikilocytes) make their appearance and reach grades rarely attained in other diseases. Nucleated red corpuscles are always present in some number, and are usually abundant. The largest forms (megaloblasts) as a rule predominate, but in some cases the smaller forms are more abundant. Karyokinetic figures may be found in the nuclei. Polychromatophilia is generally present. The leucocytes may be decreased or normal in number; in the late stages leucocytosis is not uncommon, and it may become extreme. The larger mononuclear leucocytes are usually more abundant than in health, and mycloeytes often occur in considerable numbers. In the terminal leucocytosis of pernicious anemia the lymphocytes often predominate.

6. In *chronic parenchymatous nephritis* both degenerative and proliferative changes are seen. The tubular epithelium is always more or less affected, showing signs of cloudy swelling, fatty degeneration, desquamation, and disintegration, most marked in the convoluted tubules, but also present in the loops and collecting tubules. The distribution of these changes is usually patchy, giving rise to mottling of the cortex. The lumina of the tubes may be dilated, and contain granular and fatty matters, and hyaline casts, the latter formed by coagulation of exudation in the tubules. The glomeruli may occasionally appear normal, but there is almost always some swelling and hyaline degeneration, together with some proliferation and desquamation, of the epithelium, so that they become highly cellular. Occasionally the glomerular changes may be more marked than the tubular; fatty degeneration of the glomerular and capsular epithelium may be prominent, or there may be swelling, proliferation, and desquamation of the epithelium, or both these changes may be combined. The glomerular vessels may be compressed, their endothelium degenerate, and they may be obstructed by leucocytes or by hyaline thrombi, and finally obliterated. Interstitial changes, though present, are not conspicuous, and consist of edema, and scattered foci of round-celled infiltration about the glomeruli and veins. Sometimes hemorrhages are evident in some of the glomeruli and the corresponding tubules. Lardaceous infiltration frequently accompanies parenchymatous nephritis.

7. A *malignant growth* is a tumor with the following characteristics: There is no capsule to the tumor, and so it invades the surrounding tissues, it spreads to distant organs, it produces a cachexia, it tends to recur after removal, and leads to inevitable death. *Examples:* Carcinoma and sarcoma.

8. *Acute interstitial myocarditis:* "The affected heart muscle is soft and often distinctly friable. In the earlier stages there may be spots of hemorrhagic infiltration, but as a rule the color is rather lighter than that of the normal organ. It may be noticeable that the bundles of fibers easily separate from one another. The cavities of the heart are frequently dilated, particularly the left ventricle. Microscopically the important changes are diffuse infiltration of round cells in the connective tissue between the muscle fibers and proliferation of the connective tissue itself, with formation of rounded or spindle-shaped fibroblastic cells. There is no tendency to suppuration. The blood-vessels are usually somewhat distended with blood, and there may be distinct proliferative thickening of their walls. Degenerative changes of the muscle fibers themselves are rarely, if ever, absent, and it is most probable that the first stage in the process is a toxic degeneration of the muscle fibers, and that the intermuscular infiltration and proliferation are consequent upon the primary degeneration. The fibers become granular and opaque, the striations are indistinct; occasionally there may be vacuolization, and sometimes segmentation. Proliferation or swelling of the nuclei of the muscle fibers is frequent, and the hyaline transformation of Zenker is sometimes observed."—(Stengel's *Pathology.*)

9. *Amyotrophic lateral sclerosis* shows degeneration of the crossed pyramidal tracts extending upward (to pons, medulla or even to the cortex), atrophy of the ganglion cells of the anterior cornua, degeneration of the nerve fibers in the anterior roots and atrophy of the muscles.

10. Tubercle is subject to changes, of which the most frequent and characteristic is *caseation*. It is a regressive change, whereby the primarily transparent tubercular tissue is converted into an opaque yellowish substance of various degrees of consistency, resembling certain varieties of cheese, whence the name. The process is a form of coagulation necrosis, beginning in the center of the tubercle. The cells lose their outline, their nuclei are no longer demonstrable by ordinary staining methods, and a confused granular mass results. Bacilli are, however, present.

Most frequently caseation is followed by *softening*. The precise conditions necessary for this are not known, though commonly, as soon as a caseated mass reaches a certain size, it breaks down into a pyoid product which is not histologically pus, but consists of a number of fat drops, granular debris and shriveled, formless cells. In the broken-down material the tubercle bacilli are exceedingly numerous, much more so than in the dry caseated tubercle. (From Tyson's *Practice of Medicine.*)

PRACTICE OF MEDICINE.

1. *Dysentery* is a disease, sometimes infectious, and blood is often passed by the rectum; tenesmus is a prominent symptom. *Diarrhea* is a symptom (and not a disease), is not infectious, and as a rule the stools are not bloody, there is no tenesmus.

2. In *empyema*, besides most of the signs of the pleurisy, there may be: Chill, fever, leucocytosis, pus found on aspiration and auscultation over the pus will not detect the whispered voice (Baccelli's sign).

3. The apex beat is displaced downward and to the left; the area of cardiac dulness is increased; a diastolic murmur may be heard at the base on a level with the second or third intercostal space, transmitted down the sternum and to the apex; and the Corrigan pulse is present.

5. *Endocarditis may be caused by:* Bacteria, rheumatism, chorea; it may follow septicemia, gonorrhea, tuberculosis, scarlet fever and nephritis.

4. *Area of Liver Dulness.*—This extends in mammary line from the upper border of the sixth rib to the costal margin; in the axillary line, from the eighth rib to the eleventh rib; in the median line, the upper border is lost in the cardiac dulness, while the lower border lies midway between the ensiform cartilage and the umbilicus.

6. Human beings acquire tapeworms through eating meat (generally raw or only partially cooked) containing the cysticercus.

7. GASTRALGIA. *Causes:* Dietetic errors, overwork, anemia, nervousness, hyperacidity, gastric ulcer or cancer, locomotor ataxia, nervous dyspepsia.

Symptoms: Severe pain in the epigastrium when the stomach is empty, and relieved by food or pressure. The pain often radiates to the back, sides, or shoulders; eructations and restlessness are noted.

8. *A cavity in the lung* in tuberculosis will show the

respiratory murmur amphoric or cavernous; vocal resonance increased and high-pitched; whispering pectoriloquy; râles gurgling or bubbling; percussion gives a dull, tympanitic or cracked-pot sound.

9. *Bronchorrhea* is a condition characterized by excessive bronchial secretion.

10. The overgrowth of connective tissue causes atrophy of the hepatic cells; this causes obstruction of the circulation through the portal capillaries; the blood pressure in the portal vein rises, and ascites follows (due to the permeability of the capillary walls).

OBSTETRICS.

1. *Pathology of vesicular mole.* "The idea has long prevailed that the disease was a myxomatous degeneration of the mesoblastic core in the *interior* of the villi, but more recently it has been demonstrated that the epithelial *coverings* of the villi—the layer of Langhans and the syncytium—are chiefly concerned. While the inner substance of the villi does undergo a myxomatous degeneration with obliteration of the fetal capillary loops, it is really the rapid proliferation and increased activity of the cells of Langhans and of the syncytium upon which the development of a vesicular mole chiefly depends." (King's *Obstetrics.*)

2. *Rachitic pelvis* is due to the presence of rickets in youth. During the process of growth the lack of lime salts causes a softening of the bones; these latter yield easily to the weight and pressure of the superimposed body. It is recognized by pelvic obliquity and the characteristic epiphyseal changes. The pelvis is asymmetrical; the cavity is shallow, the brim is distorted, the pubic arch is widened, the sacral promontory is prominent.

3. *Placental syphilis* may cause the death of the fetus; or abortion; or the fetus may be undersized, or poorly nourished.

4. *Cause of intrauterine amputations:* The presence of amniotic bands or adhesions.

5. The placenta dates from about the third month.

6. The principal cause of eclampsia is autointoxication.

7. The uterus is anteflexed and also descends a little into the pelvis; this descent is followed by a progressive ascent.

8. Sepsis leading to endometritis, salpingitis, ovaritis, peritonitis; also displacement of the uterus; cystocele and rectocele resulting from lacerated perineum.

9. *Operation for tubal pregnancy (before rupture).* "After thorough cleansing and sterilization of the abdomen and pubes, as well as of the instruments and hands of the operator and assistants, the bladder is emptied and the patient anesthetized. An incision three inches long is then made in the median line above the pubes down to the peritoneum, any bleeding vessels being twisted before opening the peritoneal cavity. The peritoneum is then incised; the intestine kept back by pads of cotton or gauze wrung out of the sterilized water; the operator's fingers bring out the distended tube and ovary at the incision after having freed them from any existing adhesions; the pedicle is then transfixed by a double ligature of sterilized silk, and each half of it tied securely according to surgical rule. The pedicle is cut, and the entire mass—tube, fetal cyst, and ovary—removed. The pads are then withdrawn and the abdominal incision closed and dressed in the usual manner. In case of threatened collapse from hemorrhage during the operation, the peritoneal cavity may be flooded with a 1 per cent. sterilized solution of common salt at a temperature of 100° F., a quart of this solution having been previously prepared. It is rapidly absorbed by the peritoneum, and acts as a restorative—like transfusion."—(King's *Obstetrics.*)

10. *Ruptured uterus* is announced by a sudden, acute, and persistent pain. Sometimes the sound of the rupture is heard by the patient; the symptoms of internal hemorrhage and shock are present—collapse, air-hunger, cyanosis, rapid, feeble pulse; the uterine contractions cease. The abdominal cavity must be opened, the uterine rent closed by sutures, all blood and fluid removed from the abdominal cavity, and the very strictest antiseptic precautions observed. If the tear is severe, hysterectomy is indicated.

SURGERY.

1. *Air embolism* is characterized by a sudden, hissing noise as the air enters a vein; there are dyspnea, syncope, and collapse. *Treatment* consists of immediate pressure on the part; the head should be lowered, the vein must be picked up and ligated; afterwards artificial respiration and stimulation may be necessary. It most frequently occurs in surgical operations in the neck or axilla.

2. In treating infected wounds, the first principle is to disinfect.

"Infected wounds should be opened freely to secure drainage, and hopelessly damaged tissue should be curetted or cut away. The wound should be washed with peroxide of hydrogen and then with corrosive sublimate, dusted with iodoform or orthoform, either drained with a tube or packed with iodoform gauze, and dressed with hot antiseptic fomentations. The part must be kept at rest and internal treatment should be stimulating and supporting. If lymphangitis arises, the skin over the inflamed vessels and glands is to be painted with iodin and smeared with ichthyol, and quinin, iron, and whiskey are given internally. The temperature is watched for evidence of general infection or intoxication. The patient must be stimulated freely, nourishing food is given at frequent intervals, pain is allayed by anodynes if necessary, and sleep is secured."—(Da Costa.)

3. For *rattle-snake bite:* Tie a ligature above the part immediately, then excise the wound, cauterize, and give stimulants. Antivenine is said to be useful.

4. The forearm is first supinated, then overextended to release the coronoid process; traction is made on the forearm, while the lower end of the humerus is fixed; and on flexing the joint, the bones slip into place with a snap. Or, the surgeon may use his knee or other part as a fulcrum, and by traction round it may disengage the coronoid process, and allow the bones to jump into place.

Aftertreatment consists in putting up the joint in an inside, angular splint, and the arm in a sling, and evaporating lotions applied to prevent inflammation. Passive movements should be cautiously begun on the fingers, at the third day, then of wrist and elbow (with massage) as soon as it can be effected without pain.

5. *Operation for Removal of the Appendix.*—"An incision is made at right angles to a line (at the junction of the outer and middle thirds) joining the umbilicus and anterior superior iliac spine, one-third being above and two-thirds below it. The cecum is found, and the anterior longitudinal band is traced down to the appendix, which usually comes off from the inner side and runs inwards and downwards. If not found there, it should be looked for in the retrocecal pouch or on the outer side of the cecum. The meso-appendix should be ligatured and cut through, a collar of peritoneum turned back, and the mucus and muscular coat ligatured near the base and cut off. The peritoneum should be stitched over the stump, and then the stump should be invaginated into the wall of the cecum by running a purse-string stitch around it."—(*Aids to Surgery.*)

6. *Pott's disease* is tuberculosis of the spine. *Treatment:* "Rest in bed, using sand bags as splints, is the first consideration. After the acute symptoms have subsided a Thomas splint, Sayre's plaster cast, or Cocking's felt jacket may be applied to the back and the patient gradually allowed to move about. *To apply the plaster-of-Paris case,* the patient should be suspended so that the heels are just off the ground. A skin-fitting vest is then applied to the trunk, under which a stomach-pad is inserted, which should be removed after the plaster has become dry. Plaster bandages should now be applied in the usual manner, extending from the level of the axilla to just below the crest of the ilium. When the case is dry, it may be divided down the front and perforated, so that it can be laced up or removed at any time. Abscesses should be opened early and freely, and injections of iodoform emulsion will be found very beneficial. Laminectomy is sometimes advisable."—(*Pocket Cyclopedia.*)

7. Burns of the first degree are characterized by hyperemia; of the second degree by dermatitis and the formation of vesicles; of the third degree by partial destruction of the skin (Dupuytren).

"The constitutional effects must be treated first. Put the patient in bed with warm blankets, without disturbing the clothing over the burnt parts. Administer brandy by the mouth or rectum, and morphine to deaden pain, and prevent further shock. Saline infusion into the loose subcutaneous tissues or into a vein may be tried if the pulse is very small. Ether and strychnine may also be used.

When the patient reacts to these, the local injuries may be treated. For burns and scalds of the first and second degree, ointments are the most soothing. Powders such as zinc oxide and bismuth are also cooling and keep the part in good condition. For burns which destroy any part of the true skin, ointments and antiseptics are dangerous, the one on account of sepsis which occurs beneath it, and the other from the danger of absorption of the poisonous drug. Picric acid in 5 per cent. solution may be painted over shallow burns, as it forms a skin, and is to some extent antiseptic. Boric acid, as powder or in moist lint, is one of the best dressings, provided it is changed very

frequently. The part may be treated with peroxide of hydrogen daily in addition. When granulations have formed, the part is treated as an open wound with aseptic dressing. All dead pieces of skin should be snipped off at each dressing as they die; and as soon as possible skin grafts are applied. Subsequent contraction of scars is treated by plastic operation."—(Buchanan.)

8. *Neurectomy* is sometimes employed for the cure of neuralgia (trifacial). Success may be expected when only a limited part of the nerve is affected—particularly the distal part.

"*Extracranial section of the third division at the foramen ovale* is best accomplished in the following manner: A flap of skin and subcutaneous tissue is reflected forwards from the parotid region, extending from the zygoma above to the angle of the jaw below, exposing thus the parotid gland with the socia parotidis and the masseter muscle, covered by fascia. If the incision is kept strictly to the subcutaneous tissues, the facial nerve is in no way endangered. The masseter is then divided transversely immediately below the socia parotidis, and the vertical ramus of the inferior maxilla cleared of muscle and periosteum to a sufficient extent to allow the application of a ¾-inch trephine just below the sigmoid notch, the remaining bridge of bone being subsequently removed by cutting pliers; enough bone is left in front and behind to preserve the continuity of the jaw. The fibres of the external pterygoid muscle can now be seen crossing the upper part of the wound horizontally, and over it the internal maxillary artery sometimes courses. The lingual and dental nerves are usually found close together, emerging from under the outer pterygoid muscle, and lying between the internal pterygoid and the bone. The peripheral portions should be twisted or pulled up and divided below as far down as possible, whilst by retracting the external pterygoid outwards, the foramen ovale can be seen, if electric illumination is employed, and the nerve-trunks divided at the point of exit. The wound usually heals well, and leaves but little scar, although some impairment in the mobility of the jaw may result from the cicatrization following disturbance of the muscles and tissues."—(Rose and Carless' *Surgery.*)

9. *Signs of a total transverse spinal lesion.* 1. In the area supplied by the nerves below the lesion.—Complete motor paralysis, followed by late rigidity and contraction of the muscles. Complete anesthesia, with loss of senses of pain or temperature. Complete and permanent loss of the deep reflexes. Temporary loss of the superficial reflxes. Vasomotor paralysis, with trophic lesions. Visceral paralysis (bladder, rectum, intestines), according to site. 2. In the area supplied by the nerves at the site on the lesion.—Paralysis, with rapid and flaccid atrophy of the muscles. Zone of hyperesthesia from nerve-root irritation.

Signs of a partial lesion.—The central parts of the cord may escape injury. In this case the deep reflexes are retained or soon regained; the senses of pain and of temperature are retained; the anesthesia may only be partial.

In cases of recovery from concussion or contusion the functions of the cord are regained in the following order: Deep reflexes—sense of pain and temperature—tactile sensation—motor power.—(Grove's *Synopsis.*)

10. *Treatment of lymphangitis:* The primary focus may be cleaned and asepticized. Hot fomentations may be applied; abscesses must be opened. Rest, tonics, good feeding are necessary.

GENITOURINARY AND DERMATOLOGY.

1. The patient should be kept warm in bed, the bowels should be opened, quinine is indicated; if suppression of urine occurs, sweating, hot baths or leeches over the loins may be tried; saline solution intravenously or by hypodermoclesis may be useful.

2. GONORRHEAL RHEUMATISM. *Symptoms:* "The acute form attacks, as a rule, but a single joint, but many attack several joints. The joint trouble begins with great suddenness, and is often ushered in by chilly sensations or by a distinct chill. Moderate fever arises. The pain in the joint, severe from the first, becomes excruciating. If superficial joints suffer, the skin over them becomes red and hot, and periarticular edema soon presents itself. The fluid in the joint is in most cases serous, but may become purulent. If pus forms, the fever becomes very high and chills may occur."

Treatment: "The salicylates, the alkalies, and salol are useless; iron, arsenic, and strychnine are possibly of some benefit. Quinine is helpful in some cases. Iodide of potassium seems to be of a certain amount of value. The inflamed joints should be wrapped in cotton and bandages, and every day a little blue ointment should be rubbed into the skin about them. If the inflammation lingers, use the hot-air oven, massage, and gentle passive motion, apply blisters, or counter-irritate with the hot iron. If the inflammation still lingers, or if it becomes worse, aspirate, wash out the joint with hot normal salt solution, and inject iodoform emulsion. If pus forms, incise, irrigate, drain, and immobilize."—(Da Costa.)

3. *Symptoms of stone in the bladder:* Pain in bladder and perineum, referred to the end of the penis, and made worse by micturition. Constant urination, followed by pain and spasm, straining, cessation of urination or retention of urine. A click may be elicited by a sound or searcher.

4. ACUTE PROSTATITIS. *Symptoms:* "Micturition is very frequent, with pain at the end of the act; there is a feeling of weight about the rectum, and pain on defecation. There is marked pyrexia, and even rigors. The prostate is felt to be enlarged and tender, with soft spots when suppuration is established. Retention of urine accompanies suppuration. *Treatment.* Absolute rest is necessary. The bowels must be kept well open. The pain is relieved by hot baths or hot fomentations and morphine suppositories; failing this, half a dozen leeches are applied to the perineum. If a catheter is needed, a soft rubber one should be used. If this treatment fails, it is because an abscess is forming, and should be treated by a median perineal incision."—(*Aids to Surgery.*)

5. *Treatment of chronic posterior urethritis:* "When the desire for frequent urination begins to disappear, and the urine becomes less cloudy, a Jacques catheter (No. 18 F.) should be passed as far as the membranous urethra, and the bladder injected with a hot solution of potassium permanganate 1:2000, or of silver nitrate 1:10,000; the instrument should then be removed and the patient instructed to empty his bladder in the usual manner, thus flushing the entire canal with the medicament. In congested and irritable conditions of the prostatic urethra, associated with pain and discomfort, with little or no frequency in passing urine, the urine being clear except for a few threads, benefit will be derived from the employment either of a bougie or the cooling sound. Should the urine contain much pus, the desire to urinate being frequent, any of the antiblennorrhagic remedies may be employed. Often relief will be experienced from the administration of a capsule containing ¼ of a grain of codeine sulphate combined with 5 grains of salol."

6. *Verruca* is a papillomatous overgrowth of the skin; often multiple; may appear in crops; it may be due to irritation. Sometimes it may be infective. It should be painted with glacial acetic acid or some other caustic every two or three days after the horny crust has been softened with salicylic acid and removed.

7. *Seborrhea* is a disorder of the fat-producing glands characterized by an increased and altered secretion of sebum, producing an oily or scaly condition upon the skin. *The treatment* should first be directed to the general health of the patient. Gastrointestinal disorders should receive attention, and arsenic, iron, quinine, strychnine, and calcium chloride are often indicated. The crusts and scales should be removed from the affected parts by the use of tincture of green soap or oil, after which applications containing resorcin, sulphur, or salicylic acid should be made.

8. *Hypertrichosis* is a condition characterized by excessive growth of hair.

9. *Vitiligo* is an acquired condition characterized by areas devoid of pigment surrounded by hyperpigmented borders. It occurs usually in adult life and seems to be dependent upon some disturbance of innervation. Apart from this, the cause is obscure. The affected areas are attended by no changes other than loss of pigment which may also be absent from the hair in those regions. Its onset is slow and its course indefinite. It usually persists during the lifetime of the individual. The treatment is unsatisfactory. Arsenic internally, and counter-irritation to the patches may be tried.—(Hughes' *Practice of Medicine.*)

10. *Epithelioma*, or squamous-celled carcinoma, may arise on any surface covered with stratified epithelium. It usually arises in the middle-aged or elderly, but may also occur in the young. It often results from long-continued irritation, and may arise in old scars or ulcers. It may appear in one of three forms: (1) A wart-like growth with an indurated base; (2) a small circular ulcer with raised, rampart-like edges; (3) an indurated fissure. The growth extends to the deeper structures; the surface ulcerates and becomes foul from contamination with putrefactive organisms. The nearest lymphatic glands always become infected sooner or later, and a fatal termination occurs rapidly unless treatment is early and thorough. *Treatment:* Early and free removal of the growth and the adjacent lymphatic glands, if affected.—(*Aids to Surgery.*)

Medical Record

A Weekly Journal of Medicine and Surgery

Vol. 82, No. 12.
Whole No. 2185.

NEW YORK, SEPTEMBER 21, 1912.

$5.00 Per Annum.
Single Copies, 15c.

Original Articles.

THE ETIOLOGY AND PATHOGENESIS OF BRONCHIAL ASTHMA.

BY APOSTOLOS G. APOSTOLIDES, M.D.,

SMYRNA, ASIA MINOR.

PHYSICIAN TO THE CIVIL OTTOMAN HOSPITAL.

UNDER the heading of asthma there are many varieties of dyspnea corresponding to different causes or different pathological features. As a symptom it has been discussed in connection with the various morbid conditions and the little that is known about its treatment I discussed in an article published last year in the *Folia Therapeutica* of London.[1] In this paper I shall deal with the marked increase of respiration occurring in paroxysms—the so-called idiopathic, bronchial asthma.

Definition: "Essential" bronchial asthma is a functional neurosis, that is, a condition of which as yet no organic basis has been discovered, characterized by sudden paroxysmal attacks of great dyspnea, with a peculiar exudation of mucin and with distention of the lungs. The attacks may last a few hours or days, or may be protracted for a week. In this form also the phenomenon occurs after a variety of causes; in other words, bronchial asthma is often a mere symptom. But we must inquire whether the phenomenon always represents merely a symptom or whether it may perhaps, in some cases, be the cardinal symptoms of an otherwise obscure disease. Until the properties that characterize the condition are known, it will, therefore, be necessary to continue to speak of "essential asthma" as a clinical entity and for this purpose the relations or differences existing between the conditions of individual patients suffering from paroxysmal dyspnea must be investigated. Under the heading of essential asthma we must therefore include those clinical conditions in which the respiratory organs are normal and the attacks are produced *exclusively by some perversion of the nervous system*, in which finally no objection can be formulated from an anatomical point of view. This definition sharply isolates this disease and more especially differentiates it from all those symptom-complexes which, though also due to abnormal innervation of the respiratory nervous system, are really nothing more than symptoms of definite anatomical lesions of the lungs or of more distant organs. The pathology of bronchial asthma has been the subject of incessant debate; unfortunately the advancement of our knowledge was long delayed because every investigator was bent on solving the question whether paralysis of the bronchial muscles or contraction of the inspiratory muscles was the cause of the asthmatic dyspnea, and in doing so neglected every other point of view; in other words, the disputants have concerned themselves not so much with the cause of asthma as with the anatomical conditions in the bronchi which occasioned it, and these conditions have been narrowed down to spasm on the one hand and hyperemia on the other.

The mechanism of the intense dyspnea which characterizes the asthmatic paroxysms may be considered as definitely settled. *It is the consequence of a sudden narrowing of the smallest bronchial lumen.* So sudden is its onset and so intense may the dyspnea shortly become that even *prima facie* the idea of a spasm seems alone adequate to account for it. This theory, which has perhaps the largest number of adherents and according to which the

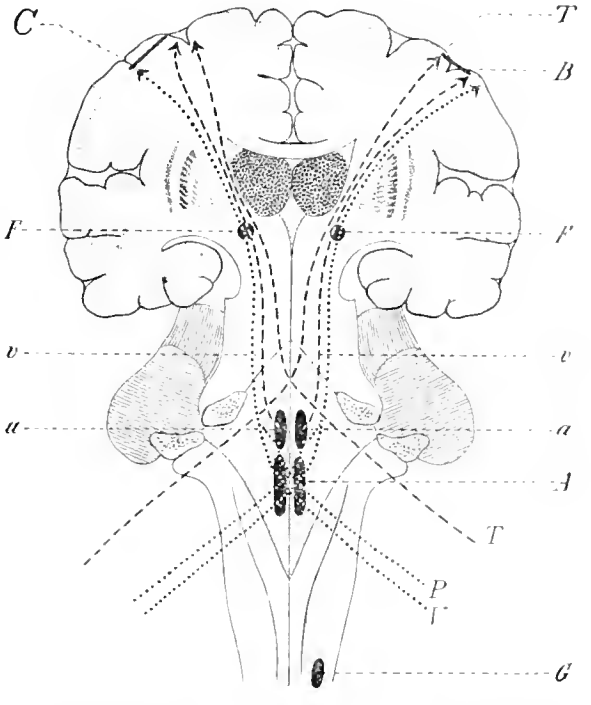


Fig. 1.—Diagram of the respiratory centers and their paths from the brain and medulla. *A*, Principal bulbar respiratory centers; *B*, cortical higher respiratory centers; *C*, higher vasomotor centers; *F*, respiratory center in corpora quadrigemina; *G*, spinal respiratory center (?); *P*, pneumogastric nerve; *T*, trigeminus nerve; *I'*, vasomotor fibers in vagus nerve; *a*, bulbar vasomotor centers, *v*, path of vasomotor fibers.

dyspnea is due to spasm of the respiratory and bronchial muscles, was pronounced in the seventeenth century by Willis and supported by the great authority of Cullen, Biermer, Salter and others and confirmed by the original experiments of C. J. B. Williams and Brodie. But if all these authors agree on this point, namely, that the muscle spasm is the starting point of the asthmatic dyspnea, they still disagree as to which muscles the attack is to be ascribed to. Some writers, notably Bargson, Salter, Knopf, Feer, Weber, and others, are of the opinion that the spasmodic contraction of the bronchial muscles (bronchospasm) and the vesicles

of the lungs is sufficient in itself to account for asthmatic dyspnea, while others, Wintrich, Bamberger, G. See, and Apostolides senior, attach greater importance to the inspiratory muscles and especially to the diaphragm. But the view held almost universally is the one which maintains that the asthmatic dyspnea is due to a tetanic *contraction of the inspiratory muscles and diaphragm as well as to a spasmodic contraction of the bronchial muscles and vesicles of the lungs.* This theory has in a short time replaced the older view of Traube and Clark and others, that the attack is due exclusively to swelling of the bronchial mucous membrane—fluctionary hyperemia (Traube), diffuse hyperemic swelling (Clark), vasomotor turgescence (Weber). Personally I am inclined to believe that criticism went too far in theory and that both the contraction of all the inspiratory muscles (extrinsic and intrinsic muscles and the diaphragm) as well as the swelling of the bronchial mucosa work hand in hand in this matter. But I do not think it is correct to regard contraction of the muscle and swelling of the mucous membrane as the most prominent factor of the dyspnea. It is quite possible that these factors form only a part and probably a minor part of the pathological processes which occur in the bronchial tubes. I am therefore inclined to assume that an abnormal nervous condition is present. This, it seems to me, is supported by the close and striking similarity between these attacks and those of so-called mucous colitis and urticaria. With regard only to the asthmatic dyspnea, Curschmann is quite right in defining asthma as a special form of inflammation of the smallest bronchioles, as so-called "bronchiolitis exudativa," but on the contrary he is quite wrong when he tries to deduce the whole symptom complex of asthma from this factor; the hyperemia and swelling of the mucosa and the extremely viscid, tenacious mucus explain well the hindrance to inspiration and expiration and also the quality of the râles, but they do not explain the suddenness of the attack and the prolonged expiration. I share, therefore, the view of some modern writers, Strümpell,[2] Schmidt,[3] Fr. Hoffmann,[4] and others, who state that bronchospasm, contraction of the inspiratory muscles, turgescence of the bronchial mucosa, and the influence of the nervous system all simultaneously contribute to the asthmatic dyspnea.

A very strong support to this view is afforded by the anatomy of the lungs. With regard to the bronchial muscles, Aufrecht[5] has discovered the existence of a fine longitudinal layer closely interwoven with the circular fibers. Then with respect to their innervation, careful experiments by Dixon and Brodie and Einthoven have demonstrated that the sole supply is from the vagus, which contains both *bronchoconstrictor* and *bronchodilator* fibers (anterior and posterior pulmonary plexuses), and that the pulmonary vessels are devoid of vasomotor nerves; other writers, however, state that the vagus fibers belong to the musculature and the sympathetic to the blood-vessels, and even that these latter come from the first thoracic ganglion (Hoffmann).[6] With regard to bronchial vessels anatomists[7] state that in the bronchioles the principal supply is not from the bronchial but from the pulmonary artery. All these become of importance in connection with the pathological anatomy of asthma. In asthmatic attacks the contraction of the strong circular layer overcomes that of the interwoven weaker longitudinal layer and the narrowing of the lumen of the bronchi is brought about. The turgescence of the mucosa and the catarrhal condition on the other hand complete the narrowing. The relation of the contraction of the bronchioles and the turgescence of the mucosa will be discussed further on. It is sufficient here to say that if on various occasions of provocation the bronchial tubes are so liable to contractions more or less excessive, is there likely to be any reason for denying a similar possibility or necessity ever to occur in the case of the vascular tubes? After this summary review of what is known about the mechanism of the asthmatic dyspnea, let us pass on to inquire as to the nature of the disease. It is very difficult as yet to give anything like a final opinion on this point, because, although it seems incredible, our knowledge of the mechanism by which the air is carried to the alveoli is unquestionably quite inadequate. By what mechanism does the air gain access to the alveoli? What part do the bronchial muscles take in respiration? Difficult as well as important experimental investigations by prominent physiologists have taught that the action of the respiration is influenced in a variety of ways—by the irritation of various centers and nerves, and that its rhythm particularly can be altered in many different ways. Before we can hope to gain a true understanding of the pathogenesis of asthma bronchialis we ought to be properly informed with regard to the many nervous influences that regulate the action of respiration and blood-vessels in the normal individual. But at once we are met by the lack of a firm physiological basis and therefore we must be satisfied with general remarks gained by experiments on animals. Thus, the experiments of Martin, Brooker, and Christiani and the anatomical studies of Gad and Marinescu, and more recently the experimental work of Sherrington and Grünbaum have shown that the true principal respiratory centers are found in the medulla oblongata, and occupy not only the top of the calamus scriptorius, as Flourens believed, but are situated in the floor of the fourth ventricle, occupying an area on both sides of its middle line. These principal respiratory centers are in close connection with the rest of the brain in which are located the so-called *cortical higher respiratory centers.* The localization of these *higher respiratory centers* is not definitely determined in the cortex of the brain, but it is believed to be for the most part in a strip near to the fissure of Rolando, where are also located the motor areas of the cortex and the higher centers of the vasomotor nerves. (Frank). Some authors[8] believe that there are other respiratory centers, namely, one higher in the corpora quadrigemina and one lower in the spinal cord. The paths for the conduction of the stimuli which underlie the special respiratory centers are found in the different fibers of trigeminus, which convey cerebral impulses to the bulbar respiratory centers. The cortical centers are bilaterally acting and a lesion limited to either one should not produce marked defects in respiration. The lower segment of the primary respiration's mechanism is made up of the motor nuclei in the medulla, and in the peripheral nerves arising from them, especially pneumogastric and sympathetic. We know very little of the pulmonary branches of the vagi.[9] The motor fibers are stated to control the action of the bronchial muscles, and the various alterations in the respiratory rhythm are due more to changes in the center than in the nerves themselves. The vasomotor

fibers of the lungs, parting from their centers, situated according to R. Nicolaides and Kronecker[10] in the floor of the fourth ventricle, pass for the most part in the vagi and, giving off at different levels fine medullated fibers, end in arborization about the ganglion cells of the thoracic sympathetic.[11] It has been shown with absolute certainty that the bulbar respiratory centers work automatically. Respiratory sensations and respiratory movements *depend upon the interchange of gas between certain cells in the central nervous system*, and on their ability to take up oxygen and give off carbon dioxide. *Respiration thus depends, in the great part, on the condition of the blood.* This does not exhaust the question, however, for we still have to reckon with the effect of the higher centers on the respiration. Everybody knows that the condition of the brain exerts a profound influence on the respiration; it has long been a matter of popular belief that psychic excitement may directly arrest the respiration. Besides these centers, the pneumogastric nerves have an important effect on the respiration. Unfortunately, our knowledge of the extent to which respiratory sensations or modifications of the respiratory movements can be initiated through the agency of the nerve-endings in the lungs is very limited (Nicolaides).[12]

Summing up what is said above, it will be seen that the respiration-rhythm is governed by some centers, the most important of which are the bulbar centers, the cerebral centers, and the spinal respiratory centers. The higher centers and the spinal centers are connected directly by special motor fibers with the bulbar nuclei which are the true respiratory centers. The cortical respiratory centers are in close connection with the rest of the brain. Such is the state of our knowledge regarding the mechanism; let us pass on now to inquire as to the seat of the starting point of the attack. Of the numerous theories advanced to explain this matter the following are the most important: (1) Asthma is a neurosis, the seat of which is the pulmonary apparatus and especially the bronchial membrane. (Curschmann,[13] Ungar,[14] Bretonneau, Rostan, Louis, Fürbringer,[15] and Strümpell.) All of these authors are of the opinion that the so-called asthmatic diathesis is due to a special form of inflammation of the bronchial mucosa and therefore they have given it different names as "bronchiolitis exudativa" (Curschmann), "asthma-catarrh" (Hoffmann), "asthmatic bronchiolitis" (Strümpell). Some even went so far as to consider the asthmatic exudation to be of a very characteristic and peculiar character. But the characteristic asthmatic secretion has just been discussed by many authors. Vierordt, von Jacksch, Vincenzo, Matessori,[16] von Noorden,[17] and others[18] have found Leyden's crystals, Curschmann's spirals, and eosinophile leucocytes in many diseases of the lungs, as pneumonia, phthisic bronchitis, bronchorrhea, etc., so that no one believes any more in their specificity; they are regarded rather as indicating a revolving force acting upon the mucous membrane of the finest bronchi. I believe that there are numerous signs pointing directly to an inflammatory process in the bronchioles and at all events that this inflammation is peculiar both anatomically and etiologically. But to this important point I shall soon return. It will suffice in this place to state that sometimes the asthmatic attack comes like a bolt from the blue; that is, it is the first sign of the disease and passes without any expectoration. But even if the latter view, that of the inflammation of the mucosa, were adopted, this point unquestionably requires still further investigation, and, above all, it ought to be determined in what class of cases this inflammation occurs. What is the nature of the anatomical process that lies at the bottom of it? Certainly not a banal inflammation of the bronchioles. For such an alleged inflammation could not suddenly cause as much greater obstruction of the air tubes than is produced by acute inflammation of the bronchioles, which even generalized (capillary bronchitis) is not attended with a dyspnea anything as severe as we find in asthmatic attacks. The theory, according to which the asthmatic attacks are due to changes of the cells of the alveoli which, under certain circumstances, as for example under the influence of *x*-rays, secrete more mucus than normal (Immelmann, Eckstein) is mentioned only to be dismissed; for it seems to me a hazardous undertaking to draw conclusions from the results of the influence of *x*-rays upon the cells of the bronchioles. There is too much danger of fallacy from suggestion. Moreover, even the most

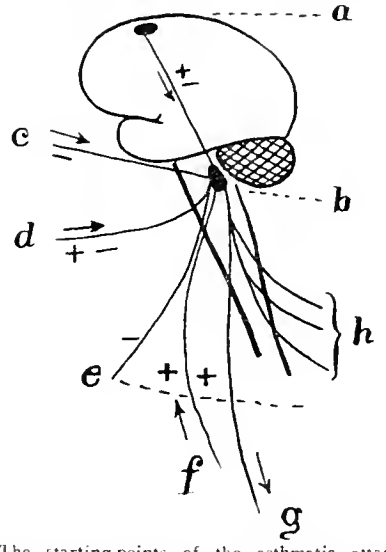


Fig. 2.—The starting-points of the asthmatic attacks; + indicates augmentation; —, inhibition of the respiratory power. *a*, Cortical psychic centers; *b*, bulbar respiratory centers; *c*, nasal stimuli; *d*, cutaneous stimuli; *e*, laryngeal stimuli; *f*, pulmonary stimuli (pneumogastric nerve); *g*, phrenic nerve; *h*, intercostal nerves.

fanatic upholders of the inflammation theory (Schmidt, Fürbringer, Strümpell, Hoffmann) acknowledge that *in the asthmatic attacks certain nerve tracts must be over-irritable.* We are thus led to the second theory, according to which the asthmatic diathesis *results from disturbed innervation.* But here, too, opinions differ a good deal on this question as to the seat of the starting point of the disturbed innervation, namely, as to what parts of the nervous system are responsible for this anomaly. Many are of the opinion that disturbances of the vasomotor centers, which govern the reflexes of the circulatory and respiratory apparatus, are responsible for the asthmatic attack (Ad. Strümpell, Brügelmann,[19] Schmidt, and others).

Physiologically considered these arguments are strong because we know that the bulbar vasomotor centers, which, as mentioned above, are situated close by the respiratory ones, are sensible to the chemical condition of the blood and may react manifestly to injuries (Achard-Levi).[20] A very strong support to this view is afforded by the striking similarity between these attacks and those of the mucous colic and urticaria, which both rest on specific disturbances of the vasomotor nerves. If

this theory is accepted the analogy to similar processes in the bronchial tubes appears quite accurate.[21] In the case of mucous colic, spasm may also have been present. I am willing to adhere to this theory, but I cannot regard the vasomotor centers as responsible for the contraction of the inspiratory muscles (musculi levatores costorum, musculi intercostales) and the diaphragm, which nowadays are regarded as important factors in the asthmatic attacks. Nevertheless this view seems to me to be of some value, because in both diseases the clinical material is uniform (neurasthenia, neurosis) and because some patients may have both diseases. If the vasomotor theory cannot be accepted in its entirety, there can be no doubt that what it holds is true, namely, that without these disturbances of the vasomotor nerves there would not be swelling of the mucosa and hyperemia. But as far as I can see there is no reason to believe it possible that bronchial asthma is due to disturbances of the secretory fibers of the vagus or of its sensory fibers, as has been advanced by French authors and especially by Parrot and Todd. The same applies to the view of some modern writers who consider asthma as a vagus neurosis. Remarkable cases have been reported which, in addition to asthma-like attacks, presented a strikingly different phenomena; for example, acceleration of the heart's action, which we are forced to regard as neurotic. The term vagus-neurosis should include those symptom complexes which are produced by anything that acts on the endings or trunk of the pneumogastric nerve and disturbs its function. In such a condition one would expect symptoms in various organs supplied by the nerve, especially the larynx, the heart, and the gastrointestinal canal. These above few words must be devoted to this subject because the respiratory symptoms, which are often so prominent in a clinical picture of vagus disease, bear a certain resemblance to the condition seen in paroxysmal asthma, although really the two conditions have nothing whatever in common. Nevertheless, it is often exceedingly difficult to draw a dividing line between essential bronchial asthma and the effects of vagus disease. This point has already been discussed,[22] but I insist again on it because, especially F. Knopf and Gottschalk,[23] among others, promulgated the theory that bronchial asthma is due to injuries of the peripheral nerve endings of the vagus and that enlargement of the bronchial glands in tuberculosis is "very often" the causative agent of asthma.[24] In support of their theory they point out the fact that compression of the vagal nerve endings by pathological growths may produce asthmatic attacks which in the long run constitute an asthmatic diathesis. Again, have the experiments of Riegel-Edinger,[25] Dixon, Brodie, and Einthoven[26] not shown that stimulation of the peripheral ending of the vagus is always followed by a marked spasmodic dyspnea concomitant with a distention of the lungs? In my opinion this theory is erroneous. In the first place, if it were true essential asthma should occur very often in children in which tuberculous enlargement of the bronchial glands is of such common occurrence (Zuber),[27] while bronchial asthma in children is not very often met with (E. Feer,[28] Comby,[29] Audeoud).[30] Besides, this question could only be answered if there existed a purely spastic form of bronchial asthma; but such a case has never been seen (Fränkel, Schmidt, Weber), and I myself do not remember ever to have seen it, although I have been on the lookout for the phenomenon. I cannot therefore bring myself to share this view in its present form, especially since the same investigators have confessed that the asthmatic-like dyspnea produced by irritation of the vagus was never accompanied by any secretion characteristic of genuine asthma. Besides, no intelligent man would attempt to apply data obtained from healthy animals directly to the conditions existing in human beings in disease. This datum merely enlarges our knowledge of the behavior of the organism in general, and in that way furnishes some assistance in the enormous and difficult interpretation of the phenomena observed at the bedside. So, for example, the effect of electrical irritation of the exposed pneumogastric nerves in a healthy dog has been utilized directly to explain motor disturbances in the lungs which are produced in disease by the most complicated and in part psychic causes! Again, Venot (Paris) and Temple Mursell (London) record cases of patients whose vagus was infiltrated by a malignant growth and *who never had shown asthmatic attacks.*

The most plausible theory and the one that now seems to have the largest number of supporters is the theory first advanced in various forms by Willis and Floyer in 1698 and supported by such authorities as Jaccoud, Trousseau, Brissaud, Dieulafoy, Hoffmann, Brügelmann, etc., according to which asthma is *a neurosis of the bulbar respiratory center* (*bulbar asthma, bulbar neurosis*). The opinion of such distinguished clinicians and able investigators as the above mentioned cannot be disregarded and this view has always appealed to me very strongly, but in the course of years distinct doubts have assailed me, for it must be agreed that a similar bulbar neurosis is unknown. Therefore I am inclined to adhere to the theory I advanced some years ago,[31] namely, that bronchial asthma is a neurosis, like hysteria and epilepsy, of the higher cortical center, which, according to Brooker, Martin, Frank, and others, presides over the lower centers and by means especially of the bulbar centers directs and controls the respiratory movements. This association action of the more complex centers takes place under appropriate stimuli parting from the brain. The vasomotor system is also brought into harmonious cooperation with the central nervous system on account of its dependence upon the latter (R. Nicolaides, loc. cit.). The curious cases of sudden asthmatic attacks *from fright or fear* demonstrate the enormous influence of the cortical centers on the respiration. But what we should like to know in this connection is what the exact nature of the more slowly acting nervous factors must be in order to produce this abnormal irritability. And on this point I am unable to give any opinion. Nor is it likely that we shall be able to furnish such information for the present, because we have as yet no means of estimating the psychic function of the brain. Perhaps, and it is quite probable, abnormal impulses from these cortical centers may inhibit the respiratory bulbar centers and bring about the same effect as is produced by stimulation of these centers themselves. It might also be argued that the increased hyperemia and swelling of the bronchial mucosa which are ascribed to disturbances of the vasomotor centers are due to impulses from these cortical centers, affecting the vasomotor system as well as the centers, which innervate the striped muscles, the two systems being associated by the inhibition of the one and rein-

forcement of the other. I do not believe it is possible at the present time to give an absolutely positive opinion on this point. But it is my personal conviction that there is much to be said in favor of the proposition that purely nervous influences are capable of provoking asthmatic attacks. The experiments of Frank and Brooker among others made on decerebrated animals have shown the great influence of the higher centers upon the bulbar respiratory centers.[32] As a rule the general character of the symptoms in the cases of essential asthma reveals the psychic nature of the complaint. Psychic excitement has a most powerful influence in bringing on the attack, while muscular exertion, on the other hand, has no bad effect in the great majority of cases. In other words, it is exactly the same as with the production of an hysterical attack. As the hysterical suffers (according to Freud) from "reminiscences" relating to the *vita sexualis*, so likewise the asthmatic suffers from *"resurrected moments" of the respiratory organs.* Fr. Hoffmann, Trousseau, and Treupel, among others, state that the *mere reminiscence of a previous attack may bring about a new attack.* One hundred detailed clinical histories written by good observers would be of great value. However, I have no reason in denying the important part which the respiratory mucosa takes in the pathogenesis of this neurosis, for just in this transformation of psychical excitement into persistent bodily symptoms or perhaps in a bodily compliance, I find the essential characteristic of neuroses and psychoneuroses. Nevertheless there must be a native individual predisposition. This hereditary or constitutional factor takes the form in asthma of the "respiratory constitution." As in hysteria, in neurasthenia, and in obscessional and phobic psychoneuroses, the disorder is rooted in disturbances of the sexual organs, so in asthma the bodily disorder is rooted in the respiratory mucous membrane. But the essence of the disease is to be sought in an increased abnormal irritability of the nervous structures, and especially the cortical respiratory centers (asthme cérébral or psychogène, Sihle).[33]

There is a final question to be answered: What is the fundamental cause of this disorder? What is the nature of the anatomical process that lies at the bottom of it? This question has excited a lively interest and has been made the object of much ingenious speculation; it has even rightly become the subject of investigation by bacteriologists and investigations on these lines have not failed to leave their imprint upon the inquiry as to the origin of asthma. The long duration of the affection is not necessarily against its being microbial. It may, however, be a toxin or leucomaine, either of distinctly pathological origin or else a product of normal metabolism, which gradually accumulates in the blood by reason of some defect, congenital or acquired, in the excretory function of the lungs. With regard to this point of view the microscopical examination of the asthmatic's secretion, during the attack, seems to give a strong support to this opinion. Eosinophilia, which is always found during the attack, indicates a local chemotactic afflux to the bronchial tubes (Salecker):[34] some investigators have found reason to believe that the granules of excreted cells are of the nature of alexins and are attracted to substances which are associated with the destruction of epithelium. However, these various bodies, which go to make up the expectoration, can only be regarded, according to Auld, as the outcome of the conflict which has been raging inside, and they may not inaptly be likened to fallen soldiers on the battlefield. Then, as regards the systemic blood-changes, P. Salecker (*loc. cit*), who has devoted considerable attention to this point, affirms that both during and after the attack the fluctuations in the blood-picture, more especially as regards the polynuclear leucocytosis, admit of a degree which is only found as a consequence of conditions of toxemia. Parting from this point of view, Auld goes so far as to recognize that an asthmatic attack is truly and strictly a process of defense. Some physicians during the second half of the nineteenth century, especially Bouchard, Huchard, and Gautier, advanced the view that asthmatic diathesis may be merely the result of a toxin or leucomaine or ptomaine, which is a product of normal metabolism gradually accumulated in the blood by reason of some defect of the excretory function of the kidneys. Huchard has indeed stated that ptomaines stored in the blood in significant quantities, when they are not sufficiently excreted by the kidneys, may produce a toxemia with *a nocturnal attack of shortness of breath* (dyspnée ptomainique nocturne de Huchard). But if these conditions are present the patient, in my opinion, is certainly suffering from a grave disease of the heart muscle or the kidneys, even if no physical signs are present in the organ.

It follows from this exposition that much remains to be explained as regards the causative agent. That asthma is a neurosis of the cortical centers due to a toxemia, as has been supported by Todd,[35] Lloyd, Bree,[36] and Bretonneau, is very probable and I myself am quite willing to admit this view; but the nature of this toxemia can merely be a matter of speculation. Two years ago I put forward the hypothesis,[37] which, by the way, seems to be substantiated by clinical observations of some medical men (G. Gauthier, Carnot,[38] and Osborn) that disturbances *of the internal secretion of certain glandular organs or of the pulmonary glands might be the cause of this toxemia.* The process is probably either closely related to or identical with Graves-Basedow's disease, which is generally believed to be due to a toxin acting on the nervous system on account of some disorders of the thyroid glands. It is a matter of fact that internal secretion may excite or arrest tissue activities even without the influence of the central nervous system. There can be little doubt that the lungs are avenues for the excretion of unknown poisons. This view becomes more clear when we consider the particular elements or structures in the membrane of the lungs. At first in man and in all the higher animals the mucous glands of the bronchi are in abundance (Kölliker),[39] and it is a curious circumstance that we have no knowledge of the fate of their secretion. It is generally believed that the mucous secretion merely serves as a surface lubricant, but I venture to submit that this view is open to question; in the first place it may be asked not only why the glands are abundant, but also why does the mucin which they secrete differ in certain respects from the mucin secreted by the mucous glands in other situations (Bonne,[40] Müller, Hammersten)?

Again, according to a number of observations carried out by Auld,[41] it was found that these glands were relatively more abundant in the young and seemed gradually to decrease as age advanced. This would seem to imply that they are specifically

related to the growth and development of the lungs. It appears therefore not unreasonable to consider that the mucous glands possess vital functions like hormones not yet apprehended by means of which they maintain or promote a healthy metabolism in the parts in which they are situated, or it is quite possible that they possess an internal secretion, pneumonic hormone, which has a great influence upon the centers of respiration or that their internal secretion may separate and destroy effete products or ptomaines stored up in the blood. That the secretion possesses a substance powerful enough to reduce Fehling's solution seems, at any rate, to favor the latter supposition. We can now easily assume that these undestroyed effete products acting upon the cortical centers leave behind some impression which does not disappear on account of a congenital abnormality of the internal secretion of some glands (probably the bronchial glands), but remains latent for a certain time; there is an accumulation of injuries and when this has reached a certain magnitude some apparently unimportant peculiar factor causes an unburdening or explosion, *i.e.*, an "attack." The alteration of the cortical respiratory centers is then the essential starting point of the asthmatic diathesis. It is a pathological excitability, an abnormal irritability of the imagination, with a corresponding weakness of the will power which is manifested by this respiratory neurosis called asthma.

In such a manner the cortical centers receive certain impressions and utilize them improperly. This is in many respects similar to epilepsy, migraine, and hysterical convulsions. The injuries which may cause an asthmatic attack are generally conveyed by the paths which act more directly on the respiratory centers and by means of them on the sensory, motor, and secretory nerves of the respiratory tract (vagus, trigeminus, and sympathetic). One fact has been known for a long time and is now well established; it is that nasal anomalies produce disturbances in the respiration rhythm. If asthma-like attacks are superadded, the clinical picture becomes very similar to that seen in essential asthma and the difficulties of distinguishing between the two conditions have puzzled many a diagnostician. Exactly the same thing is observed in disturbances of other organs, especially of the stomach, uterus, etc. Fig. 2 explains very clearly these forms of reflex-asthma.

From a consideration of what has been stated above I believe that idiopathic bronchial asthma is due to a congenital excitability of the cortical respiratory centers, which excitability itself is due to a toxemia depending upon alterations of the internal secretion of certain glands, as defined above. This mechanism is not an impossible one, but indisputable evidence of its actual existence has so far been adduced. However, I myself have known two patients about four years of age who have had a number of what are considered attacks of spasmodic laryngitis, a disease which was supposed at one time to be due to disturbances of the thymus and therefore received the name of thymic asthma. The patients are now about twelve years of age and are suffering from attacks of genuine bronchial asthma. I might quote other cases of this kind if I had anatomical data at my disposal. At all events these two cases must be borne in mind. Nevertheless bronchial asthma is, for the time being, a neurosis of the cortical centers, whatever its nature may be. I do know that the term neurosis merely serves as a cloak to our ignorance. But do we not call thus other diseases which are far from being functional disorders? There is no doubt that in the future, as our horizon broadens and we begin to work on altogether different anatomical and physiological lines much will be added to our knowledge. In support of this theory there may be cited the well-known experiments of Weichardt and Besche,[42] among others, who, with injections of different forms of albumin (horse serum), have been able to demonstrate the fact that essential bronchial asthma in a majority of cases is a manifestation of a local cellular anaphylaxis of the lungs. The treatment of bronchial asthma with serum[43] and the very instructive observations of Landerer and Schittenhelm that patients had asthmatic attacks whenever they were injected with horse serum strengthens the hypothesis of a local cellular anaphylaxis. Recently some articles have been published, especially in German, on this subject which seem to corroborate this, my view.[44]

REFERENCES.

1. Apostolides, A. G.: On the treatment of bronchial asthma, *Folia Therapeutica*, 1911, April and July.
2. Strümpell, Ad.: "Asthma bronchiale," *Medizinische Klinik*, 1908, No. 1; Lehrbuch der spez. Pathologie, 1910.
3. Schmidt, Ad.: "Beitrage zur Kenntnis des Sputums, insbesondere des asthmatischen," *Zeitschr. für kl. Medizin*, vol. xx, p. 467.
4. Hoffmann: Nothnagle's "Handbuch der speziellen Pathologie und Therapie," Bd. xiii, Asthma, 2d Ed., 1912.
5. Aufrecht: "Asthma, Emphysema," *Deutsch. Archiv für klin. Medizin*, Bd. lxxiii, Heft 5-6.
6. Hoffmann, Fr.: "Asthma," in Nothnagel's "Practice of Medicine," English Edition, 1908.
7. Poirier-Charpy: "Traité d'anatomie," Tome iv, 1906.
8. Rosenthal: "Die Innervation des Athmungsapparates," in Hermann's "Handbuch der Physiologie," Bd. iv.
9. Nicolaides, R.: Φυσιολογια Του Ἀνθρωπου, vol. i, Athens, 1911. *Id.*, 2d Ed., "Über den Erfolg der ungleichzeitigen Durchschneidung der Vagi bei Hunden," *Centralblatt f. Physiologie*, 1900.
10. Kronecker und Nicolaides: "Über die Erregung der Gefässnervencenter durch Summation elektrischer Reize," *Archiv für Anatomie und Physiologie*, 1883.
11. Nicolaides, R.: Φυσιολογια Του Ἀνθρωπου, vol. i, Athens, 1911. *Id.*: "Über den Verlauf der Vasomotoren im Rückenmark," *Archiv für Anatomie und Physiologie*, 1882.
12. Nicolaides, R.: Loc. cit. Rosenthal: "Die Innervation des Athmungsapparates," in Hermann's "Handbuch der Physiologie"; see also Nagel's "Handbuch der Physiologie des München," Bd. i, Kreislaufs und Athmungsorgane, 1909.
13. Cnrschmann, *Deutsches Archiv für klin. Medizin*, 1883, Bd. xxxii.
14. Ungar: *Centralblatt f. klinische Medizin*, 1880, No. 4; *Archiv für klinische Medizin*, Bd. xxi; "Verhandlung des Kongresses für klinische Medizin," 1882.
15. Fürbringer: "Über Ætiologie und Behandlung des Asthma bronchial," *Therapie der Gegenwart*, 1907, No. 2.
16. Matessori: *Presse Médicale*, 1896.
17. Von Noorden: "Beiträge zur Pathologie des Asthma bronchialis," *Zeitschrift für klinische Medizin*, Bd. xx, Heft 1-2, 1892.
18. Predtetchensky: *Sémaine Médicale*, 1905.
19. Brügelmann: "Das Asthma, sein Wesen und seine Behandlung, 1910.
20. Achard, Ch., et Levi, L.: "Troubles vasomoteurs et secrétoires, in Nouveau Traité de Médecine et de Therapeutique," Fasc. xxxi, 1911.
21. Sihle: *Semaine Médicale*, 1903.
22. Apostolides, Ap.: "Ætiologie und Behandlung des Asthma bronchialis," *Therapeutische Rundschau*, 1908, No. 48.
23. Gottschalk: Ärztlicher Verein in Stuttgart, Sitzung am 4, März, 1909.
24. Landouzy: "Cours thérapeutique de la faculté," 1899-1901.
25. Riegel und Edinger: "Experiment. Untersuchungen," etc., *Zeitschrift für klinische Medizin*, 1882, Bd. v.
26. Einthoven: "Bronchial Muscles and Vagus," *Pflüger's Archiv*, Bd. li, 1892.
27. Zuber: Article, "Adénopathie tracheo-bronchique," in

"Traité des Maladies de l'Enfance," par Grancher Comby, 2d. ed., 1904, vol. 1-5.
28. Feer: "Asthmatische Bronchitis," in Pflaunder-Schlossmann "Handbuch der Kinderheilkunde.
29. Comby: "Asthma," "Traité des Maladies de l'Enfance."
30. Audeoud: "Asthma." "La Pratique des Maladies des Enfants," Tom. 3, 1911.
31. Apostolides: "Ätiologie und Behandlung des Asthma Bronchialis," *Therapeutische Rundschau*, 1908, No. 48.
32. Nicolaides, R.: Φυσιολογια Του 'Ανθρωπου, vol. i, Athens, 1911, 2d Edit.
33. Sihle: *Semaine Médicale*, 1903.
34. Salecker: *Münchener medizinische Wochenschrift*, 1907.
35. Todd: *The Medical Gazette*, 1850.
36. Brée:: "Recherches sur les désordres de la respiration," 1908.
37. Apostolides: *Folia Therapeutica*, 1911.
38. Carnot: "Médicaments animaux, Opothérapie," Paris, 1911.
39. Koelliker: "Zur Kenntnis des Baues der Lunge," "Verhandl. der physik. mediz. Gesellschaft in Würzburg," 1881, Bd. xvi.
40. Bonne: "Sur la structure des glands bronchiques," C. R. de l'Assoc. d'Anatomie, 3d session, Lyon, 1909, p. 255.
41. Auld: A clinical lecture on chronic bronchitis, *British Medical Journal*, 1908.
42. Schittenhelm u. Ströbel: *Münchener medizinische Wochenschrift*, 1911. Schittenhelm: "Eiweissbau, Anaphylaxie u. Inneresekretion," *Deutsche medizinische Wochenschrift*, 1912; *Münchener medizinische Wochenschrift*, 1912, N. 2, S. 6 F.
43. Apostolides: Loc. cit.
44. Wolfsohn, Georg: "Thyreosie und Anaphylaxie." *Deut. med. Wochenschrift*, W. 30, 1912.

THE NEGRO AND HIS HEALTH PROBLEMS.*

By J. MADISON TAYLOR, A.B., M.D.,

PHILADELPHIA, PA.

The negro problem is one of anthropology, not of ethics, religion or variegated opinions. It does involve grave sub-problems of humanity, economics, and common sense. Under no circumstances should it be complicated by emotion. The whole race problem, in the final count, resolves itself into what is to become of the members of an alien people transported, by force and suddenly, to an unsuitable, a hostile environment.

Members of this alien race deserve the same consideration as those of any other: no more, no less. They will get it, and all the more readily if partizanship, unreflecting zeal and politics can be kept upon a rational level. Prejudices for and against the negro neutralize each other. They only serve to obscure fundamental issues, producing no good, but only loss of vitality and moral tone in those who entertain them.

The question for solution resolves itself into *whether members of a tropical race, evolved through thousands of years in hot countries, whose characteristics have gradually become adapted to local climatic conditions, are capable of flourishing or even surviving in a climate wholly at variance with the circumstances of their racial adaptations.*† If the answer is in the affirmative then is opened a host of doubts as to the validity of all experience, history and the findings of anthropologic science; also complex questions arise as to what will become of the race till time, the greatest solver of problems, shall reveal. If the query above proposed is answered in the negative we should at once consider what can be done to effect a transference of the negroes to a suitable habitat.

Two or more races brought into intimate contact socially and domestically evolve hybrids. All experience shows that hybrids, the product of sexual union of antithetic races, such as the white and the black, are inferior to the original stock physically and morally. It is demonstrated by well-attested facts that these hybrids of black and white are vastly more susceptible to certain infections; their moral as well as physical stamina is lower than that of either original race. Undoubtedly there are individual exceptions.

Hybridism lowers normal defenses to degenerative diseases, hence inhibition, the fundamental safeguard, is lessened and degenerative processes then proceed with increasingly rapid strides as the alien blood weakens and the stronger influences prevail. In America the supply of the original negro blood is limited; no new infusions are to be expected.

Meanwhile, pure streams of our Anglo-Saxon, Slavic, Celtic and other blood, infused as they are in the United States with a different, but not largely variant, group of Latins, Hebrews, and others, are polluted by the negroid blood. However, those who feel alarm at this fact can take comfort from the reflection that it is contrary to all precedent for a tropic race (so entirely unfit to subsist in a cold climate like ours) to survive more than ten, or at most fifteen, generations. Our subtropical summers may prolong survival more or less.

Education for the negro during emancipation days and long thereafter was slow to receive adequate attention. Race prejudice took on almost unbelievable phases, among which was opposition by the Southern whites to providing adequate opportunities for equivalent education.

Slowly but surely these difficulties are being adjusted. It is a splendid testimony to the inherent good sense of the negro, to his capacities for swift regeneration, that the chief impetus for education (after General Armstrong pointed the way) arose among, and is sustained by, his own people. They are learning, too, that the form and character of this education must be specialized, simplified, along lines of primitive needs, industrial and agricultural. The fundamental requisite is the inculcation of laws of right living, the basis of which is the mutual sharing of responsibilities provided by family life. Domestic hygiene once taught in the schools promptly and radically regenerates that of the household.

Since the manumitted slave is essentially a bankrupt, without capital, all he has to exchange for a livelihood is his ability to work.

In this work he begins as a mere assistant in production, but may then attain to any height of endeavor for which the individual is fitted or on which he is capable of specializing.

Physical fitness is the *sine qua non* to comfortable as well as useful existence. The problem of health of such an individual is thereupon demonstrated to be paramount.

No line of endeavor is capable of accomplishing so much as one which furnishes opportunities to the wage-earner for learning how to maintain personal health at a maximum.

This one central thought must be kept in mind by all who endeavor to solve health problems of the negro. No race which has evolved slowly and acquired definite physical characteristics can be trans-

*Read at the annual meeting of the American Climatological Society, Hartford, Conn., June 11, 1912.

†Another important anthropological problem is whether a people practically in or near a state of savagery can be expected to become civilized or conform to civilized standards within the short space of a few hundred years. This, however, is not germane to the present inquiry.

planted suddenly to wholly alien conditions, climatic or other, and adjust themselves to these new and trying conditions, except through a period sufficiently long and by slow evolution.

The negro is an essential part of the body politic. Health problems of the Afro-American stand close to those of all other citizens.

Ten million human beings, differing in racial characteristics, yet closely interwoven with others socially and domestically, demand critical observation. While valuable aids, they are also serious menaces. During the period of enslavement physical conditions were vastly better. There is so much evidence nowadays of deterioration among negroes, induced by the effects of unaccustomed freedom, that the question of their betterment constitutes a vital part of national economics.*

Throughout the length and breadth of our Southern States, and to a lesser degree elsewhere, negroes constitute a large ethnic factor. Among them are splendid personalities, yet the majority lack elements of stability, of dependableness. They are too often their own worst enemies, deficient in fixity of purpose, in judgment, in those reliable characteristics which fit them for citizenship. Intellectually and morally they resemble children. When, unfortunately, they became a political issue, endless complications arose. Scholastic opinions circulated by ignorant, often venal, meddlers, insisting upon vague altruistic plans, created a chaos on which too little practical light has as yet been shed. Forces are now at work which may solve the more urgent perplexities.

The negro is too often a creature of impulse, of emotion, of shallow impressionability, and swayed overmuch by mere physical promptings. He is a good imitator, which constitutes a valuable equipment for certain kinds of usefulness. Along with these adolescent qualities there are frequently to be found individuals of keen intelligence, good moral perception, faithfulness to friends, and of deeply religious feeling.

When unmarred by damaging environment, ill-usage or vitiating influences, the negro is a far more reliable citizen than are some Europeans. It will be generally admitted by those not steeped in prejudices that the unspoiled negro is ofttimes a most estimable, lovable person. The vitiated negro is, however, a peculiarly uncertain, explosive and dangerous creature. It is safe to assume that had the process of emancipation progressed more slowly along the lines of intelligently guided evolution the negro population would now constitute a more valuable group of citizens. Unfortunately he became a political bone of contention and was suddenly projected unprepared as an equal upon society from the position of an hereditary dependent, unprovided with knowledge or training for the next social phase, viz., that of a free and responsible factor in the Commonwealth. The confusion into which he was forced by the period of Reconstruction (the product of a devastating war waged largely in his behalf) created many complications making for physical decrepitude.

Accustomed for generations to dependency, to serf-like conditions, to paternal harboring; or, on the other hand, subjected to occasional cruel, reasonless injustice, there is little wonder that one so constituted fell promptly under the sway of evil influences, of temptations, became often licentious, brutal, or savagely retroactionary. The mischief-making, self-seeking "carpet-bagger" found in him a tool ready to his hand; and "rum, rapine, and rebellion ran riot." Industries were then paralyzed, reorganization was slow and imperfect, the whole local social fabric suffered, the burdens falling heavy enough upon all, but most crushingly on the crude, plastic, unformed negroid element.

To-day a deplorable condition of affairs prevails among these alien racial elements of the community. Many of our duties to them are not yet adequately defined, nor are the factors yet precisely determinable. All will become plain as prejudices on both sides subside and self-seeking politics finally gives way to statesmanship. The solution can only be by patient, tolerant compromises, always utilizing the principles of critical science and true Christianity to guide our decisions.

Solution of the health problems of the negro would seem to be particularly significant and urgent, so intimately interwoven are they with the industrial. The most obvious need is for education of the young in principles of citizenship. No remedy can exceed in value implanting the seeds of self-respect, of industry, of responsibility, of obedience to constituted authority. The most urgent measure is for legislators to control the sale and distribution of delirifacient poisons. Bad as the vitiated negro is, he is an angel of light in his original state compared to any negro crazed by alcohol, cocaine or morphia.

This is the one insistent factor that for the moment overwhelms and obscures all others. Remove or reduce to determinable limitations the accessibility to narcotics and the residue can be dealt with by reasonable means. In establishing punitive measures against free access to alcohol and narcotics some innocent persons will doubtless suffer with the guilty, *i.e.* a few free-born whites may be deprived of their Heaven-sent privilege of going to Hades in the fashion of their choice. This indirect "injustice" or "evil," if such it be, can be endured if only adequate restrictive legislation shall be ultimately secured and enforced.

The proposition would seem thus placed directly up to the voter and the legislator.

Under slavery the health of the negro was peculiarly good, well in advance of the rest of the community. Tuberculosis was then practically unknown among the blacks. In comparing their status then and now something may be conceded to the whole group of aggravating conditions then prevailing, compounded of ignorance, defective instincts, laziness, improvidence, morbid optimism, effects of poverty and the like. All these factors, however, are, at their worst, little things compared to mental and moral vitiation through the destructive effects of narcotic poisons. These bear heavily on collateral health problems; *e.g.* susceptibility to tuberculosis, whereto the negroes are shown to be now three times as liable as the whites.*

Are we now as a nation prepared to deal efficiently with these obviously crucial, though deeply intrenched abuses? How can the paramount significance of his proposition be brought to the consciousness of our citizens?

The negro of the rural sections of the South is now, according to the evidence, in a far better con-

*I myself was a slave-owner, living in boyhood on a plantation. My having then and now much to do with the black peoples may qualify me to express more accurate and just opinions than those who have had no such actual experience.

*See "Tuberculosis in the Negro," by Seale Harris, M.D.

dition of health and morals than the negro of the cities. My personal observation is at the present time chiefly of the urban colored population, far north of their normal habitat. Here a deplorable state exists, part of which is due to natural causes, chiefly climatic. It is far worse than among those races which, through generations of selection and specialization, have become adjusted to urban confinement and restraint. Especially is this true of the Hebrews, who by long evolution have acquired relative immunity to many infections, and resistance to the effects of depressing influences. It will require no less than many centuries for the negro to become adjusted to cold climates. He is unfit racially to flourish above the latitude of Mason and Dixon's Line. All those who know the facts urge that the negro shall never attempt to remain above the line of the Carolinas. Unless the negro is endowed with inherent potentialities radically different from those of all other tropical races, he will deteriorate and perish in cold climates. Just as the Northern races, like the Goths and Vandals, who conquered Southern Europe, deteriorated and disappeared in a few generations, so will any weaker race from the hot South disappear in the North.

The negro is essentially a creature fitted to dwell in wide spaces under the vault of heaven. He must have access to the sun. He is not to be expected, at least not for many generations, to labor so regularly or so continually as one less recently in a savage state. Good work he can do; but those who know him well are aware that the incentives to do his best are not the same as for the Hebrew, the Celt, Slav, German or Italian. Long monotony, confinement, deprivation of normal solaces to his semi-savage spirit induce gloom, revolt, explosions of retroactive impulses. He needs praise, kindly encouragement, personal solicitude and direction, and will then often surpass himself. Fortunately, he is growing ambitious to copy the best in the methods of those about him, and will succeed, provided he is aided by wise, firm and kindly guidance. The negro has become more or less of a political power and it is fortunate that in his views, opinions and decisions his guides are usually the clergy of his own race. It is fortunate that these colored pastors are, in the main, good men, clear-sighted, aware of the gravity of their position, their unique power. Many of them seem fortified by dignity, self-respect, and conscientiousness. They exhibit a deeper interest in the personal welfare, and especially the mental and moral training of their flocks than do those of many other religious bodies. The danger is that too many of them are not men of broad views, with minds above mere financial considerations in the administration of church economics. They are often insufficiently alive to physical or hygienic needs, especially ventilation, temperance and wholesome living. My personal experience with certain of these pastors is most disappointing. They exhibit a degree of narrowness, of selfishness, greatly to be deplored. It is almost impossible to impress some of them with their paramount duty to advise their congregations to seek the country, especially the warm countries, where alone they are racially fitted to flourish—even to survive. Fortunately there is now a large and growing body of negro physicians, dentists and pharmacists.*

*There recently met in Baltimore a national association of these professions, with a membership of three hundred, and two thousand colored men are practising medicine and the allied professions in the United States. Much may be expected from these educated and enlightened persons which will redound to the essential betterment of the race.

It is obviously through education in right feeling, thinking, and doing that any considerable advances can be effected in the ultimate evolution of the black race. The basis of this advance is to encourage in all ways wholesome instincts; to make the integrity of the family the point of departure for all effort, all rewards.

Purity of race is always of paramount value. Hybridism leads to all sorts and degrees of constitutional vitiation. Autochthony is an important condition of racial advance. Before freedom the negro was a chattel, and whether the progeny was white or black, it was equally utilizable. The admixture of a highly cultivated white male with the more simply organized black female produced then a superior article of commerce, a greater promise of available capacity in the product.

The autochthony of the black race is better assured since freedom, because marital alliances can now be at least more stable. Marriage with whites is rare and forms a negligible ethnic factor. This state of familial stability is to be welcomed and if assured it will make for racial betterment.

Hybrids are of proverbially low resisting power to morbific agencies, physical and psychical. This is particularly true of the mulatto and other grades of negroid admixture. The pure blood negro holds the mulatto in deep contempt.

The negro is essentially domestic, and while by no means so conscientious in sexual matters as some races, often exhibits commendable capabilities for faithfulness.*

Vagrant tendencies were exaggerated "before the war" by divers causes, the chief of which was the power of the owner to dispose of slaves diversely.

All over the South schools and colleges for the negro are being established, most of them through the initial impulses emanating from Hampton, Fiske, and Tuskegee. Also far-seeing, benevolent men and women of the North are giving of their time, strength, and means to this incomparable object.

*An important observation made by several Southern physicians is to the effect that sexual lawlessness, resulting in lynchings, is to be explained thus: The male negro is nearly always infected with gonorrhea. He neglects treatment habitually. Chronic prostatic irritation ensues. Thus sexual impulses frequently become overmastering. Alcohol particularly inflames this state and likewise dethrones reason; hence the first female he meets he is tempted to assault. This if often a white female; thereupon the fury and vengeance of white men are excited and disastrous results follow to the negro.

DERAILED FORCES.

By MARGARET A. CLEAVES, M.D.,
NEW YORK.

Not long since the Twentieth Century Limited was hurled over an embankment into the river below. The cause, a broken rail. Back of the actual break was a weakened strain in the atomic structure of the iron itself. Derailed forces work havoc; they are always pitiful and to be dreaded.

The women who recently indulged in a window smashing crusade in London, those who have gone on hunger strikes, and those who with untimely mouthings stalk to and fro upon the earth, are the saddest of living derailed forces; they have missed the joy of life. For them its sweetest springs have not flowed. They have not been and are not physi-

ologically environed. In addition there is an inherent flaw in their fundamental structure, as in the atomic structure of the iron. Superposed upon that is a broken physiological rail. Physiologically, or better, unphysiologically, there is a reason for it.

It is never known when the eternal hysteria present in the physiological unit will break forth, as do pent-up volcanic forces. Derailed human forces are as unsafe as these or the engine and train crashing to the river below.

The visualizing eye of the trained and experienced physician, whose fundamental equipment renders him expert in a knowledge of scientific physiological chemistry and psychoanalysis, relentlessly illuminates these evidences of imperfect mental and normal balance. The revelations are as pitiless and self-revealing as time. None of life's illusions are left.

Illusions are essential to the beauty of life. They soften and veil its hideous truths as does the magic atmosphere of the southern seas the volcano's scarred sides. It is a pain to see them swept away, and in their loss not only maturity but youth suffers. But such is the trend of the day.

Psychical manifestations depend upon physical conditions. To have normal mentality the best of physiological life is necessary. Self knowledge, which is essential to the revelation of the true man or woman, comes with time and experience. To some it comes earlier in life than to others; is influenced by inherited strain and physical conditions.

In the germ cell, from which these erratic forces sprang, whether represented by the feminine or masculine half of the physiological unit, there existed a strain or tendency to lack of nerve stability. The untoward expressions to which such organisms are prone are controlled or limited by training and environment.

Nothing stands for more than the discipline and training of the best of early home life. Nothing so surely invites control as nature's fullest physiological expression, but within the environment of a safe anchorage. Naught else has power to bring the same rest, peace and content. But it must be the best of physiological living. In its absence the *needs must* and devotion to duty are the best of safeguards.

Unless supremacy of physical wellbeing can be obtained under ideal conditions, it may be secured at the expense of the best of normal balance. The ego may become too dominant in its ever encouraged supremacy. The question arises, whether there are not such at this moment prominently in the public eye.

When backed by a vigorous, alert, and versatile mentality, such an ego asserts its supremacy by its thirst for power. Once the taste is acquired the appetite becomes insatiable. So long, however, as life remains physiological, the balance wheel maintains control. But let there be the weakened strain as in the atomic structure of the broken rail, and derailment follows. Otherwise, the conscious ego keeps ever in the foreground to the control of the situation. As the time of life approaches when there is need of a physiological readjustment the stronghold of exact moral balance is apt to be shaken. Then it is that the submerged consciousness, or subconscious ego, tends to become actively in evidence. The supremacy of the conscious ego is not maintained in its full vigor.

What are the physiological conditions that tend to this undoing? What influences have been at work to bring the activities of their submerged selves so prominently to the fore in the modern Caesars and the militant suffragettes? Why these volcanic outbursts, these expressions of an erratic force?

Eternal feminism is unquestionably a factor in the militant suffragettes. But while in neither modern nor yet historic Cæsars is it *feminism,* there is the same fundamental influence at work. What has happened? What part do the phenomena as exhibited by nature's physical forces play? Is chemicophysical, life exempt from the influence of volcanic eruptions, earth shakings, cyclonic disturbances, variations in barometric pressure and electrical conditions?

In the latter, as in the purely physical world, these disturbances are most felt where fundamental physical conditions are least stable. The inherited strain or tendency within the germ plasma is the predestining force. Could the ofttimes ludicrous and always pitiful exhibitions of physiological derailment be prevented? What unphysiological conditions tend to these outbursts? Why do these men and women fly their physiologic orbits? Why their disturbed viewpoint, their lack of the sense of proportion, their abnormal mentality and morality? What has occurred to obscure their logical thinking?

Do the revelations of the scientific pyschoanalyst, brutal as the findings of the skilled pathologist, answer these questions?

Instead of modern psychoanalysis primarily, shall we not look to its standard of exactitude, chemistry, and physiological chemistry especially, for the truth? The fundamental truth must be sought in its revelations.

Activity is essential to being. The organism with its myriads of chemical cells is forever seething in the malestrom of chemical activity. The process of brain thinking bears the most intimate relation to and is influenced by the processes of secreting and excreting. Whatever interferes with the normal secretory and excretory functions interferes with the intellect's supremacy.

The results are most marked and disastrous in unstable organizations, especially at the time of physiological readjustment. It is then that judgment becomes biased, while poise trembles in the balance, or is hopelessly lost.

Karin Michaelis has written of the dangerous age in women. She might have equally well written of the dangerous age in the physiological unit. Its expressions are modified in the masculine half by reason of life's training, of his habits, and environment. That she has not represented the mass, nor yet the best of women, does not gainsay the truth underlying her theme. The physiological conditions at the bottom of all this unrest and turmoil is actively to the front with suffragettes, militant and nonmilitant. Among the ardent campfollowers are younger women to whom fruition is unknown and for whom a physiological balancing of life's strongest instincts is not established. Living under conditions where life's fullness is repressed, or fails of its physiologic expression, they follow the lead of maturity which, for the time at least, can only be regarded as a derailed force. In these that perfect balance, or poise, which tells of life's full fruition does not exist.

The years which exact the heaviest toll are from the fourth to the fifth decade. The greater vitality of individuals with the intensity of modern life

tends to its extension well into the fifth decade. In exceptional instances the sixth decade is reached before full physiological readjustment, with consequent self-understanding and poise, is established. While this should not be an age more dangerous to women than to men, it is by reason of their imperfectly expressed lives and environing conditions.

The lives of women as a rule are full of feeling and emotion rather than purposeful thought and effort. Repressed thoughts, feelings, desire even, may become as dangerous as the earth's unliberated forces.

"All the joys of life are the joys of creation."

To win the best from life, that perfect controlling balance of the supreme and submerged self, the functions of creation must be met. "To create in the region of the body, or in the region of the mind, is to issue from the prison of the body."

The lives of the erratic forces of whom the militant suffragettes may be taken as a type have somehow failed of their fulfillment. Their bodies enchain their liberty. They are storm tossed and at sea from the turmoil within, nor do they know how to reach that peace and content of mind which is the expression of physiological equilibrium.

Through a constant harking back the impressions made by life's lack of understanding and harmony have become indelibly engraved upon their submerged consciousness. These impressions concern the other half of the physiological unit, man, and are apt to be tinctured with all of a woman's complex feelings toward him—jealousy, suspicion, resentment, anger and hatred, so near of kin to love.

Throughout earlier life these have but momentarily imaged themselves upon the conscious ego. These impressions, however, upon the subconscious mind become fixed and deepened under wrong physiological conditions, until they have the very semblance of truth. So deep and clearcut grows this graving that all sense of its untruth is lost. In it they utterly fail to see an expression of their unphysiological selves; to realize that they are in prison to their bodies. Only a half of the physiological unit, and even when mated, too often mismated. What better can be expected?

Possibly men tend less to conduct evidencing physiological derailment. This should be the case, for their natural tastes, instincts, and passions find normal outlets all along the way. They have many compensatory activities of mind and body. Women lead lives of repression, physical as well as mental. Life fails of its full expression. Physiologically endowed with the ability to create, fruition does not follow upon blossoming. For them the organic joy of life is lost.

Their greater numbers, as well as the frequent necessity of becoming commercial factors, compels the seeking of outlets for their repressed energies. These fail to provide the same stimulus to the chemism of life in this especial regard. Still further, the special activity taken on usually exacts its pound of flesh. The entire chemism of life suffers and the injury is expressed physically, mentally and normally.

In either event, the psychical, with its never-ending and conflicting emotions, is always the controlling force. The activities taken on exact too heavy a toll and the woman ceases to be a physiologic creature.

Her physiological privilege, so intimately connected with her power to continue life, becomes a drain upon her vitality. Through long continued and excessive, or otherwise disordered, function the controlling influence upon her higher brain is lost.

Nature intended that she should have periods of repose or physiological rest. There have been none. At every step nature has been defrauded and foully dealt with. Loss of control supervenes, and with that loss the forces of her subconscious ego, which have an inconceivable emotional range are let loose.

In the case of the militant suffragettes they are turned to window smashing, hunger strikes and outrageous attacks upon men in governmental and municipal power. No true physiological woman would be guilty of such conduct. Nor would these women to the same extent exhibit such loss of control had they but known the pitfalls and dangers awaiting unphysiological lives at this time.

The x-ray of science previsions a complete exposé of unphysiological lives. It tells with scientific precision why such as these are cheated of full mental poise. To science it is known that that only comes through the highest physiological living.

Throughout the lives of unphysiological woman, or man, there is a never-ending pose. This is bondage, and bondage is galling. Every living thing craves freedom. Without they strain at cords and flutter at bars helplessly and hopelessly.

To be in prison to one's body is the greatest bondage of all. To fail of life's physiological expression is to never know freedom, to pose always.

The bird who is singing his matin song outside of my window this spring morning is filled with the fullness and joy of life. His song is its instinctive expression, and to it will come the happy answer in his mating. Here there is neither pose nor bondage.

There are occasional women who alone and unaided can take up the larger life as does the man. Do they safely outrage nature? Will there not come a time of reckoning? It is given to but few women to do this, and they only succeed who fix their eyes steadfastly upon the stars. The world never knows the cost to such as these because of their steadfastness, perfect poise and calm outlook. They are not common. To the eyes of the world they seem self-sufficient, yet they are not. No mortal is self-sufficient. If the need for full expression of their physiologic selves be not met and crowned, as is right, woman, whatever their walk in life, are prone to become derailed forces, working havoc and devastation in their uncontrolled and uncontrollable fury. Men are not exempt.

These truths are not realized—especially are they not realized by women—but truth they are none the less. They are more or less disillusioning, according to the cells' heritage.

As maturity approaches the average woman finds lessening opportunity for an expression of herself. She finds it increasingly difficult to dominate the scene, and to both men and women the footlights are dear. The time comes for a physiological readjustment. Nature never intended that this time should be passed in the torment of unphysiological bondage. But too often it is. Unphysiological living has been superposed upon a strain of inherited instability.

The impressions of life's unfortunate experiences and emotions are deeply graven upon the submerged consciousness. At the time of physiological readjustment the actual chemism of life undergoes a change. This involves circulatory changes, ofttimes a poisoned blood stream. The subconscious center

by the loss of circulatory control assumes dominance and sways the woman's higher self. In extreme cases cerebral control not only becomes uncertain but is lost. She is storm tossed by the feelings and emotions of her unphysiologic life, which are actively in evidence, as are sea growths and the flotsam and jetsam of the ocean's surface, activities in the waters of the Saragossa Sea. Life's tidal influence has this effect when life is unphysiologically lived. Judgment is lost and shipwreck imminent.

From infancy up the physiologic unit receives impressions which leave indelible traces. They may when other than physiologic leave scars, which in later life become foci of actual danger. By reason of her too often unsatisfactory relation to life women receive many such impressions. In the fullness of life the image upon the conscious self is but fleeting. Just so sure, however, as the photographer's film registers impressions, whether clear cut or blurred, to which it is exposed, just so sure does the human brain bear indelibly fixed upon its constituent cells the impress of all life's happenings.

Among these are many which are irrelevant to life's harmonious development. They seam and scar as does the volcanic lava. Her woman's nature has been defrauded in her creative relation, which is the very fundament of her being. The chemism of this relation to life has suffered interference.

Moreover, into the dull, deadly level of the average woman's restricted life there comes too little to provide that stimulus of change which invites the best of general cellular activity. Here again the process of brain thinking must be considered in relation to the liver and its secretory function, to kidneys and bowels in their excretory relation. It is far from being all psychic. Matter controls mind. Mind must be so trained and disciplined as to minimize this control. In that way man becomes supreme and godlike.

But this attainment previsions the best of ultimate cellular changes with normal secretory and excretory functions. Individual opinion as to the merits of the case in so far as suffrage is concerned has no place here. In their less stable emotional control and complexity due to their sex privilege, women are less desirable factors in matters demanding poise and judgment than men. Business training and environement are not without effect, but the bloom suffers impairment.

Ideal physiological life would minimize the danger, but man's work precludes the physiological living for women. Could women live as did our mothers, grandmothers, meeting life's physiological expression to the full, there would be less of unrest, dissatisfaction and clamor for notoriety. Could her pose be that of the Roman matron, Cornelia, in the midst of nature's jewelled setting, her children, instead of that of a physiological cheat and defaulter, there would not come at life's maturity the expressions of an outraged nature, with its unsatisfied longings and desires. There would not be the constant desire and effort to still hold the center of the stage and dominate the scene.

However, the ideal life has been and still is being lived by many women. The fault lies not alone with the feminine half of the physiological unit. Man fails of the best. He, too, fails in his understanding and appreciation of life's full physiological meaning. His energies are misspent—wasted. Responsibilities which should be his are evaded. Personally he does not suffer as does the woman. But suffer he does. The degree depends upon the inherited strain and the extent of unphysiological living. To man as well as to woman, in their hour of physiological readjustment comes in greater or less degree pain, conflict and physiological peril.

In the modern Cæsar, as well as in the illustrative type of woman, the solar plexus fails of full inhibitory power. At that time *his* dominant traits are revealed in varying degrees of crystallization.

Do the brains of these dominating forces, with their inherited strain of nerve instabilty, express the best of cerebral physiology? Did Cæsar's? Is the moral fiber not deficient? Cassius' inquiry was more than pertinent when he asked, "Upon what meat doth this, Our Cæsar, feed, that he is grown so great?" But the superb crystallization of knowledge and experience embodied in this really scientific query sprang from the same brain that tersely epitomized, "The life of all's in the blood."

Modern scientific research and methods substantiate both question and statement. What influence is at work other than that of physiological readjustment that tends to capitulation of the moral force? What has so disturbed the chemism of life tending to the removal of its supporting bulwarks? Is it fundamentally mind or matter?

Maturity seeks compensation in the pleasures of the table. The habits of eating and drinking become less abstemious even than in early life. The chemistry of assimilation and disassimilation, of which life has exacted tribute all along the way, departs more and more from the normal. Irritation of its terminal fibers are reflected to the center of this inhibiting force, the solar plexus, or abdominal brain. Normal circulatory control suffers impairment.

Toxic stimuli comes from within the body as well as from without; they may act under the right conditions as an organic stimulus; under wrong the toxic effect becomes paramount. The ultimate chemism of life in all its complexity of relation because of sex is not yet understood, nor its rationale explained.

It is shown, however, by observation and experience that the nerve disturbances directly traceable to the influence of sex are comparable clinically with the phenomena of intoxication and abstinence resulting from the introduction of pleasure producing substances, as represented by the alkaloids of certain drugs.

In both instances use may easily become abuse and all the phenomena of disordered nerve states ensue.

Excitability, uncontrollable fury, depression, exhaustion, even follow. Nothing suffers more surely from this unbalanced and poisoned circulation than the moral fiber.

Is it not deficient in the modern Cæsars; likewise in the militant suffragettes?

The tendency to inherited instability counts for much in both of these illustrative types. Whether this strain exists or not, the modern as well as the historic Cæsars are born with a thirst and hunger for power, dominance and supremacy.

Were not such dominant forces born, worlds would not be conquered, poles discovered, thought transmitted wirelessly, scientific truths revealed, tremendous industries built up and colossal fortunes made. The strain is as inherent in their ancestral cells as that inherited strain or tendency in the germ plasma of the lion which makes him the king of the beasts and the terror of the jungle.

For the best the inheritance of stability is essential. Otherwise in life's readjustment, as in adolescence, physiological disturbances follow. When these conditions supervene upon a conscious ego of great supremacy, unless the stability of cerebral control is of the best, danger lurks.

Glimpses of the subconscious ego and its workings are not unlike the revelations of the carelessly curtained rear windows of dwellings. Pictures are unconsciously silhouetted which, if the conscious ego retained its supremacy, would never be seen. In the withdrawal of the curtain the subconscious ego too often reveals the mountebank, not the man, the unphysiological fury, not the physiological woman.

Did Nature intend that mankind should pay this penalty? Should the abdominal brain lose its power of inhibition at the time of physiological readjustment? Was it her intent that men and women should feel resentment at the gliding years?

From a calm, judicial reading of physiological truths, there is but one answer to give to these queries, and that in the negative.

Were life but physiological from ancestral plasma to its every subsequent chemicophysical expression and environing condition, the maximum of its fundamental organic joy would be felt, the gliding years would bring their own compensation, and the end eventuate without hideous disillusionment from the rending of Isis' veil.

616 Madison Avenue.

WORRY AS A CAUSE OF ARTERIOSCLEROSIS.

By HERBERT C. CLAPP, M.D.,

BOSTON.

Almost all of the books and essays on this now fashionable disease, in recounting its causes, either entirely omit, or at least barely mention in passing, one which in my experience seems worthy of an exceedingly important place, either as the prime factor or probably far oftener as a very efficient cooperator, namely, *worry*. The etiology of the disease, as generally agreed upon, includes syphilis (which Anders and many others call the "overshadowing factor"), alcoholism (and perhaps excess of tobacco), overeating (especially of meat), excessive muscular strain, gout, rheumatism, Bright's disease, lead poisoning, hereditary influence, and some toxin or infection. While each one of these is undoubtedly often very effective, either singly or in combination, yet I certainly have met with not a few cases where apparently most, if not all, of these causes had been absent or relatively infrequent, and where worry in a marked degree had been present, especially in certain business or professional men of sedentary life, whose moral habits had always been exemplary.

One notable advantage to be derived from the recognition of worry as a prominent cause is that we thus become more able to avoid the imputation of casting reflection on a person's character. When a man has an attack of angina pectoris or of dilated heart with all the dropsical accompaniments, or of cerebral apoplexy, or of gangrene of the extremities, all of which may result from a so-called hardening of the arteries in different parts of the body, it is neither nice nor pleasant, and it is very often exceedingly unjust to add to his manifold discomforts by casting some suspicion on his morals. This suspicion may occasionally be inferred, even if not designedly or openly expressed, and it will be unfortunate if the idea becomes as prevalent among the laity as it is now among a portion of the medical profession. As to the causation of some diseases of an entirely different kind, we are partially justified in forming a snap judgment without knowing anything about the particulars of the individual case. For instance, so large a majority of the men who are afflicted with locomotor ataxia have previously had syphilis that a guess that a particular individual had strayed from the path of virtue, based entirely on his having this disease, might not be very far from the truth. Again, the sight of a hunchback, no matter how healthy, immediately suggests a previous spinal tuberculosis. Likewise, certain well-known pits or permanent depressed cicatrices on the face are interpreted by everybody as undisputed evidence of a former smallpox. This method of drawing an inference, however, is not at all applicable in arteriosclerosis. Its causes are so various, so indefinite, and often so composite, that any guess must be entirely out of place, and the question is often not easy to decide even with abundant information before us.

If obliged to select any one cause as commoner than another, instead of syphilis I should choose overeating, especially if associated with a sedentary life. In these days of prosperity, advanced civilization, and high tension overeating is exceedingly common; and since the experiments of Professor Chittenden, Horace Fletcher, and others we are realizing more than ever that most of us eat more than is necessary. Lord Bacon wisely said: "The virtue of prosperity is temperance," which many good people interpret as referring only to abstinence from intoxicating liquors. Conscious that they have not the fault of alcoholic intemperance, they complacently fold about themselves the garment of self satisfaction, and continue to indulge in the well formed habit of gormandizing. Caterers say that teetotalers as a rule eat much more than nonabstainers. It would be well if the numerous temperance organizations should begin to consider the advisability of making an important part of their campaign against overeating as well as against drinking. This overfilling of the human furnace with more fuel than it can thoroughly burn up, if sufficiently prolonged, is generally bound to have its effect on the walls of the arteries at some time or other, perhaps only after the lapse of many years. The interval is often so long during which nothing startling has happened, that the consequential nature of the disease when it does come is often not recognized. Indeed, hardening of the arteries is not infrequently considered as one of the customary and proper accompaniments of a ripe old age, or at least of middle life, like the natural process of decay in the leaves of a tree in the fall. That this is not universally true, even at fourscore years, has been proved many times by autopsies on old people, notably on the world-famous Thomas Parr, who died at the advanced age of 152, and whose arteries were found by Harvey on examination after death to be perfectly sound. In fact, there is some reason to believe that if our people lived a perfectly proper and correct hygienic life in every sense, that is, if they were paragons, there would be little heard of arteriosclerosis, and much of that little would be based on the faults of their ancestors, handed down perhaps even four or five generations. Human nature being as it is, the principal reason that old people have this arterial

trouble oftener than the young is because they are greater "sinners" and for a longer time, during which they have not corrected their bad but not necessarily immoral habits, a very long continuance of which is necessary for the production of the affection. Within certain limits the arteries are not diseased because they are old, but they are old because they are diseased. Of course there ultimately comes a time, sooner for some and later for others, when, like everything else, they will wear out with the best of use; but we naturally want to postpone this time as much as possible. One of our purveyors of milk forcibly advertises buttermilk on his wagons with the slogan "Drink buttermilk and live forever." Perhaps even Metchinhoff would not advise us to take this too literally. Query: Did Adam, who lived 930 years; Seth, 912 years; Enos, 905 years; Jared, 962 years; Methusaleh, 969 years; Noah, 950 years, and some of those other worthy gentlemen of olden times, drink buttermilk?

Overeating is a relative term, and most fat people come honestly by their fat. The pleasures of the table are too much for them. Now and then, however, a fat person is really and truly a small eater, as a thin person may be a large eater. The activity and completeness of the processes of digestion, assimilation, and metabolism differ tremendously in different men and women. Fat people are supposed to be jolly (which is not always true), and cheerfulness is certainly a wonderful aid to good digestion. Such a person, with a sufficiency of physical exercise, may digest and assimilate as much food as a person of average size; but if he eats more than this he probably will have a surplus of which he is unable properly to dispose. The rationale of the effect of overeating in this connection in persons of any weight is well known to physicians, and concerns both the quantity and quality of the food. In these cases the blood vessels are constantly overfilled and the blood pressure is therefore increased in them. Increased blood pressure is supposed to be one of the principal immediate agencies in the production of arteriosclerosis. Again, the intestines being overworked by the surplus of food which they are unable properly to handle, toxins are therein generated, which by their absorption cause autointoxication. These toxins not only affect directly the tissue cells of the arterial walls by inducing an irritation that results in a loss of elasticity and degeneration, constituting an arteriosclerosis, but they also affect them in a similar way indirectly through the medium of the vasomotor system, over which they have a powerful influence.

Overeating is liable to produce these unpleasant results in a person even if he is habitually jolly. Ten times more will it do so if he is given to worry. Constant worry takes a powerful hold on the nervous system. Nothing is more effective in inducing neurasthenia. Romberg says: "Neurasthenia is a cause of arteriosclerosis, because of frequent alternations of blood pressure occasioned by the unstable and excitable nervous state." Neurasthenia is also one of the most fruitful causes of intestinal indigestion and its consequent autointoxication, even independently of overeating. Autointoxication, in its turn, besides directly producing arteriosclerosis, tends to produce more neurasthenia by poisoning the nervous system, and a vicious circle is thus established. So the "good" work may go on like the operations of a battledore and shuttlecock, and the poor victim is on the high road toward future trouble with his arteries. This method of reasoning is to me a pretty convincing argument that worry in connection with overeating may have a powerful additional influence in causing arteriosclerosis.

The fact that sooner or later the arteries feel the wear and tear of life is well expressed by Osler in "Modern Medicine," as follows: "Among organs the blood vessels alone enjoy no rest. Not only does a ceaseless rush of fluid pass through them at a speed of ten feet a second, but the walls of the main pipe are subjected to a distending force of 2 1/5 pounds to a square inch 60 to 80 times a minute; 80,000 to 100,000 times in the 24 hours. The heart has rest in diastole, but, distended by the charge from the left ventricle, the arteries pass it on, partly by the natural elasticity of their walls, partly by an active contraction of their muscular fibres. Like other organs, they live under three great laws—use maintains and in a measure sustains structure; overuse leads to degeneration; in time they grow old, in threescore or in fourscore years the limit of their endurance is reached, and they wear out. The stability of tubing of any sort depends on the structure and on the sort of material used, and so it is with the human tubing. With a poor variety of elastic and muscular fibres in the blood vessels, some are unable to resist the wear and tear of everyday life and have, at 40 years of age, arteries as old as those of others at 60."

Excessive muscular strain, long continued, by obstructing the peripheral circulation and thus inducing increased blood pressure, is universally admitted to be a fruitful cause of degeneration of the arteries. Everybody knows that most laboring men, compelled to work constantly and to excess long, weary hours, get old before their time. Much more is this the case, I am sure, if to this overwork is added the effect of worry and other depressing emotions. How often we see such men at fifty, or even less, laid on the shelf and supported by their children, thinking that they have already outlived their usefulness? How often do we read newspaper accounts of accident or death (most likely written by reporters of twenty), wherein the victim, fifty years old, is spoken of as the "aged man"? And this when we ourselves are sure that people in some other walks in life, more happily placed, retain their vigor and faculties for many, many more years. "A man is as old as his arteries." "Use maintains, overuse leads to degeneration."

Likewise we can easily believe that excessive mental work may lead to arterial degeneration. And here I want to protest against the silly delusion which many good people have that no amount of hard mental work ever hurts anybody. This statement, if questioned, is apt to be so hedged about with limitations, such as providing there is sleep enough and food enough, etc., that its force is practically almost emasculated. School teachers especially resort to this statement, perhaps in order to stimulate their lazy pupils. If any breakdown occurs, the teacher does not like to admit that it is from too much study, but lays all the blame on dances, parties and social dissipation, which, of course, are not to be disregarded, if they enter into the question. This is not always the case.

Now we know that people differ tremendously in their ability to work their brains; and that what is overwork for one is child's play for another; and that we all have our limitations beyond which

we cannot go with safety, no matter how many hygienic influences we put around ourselves; so that we must admit that at least some of us, and probably most of us, whether we actually do so or not, can injure ourselves by an excess of pure and unadulterated brain work, even if we faithfully try otherwise not to break nature's laws. From this mental overwork alone comes a certain amount of the wear and tear of life, which knocks the elasticity out of our arteries as well as out of our steps (if it lasts long enough), and which makes us prematurely old. This is true for most of us, and it is no just criticism to instance on othe other side a few men like Gladstone, of enormous powers of endurance, both mental and physical. In fairness to the other side, however, we are forced to admit that much of what is called mental overwork is not so at all, but only a moderate or proper amount of work, plus worry or other depressing emotions. The old proverb that "worry kills more than hard work" is universally admitted to be true, and very often the men that worry thus kills die with hardened arteries. They are often among our most honored and valued citizens, and are cut off before their time by more or less intense application to business mixed with the natural worry and anxiety which our modern strenuous competition and the desire to get rich quickly seem almost to make necessary, especially in neurotics or in persons of nervous temperament. Without this terrible worry in most cases they might readily stand the work. With the worry they are apt to be exhausted by sleepless nights, a great consumer of the bodily energies, by neurasthenia, and by interference with the proper function of their nutritive or trophic nerves in relation to the tissues of the arterial coats. Their worry also easily induces the oncoming of gout, rheumatism, Bright's disease, diabetes, etc., which facilitate the advancing arterial degeneration, especially if they have a hereditary weak streak in that direction. Such men, in such dilemmas, are strongly tempted to overstimulate with alcohol. If they were anxious for any assistance in helping them along the unhappy road on which they were already speeding they could not do better than apply to this agency. In such cases, if they die, is it not really at bottom the worry that kills?

It is well known that in autopsies performed in hospitals for the insane arteriosclerosis is a very common finding; and it goes without saying that worry as a clinical symptom is found in such places with the greatest frequency. This may not prove but strongly suggests the etiological relationship of worry to arteriosclerosis.

In fact, is the proof much more scientific as to the other causes which were enumerated at the beginning of this paper, and which are now pretty generally accepted? Beginning with syphilis, recent reports of examinations of Egyptian mummies show a great deal of arteriosclerosis, fully as much as we have now, and yet in those early times syphilis was supposed to be unknown. How could it be at that time "an overshadowing factor," even if it is now? Again, as to alcohol, it has lately been argued that if this is such a common cause, autopsies in hospitals for inebriates ought to disclose a great deal of the disease; whereas, an examination of the records of one such hospital recently showed an amount at least no more than the average. As to meat eating, certain British observers in India, where very little meat is used, have reported quite as much arteriosclerosis as among European people; and yet from clinical observation we have good reason to believe that all of these, as well as some other causes, are efficient. A few mummies or one small inebriate hospital do not afford statistics on a large enough scale.

Some in skepticism will naturally turn to the vast army of worriers in this world of tears, and will ask why it is that they do not all develop arteriosclerosis, if it is such a potent cause. Thirty years ago, when Koch discovered the tubercle bacillus, and we learned of the millions of germs of tuberculosis seemingly omnipresent, a similar problem confronted us about that disease. The answer then lay as now, in the receptivity of the system, in the condition of the soil. One great help toward the solution of that problem, as in this, came from the analogy of scarlet fever. Why is it that half the people in the world never have the latter disease, in spite of frequent exposure? To be sure, arteriosclerosis is not a germ disease, but the question hinges to a great extent on the quality of material in the arteries given to each of us by heredity, and our manner of living. Some people have such poor stuff in them that it is easily overwhelmed. Some can stand almost anything. Comparatively little tobacco will induce in one man a tobacco heart, whereas another may use large quantities of it, and live happily to an age of 105 years. A garden rubber hose pipe of one quality may quickly succumb to the low pressure of Boston's water works, while that of another quality may stand up bravely against the much higher pressure of the Brookline system. The buildings of the Massachusetts State Sanatorium at Rutland are covered on the outside with plaster. That on the first set of buildings had little by little all dropped off within perhaps three years, and had to be renewed. That on the second set after perhaps ten years is apparently as good as when put on. The first contained proportionately less Portland cement and more sand; sand is cheaper than cement.

To learn the disastrous effects of worry in many other directions one has only to read that famous book by Tuke "On the Influence of the Mind on the Body," also Saleeby's "Worry," Walton's "Why Worry?" and many others. Everyone believes abstractly that worry is a bad thing. The worrier himself hates it as the drunkard hates his drink, and he often makes it worse by worrying because he does worry. He sometimes successfully conceals his anxiety, and thus escapes our notice as a worrier. Many who are old enough can easily remember the intensely funny songs (one of which was the "Wooden Leg") and the other side-splitting comicalities of that prince of entertainers, H. C. Barnabee. And yet between times he was often one of the most miserable of men, way down in the depths of despondency. So, in figuring out the relationship of worry to arteriosclerosis, especially statistically, such cases (and they are numerous) should be taken into consideration. Of course, everybody admits that worry and the other depressing emotions often give rise to functional disease. The only question is, whether or not this can ultimately develop into an organic disease. While this proposition should not be accepted too lightly, because functional disturbances of different kinds are frequently seen extending over very long periods of time without being followed by this change, yet I think our experience entitles us to admit that it does occur if prolonged sufficiently.

and with enough intensity. This is no more strange than that different ways of thinking and different emotions, if continued long enough, may so impress themselves on the features of a person that his character, vicious or noble, impure or pure, irritable or beneficent, may permanently be engraved there, and may be read in them as in a book. So on the present subject, we must agree with Forchheimer, when he says, "excessive functional use of the blood vessels always produces loss of elasticity."

If we find anybody worrying unduly, what shall we do about it? Simply tell him not to do so? This will do just about as much good as Mrs. Partington's arresting the ocean tide with a mop. The proper management of such cases is sometimes more difficult even than the task of installing worry as a cause, and needs separate and special consideration. Worry is exceedingly foolish from many standpoints, and is often indulged in without an adequate basis. The *Boston Globe* wisely prints very often at the head of its editorial columns the following sentence: "I am an old man, and have had many troubles, but most of them never happened." Physicians are said to worry more about their prospects of having arteriosclerosis than other people: a bad habit; it should be given up.

A TENTATIVE DIAGNOSIS OF ANEURYSM OF THE HEPATIC ARTERY, AND FINDINGS AT OPERATION.

By G. A. FRIEDMAN, M.D.,

NEW YORK.

ATTENDING PHYSICIAN IN DIGESTIVE DISEASES VANDERBILT CLINIC; CHIEF IN INTERNAL MEDICINE MOUNT SINAI DISPENSARY.

Aneurysm of the hepatic artery has been looked upon as a pathological finding, giving no clear symptoms and discoverable at autopsy only. Kehr's case of a patient in whom gallstones were believed to have caused the various symptoms present and in whom aneurysm of the hepatic artery was found at operation brought the condition into the realm of diagnostic possibilities and therapeutic interference; in his case Kehr ligated the hepatic artery.

The case I have observed presents several features of interest and shows that we must keep in mind pathological changes in the hepatic artery as the possible cause of symptoms and signs referred by the patient to the upper right hypochondrium.

My patient was a married woman, 35 years old, native of Hungary, who was referred to me at the Mount Sinai Dispensary by Dr. Paul J. Bauerberg of Yonkers, N. Y., on February 2, 1912. She had four living children; had had no miscarriages. Her menstrual periods were somewhat irregular, especially in the last six months; menses lasted but one day, and the dark color of the menstrual blood alarmed her not a little. No history or signs of syphilis were present. Patient denied any excessive use of alcoholic beverages, but later remembered that from her fifth to her fourteenth year she was frequently playing about or helping her father, who was a wine maker. During the whole of each month of October in these years she was encouraged in drinking much wine of his making, this wine being given her by her father as a stimulus in work. In other months of the year she drank wine only occasionally. She used coffee moderately, tea in excess, but of weak "brew." In her childhood she had measles and since has had two attacks of pneumonia. After one childbirth she had much uterine hemorrhage and for this was curetted.

Her present illness she dates back to two years ago, when she had a great deal of worry and grief over the loss of an eye sustained by one of her children. She became very nervous, was always ailing with many indefinite symptoms. Six months before she came to the dispensary she began to have violent attacks of pain in the abdomen, accompanied by chilly sensations. The pain was gnawing in character, lasted for a few minutes, but came on several times daily every few days. Pain began in the right upper abdomen and radiated to the back (right side), right shoulder, and right arm, the pain in the arm never going below the elbow. There was no relation between attacks of pain and the meals. The pain was worse when she was lying down and was relieved by the erect position. She could bring on the pain by talking loudly or by taking several deep breaths. Lately, she had more than usual pain on the day of her menstruation. During the last three months attacks of pain occurred almost daily. Her husband said that she always carried her right hand pressed to the upper right part of the abdomen, as if suffering from constant pain in this situation.

With the increase in frequency of the attacks she began to suffer from a throbbing sensation in the right side of the abdomen. This throbbing and the pain disturbed her sleep, and as a consequence she began to suffer from headaches. She vomited but once in the whole course of her illness; she never noticed fresh blood in her stools; never had tarry movements; had some loss of appetite, but no other dyspeptic symptoms. She was always somewhat irregular in her bowel movements, and lately has been constipated. She was never jaundiced. She claims to have lost 33 pounds in weight.

She was treated by "electricity," apparently by the galvanic current, for nervousness and "neuralgia." One week before she saw me she went to a hospital in town during an attack of pain; the admitting physician diagnosed gallstones and advised immediate operation, to which, however, she did not consent.

Abstracts from repeated physical examinations: Patient fairly well nourished. Face rather flushed, especially during attacks of pain. No jaundice, no subicteric tint of conjunctivæ. On several occasions internal jugular veins on both sides of the neck showed marked pulsation. The peripheral arteries did not seem sclerotic. There was no asthenia, and no loss of weight during the period of observation.

A marked pulsation, for the most part not expansile, was visible in the right hypochondrium. A systolic sound was heard with the pulsation and was transmitted upward to the right chest as far as the third intercostal space. A systolic shock was felt under the costal margin somewhat to the left of the gall-bladder region. While the fingers were pressed over this region a double shock could sometimes be felt in the region of the tenth, eleventh, and twelfth ribs in the scapular line. The liver border was definitely felt two fingers' breadth below the costal margin; it appeared rounded. The pain was increased by palpation high in the right hypochondrium. Subjectively, the pain was not always strictly localized to the right hypochondrium. When palpating high up in the hypochondrium

*Discussed in presentation of the patient at the clinical conference, Mount Sinai Hospital, February 29, 1912.

there occurred radiations of pain to the back and almost always to the right shoulder. Many times after such a manifestation a severe paroxysm of pain was elicited. When the pain came on spontaneously such radiation was not constant. The gall-bladder, spleen, and kidneys were not felt. There were tender spots in the right axillary line, also near the spine, corresponding to the eleventh rib, and hyperesthesia of the skin over the back. There was no tenderness of the bones of the spinal column, nor of the ribs. Heart and lungs normal. Pulse from 70 to 80.

Knee jerks somewhat exaggerated, especially on the left side. The blood-pressure of the patient, which was taken many times at the dispensary and later at the hospital, ranged between 140 and 155 in the brachial arteries, and from 175 to 180 in the dorsales pedis (the patient's thighs were very large). Only on one occasion, on the day she had her menstrual period, the blood-pressure in the brachials was 120.

The eyes were examined by Dr. Mark Schoenberg, who reported nothing abnormal. Pupils reacted to light and accommodation. Refraction media, normal. Optic disc and retina, arteries and veins normal.

Urine was negative on several examinations. No occult blood in the feces.

Wassermann (Dr. Kaliski) negative. Two x-ray pictures negative (Dr. L. Jaches).

Blood: Hemoglobin, 82 per cent.; white cells, 11,200; polymorphonuclear cells, 76 per cent.; lymphocytes, 22 per cent.; eosinophiles, 2 per cent.

Temperature twice taken at the dispensary: 99.8° and 99.2°.

At the hospital, when she was admitted on February 16, 1912 (service of Dr. Julius Rudish), and where she stayed for two weeks, her temperature reached once a maximum of 100°.

The examination of stomach contents on fasting did not show any macroscopical or microscopical stagnation; and after an Ewald test breakfast free HCl was absent once, on another occasion present; no lactic acid.

Gynecological examination negative.

A high division of the aorta into the iliac arteries was discovered at the hospital.

Epicrisis.—We had before us a woman of 35, who gave a history of measles and pneumonia and of excessive use of alcohol for a month each year in childhood. She had worried a great deal because of a serious accident to her son and 18 months after this had occurred she began to have violent paroxysmal pain in the right upper quadrant of her abdomen. The pain was sharp, shooting in character, and increased by the recumbent position. There was visible pulsation over the liver, occasionally expansile; this was accompanied by a systolic shock felt under the ribs. A throbbing sensation appeared later when the attacks of pain had become more frequent. The lower border of the liver was palpable and rounded.

What diagnosis should have been considered in this case?

Gallstones, of course, were first thought of, as the patient has had four childbirths, one followed by hemorrhage and curettage. But jaundice was completely absent, the attacks of pain were very frequent, the pain lasted a few minutes only and was never severe enough to call for morphine. Sensation of throbbing came on with increase in frequency of the painful paroxysms. The visible pulsation over the liver did not fit the diagnosis of gallstones.

Duodenal ulcer was suspected because of pain and tenderness in the right parasternal line in the region of the umbilicus. But there was no blood in the feces; the attacks of pain had no relation to meals; the pain was never relieved by assuming the recumbent position, but even increased by it.

Malignant disease of the liver did not seem probable. There were no symptoms of an original growth elsewhere, and primary disease of the organ would have led to marked enlargement. There was no cachexia; no loss of weight while under observation.

Neuralgia was thought of, and in the presence of a herpes zoster, intercostal and brachial neuralgia, there could have been a slight probability, tender spots and radiation to the arm speaking for such a diagnosis. Starr points out that marked pulsation of the vessels is met with in neuralgia. But there was some enlargement of the liver, and treatment for neuralgia (electricity) together with time should have had some effect upon the condition.

Caries was excluded by absence of tenderness over the ribs and vertebræ.

Hepatalgia or "nervous liver colic" was also considered. I have never been convinced in my own observations of the reality of this condition, yet the possibility has been mentioned by other writers, seven cases having been described by Pariser. Such colic may be easily confounded with gallstone colic, paroxysms of pain in right hypochondrium continuing from a few minutes to four hours. In women such attacks of pain are dependent upon menstruation. The liver may be tender at the time. No icterus and no inflammatory condition of any nature is discoverable. Such attacks are usually met with in neurasthenic or hysterical subjects and are very obstinate to treatment.

In our case the liver was tender and its border definitely palpable. Though the pain was here intense during menstrual periods, the constant pulsation and the throbbing sensation spoke for a more real condition than "neuralgia of the liver." Moreover, our patient was not a neurotic or an hysterical woman, exhibiting only such nervous symptoms as any sufferer from a chronic painful affection may have.

Visceral arteriosclerosis was next considered. The pain in this condition, known as arteriosclerotic colic, is excruciating in character, especially if the aorta or the superior mesenteric artery is involved, such structures as the lower part of the duodenum, the small, and a portion of the large intestine being affected. The mesenteric artery being an "end artery," these structures suffer very much from diminished supply of blood. In our patient, the pain has been intense, but not of the atrocious character described by Ortner. Moreover, disturbances of digestion were quite absent, and sclerosis of inferior mesenteric or gastric arteries could thus be excluded.

The pulsation in our patient was never a "venous pulse"; moreover, the heart was normal, no tricuspid regurgitation being present. Portal cirrhosis is said to be sometimes responsible for a venous pulsation, but our patient had no signs of cirrhosis, no swelling of the limbs, no enlarged spleen, and no ascites. The pulse in the jugular veins which was occasionally seen was of physiological nature. Moreover, a systolic blow accompanied the liver pulsation. The high division of the

aorta could not have been responsible for the pulsation; it is a congenital condition and should have made itself felt before the age of 35, if at all. Moreover, such pulsation would hardly be as palpable to the right of the midline and audible as high up as the third right intercostal space. Of course, if gallstone colic was not excluded, we could think of a possible pulsation of a gall-bladder from the transmitted pulsation of the aorta. But we felt a systolic shock in the region of the portal fissure and to the left of the gall-bladder, and did not see the necessity of supposing that two conditions were present to cause the symptoms. Moreover, the rounded liver border spoke for some pathological change in the liver itself.

Aneurysm of the aorta was excluded by negative *x*-ray plates and by the high-blood pressure in the dorsalis pedis as compared with the radial pressure. Moreover, the palpable liver and its changed border were to be explained.

An arterial liver pulse is met with in many conditions; for example, in aortic regurgitation and in certain inflammatory conditions leading to hyperemia of the liver. Sahli saw such a pulse in a patient with cholangitis. Ramskill saw liver pulsation in a case of encephaloid carcinoma, which simulated aneurysm. Mere pulsation of the liver could not be used as a sign of aneurysm, but in our patient we had many other factors to think of, viz.: (1) Paroxysms of pain of neuralgic type; (2) an inconstant sensation of throbbing, appearing after the attacks of pain have been experienced for some time; (3) arterial liver pulse; (4) a comparative high blood-pressure at an age when such pressure, especially in the female, should not be expected; (5) alcoholism in childhood; (6) long continued worry and grief over an accident to the patient's son.

We, therefore, made a tentative diagnosis of aneurysm of hepatic artery and referred the patient with this diagnosis to the Mount Sinai Hospital.

Our reasoning was as follows: Other conditions explaining the symptoms could be excluded. A definite history of abuse of alcohol in childhood was obtainable and we could assume a sclerosis of the hepatic artery in consequence of it. Unusual wear and tear of life was present in our patient, because of the acute and long continued worry and grief over her child's misfortune. Arteriosclerosis, as we know, is frequently an expression of the damage done by long continued psychic strain. The first attacks of pain could be explained by pressure of the dilated artery upon the hepatic nerve plexus, situated in the portal fissure. This plexus is a branch of the celiac and the latter is connected with the brachial through the phrenic nerve and its branches.

This could explain the radiation of pain to the right shoulder and right arm. Jaundice was absent, because the bile ducts were not pressed upon, and the absence of pressure upon the hepatic vein explained the absence of ascites. The sensation of throbbing and the visible pulsation over the liver were, of course, directly due to the dilated artery.

The patient left the hospital after a stay of two weeks, having refused an operation. During the next month her symptoms became more severe and she finally re-entered for an exploratory laparotomy which was performed by Dr. Arpad Gerster on April 9, 1912. The following is his report of the operative findings:

"As soon as the margin of the lesser omentum was exposed, the hepatic artery became visible as a pulsating cylindrical body, having the diameter of a large goosequill. It formed a loop with its convexity downward. Its proximal continuation could be distinctly followed by palpation of the celiac axis, this portion forming a large loop with its convexity pointing upward, so that the whole vessel, as far as visible and palpable, represented a large Roman "S," its entire estimated length being six inches. A marked whirl could be felt on the gentlest contact with the vessel. The gall-bladder was normal, moderately distended with bile, easily expressed into the common duct. The common duct was not distended and contained no stones, no palpable tumor, no cicatricial ulcer; absence of stone in the gall-bladder.

"All the exposed structures, especially the duodenum, showed marked cyanosis, charged to the bad anesthesia. The margin of the liver was markedly rounded and thickened, free from cicatrices. The stomach was much dilated by gases which were withdrawn with a tube. The index finger could be easily invaginated into the pylorus.

"The division of the aorta into the iliacs, instead of corresponding to fourth, corresponded to the second lumbar vertebra. The calibre of the aorta and iliacs and the coronaries of the stomach was normal.

"*Diagnosis.*—Dilatation and elongation of the hepatic artery. No aneurysm."

I must, however, insist that in my opinion the findings at the operation justified the diagnosis "aneurysm" rather than merely elongation and dilatation of the artery, as Dr. Gerster has put it.

Post factum, no one can doubt that the paroxysms of neuralgic pain in our patient, the throbbing sensation, and the visible pulsation over the liver were due to the condition of the hepatic artery. Now this condition was discovered to be an elongation and dilatation, and only in a vulgar sense could such condition be differentiated from aneurysm, which usually brings to mind a larger or smaller round or oval swelling in the course of an artery. However, in the beginning, every aneurysm must consist simply of dilatation and perhaps of elongation of an artery and only later assume the more localized form of a rounded swelling, as the weakened wall of the vessel gives way more and more.

Kaufmann, speaking of aneurysms, states the following: "The consequence of arteriosclerosis can be a dilatation (aneurysm) of the arteries, especially of such without firm neighboring tissue. The arcus aortæ will be most frequently dilated, small arteries (lienalis, coronariæ cordis, temporalis) usually becoming dilated and lengthened."

In another place Kaufmann says: "Dilatation of an artery, also called arteriectasia, may be diffuse or circumscribed. Some authors call only the latter aneurysm, but this is an error: there are transitions between the two forms."

Perhaps the best analogy is found in our conception of a tumor which usually implies a swelling. Yet, many a cancer begins at a flat plaque and perhaps diminishes the volume of the part at the outset, because of contraction. However, such tissue is "tumor," even though only much later it may show a real swelling or increase of volume in the tissue affected. Certainly a few strands of cancer tissue found in the beginning of a malignant disease of the breast form a malignant tumor of the breast, as much as when the breast becomes double

its normal size from overgrowth of normal tissue. The characteristic of tumor is not found in its size, but in type and rôle of tissue contained in it, and the same, of course, is true of aneurysm. A sclerosed, dilated, and elongated artery is an aneurysm—perhaps an incipient one, but nevertheless an aneurysm as much as the large sac found in later stages of an aortic disease of this nature.

I, therefore, present the above case as the first example of an aneurysm (dilatation and elongation) of hepatic artery diagnosed before operation.

REFERENCES.

1. Kehr, H.: "Der erste Fall von erfolgreicher Unterbindung der Arteria hepatica propria wegen Aneurysma," *Münch. med. Woch.*, 1903, p. 1861.
2. Starr, M. A.: "Nervous Diseases, Organic and Functional," Second Edition, p. 80.
3. Pariser: "Über nervöse Leberkolik," *Centralbl. f. innere Med.*, 1896, Vol. 17, p. 467.
4. Ortner, R.: "Tur Klinik der Angiosclerose der Darmarterien (Dyspragia intermittens angiosclerotica intestinalis nebst einem Beitrag sur Klinik des intermittirenden thinkers und des Stokes-Adamschen Symptomencomplexes," *Saml. Klinischer Vorträge* (Volkmann) *für Med.*, No. 102.
5. Sahli, H.: "Diagnostic Methods," English Potter, 1911, p. 368.
6. Ramskill, quoted by Grunert: "Ueber das Aneurysma der Ar. hepatica," *Dtsch. Gtschs. f. Chirurg.*, 1903-4, Vol. 71, 158-178.
7. Kaufman, T.: "Spezielle pathologische Anatomie," 1911. First Edition, pp. 72, 83.

123 East Ninety-fifth Street.

AMENORRHEA DUE TO THYROID INSUFFICIENCY.

By PETER K. OLITSKY, M.D.,
NEW YORK.
ASSISTANT ADJUNCT GYNECOLOGIST, HAR MORIAH HOSPITAL.

Medical literature has been burdened from the earliest times with numerous theories regarding the cause that induces menstruation. It was thought to be a process incident to woman's supposed uncleanliness; or that it was a process of eliminating effete matter; or that it was akin to venesection in ridding a plethoric person of her superfluous blood.

Later attention was centered in the relation of the ovary to menstruation. Strassmann claimed that increased pressure in the ovary brought on the flow. He injected sterile fluid into the ovary and the animal, as a result, began rutting. Pflüger held that the presence of a ripe follicle reflexly induced menstruation. Lowenthal maintained that the flux depended on non-fertilization of the ovum, comparable to a primitive abortion. A great many observers, on the other hand, have shown that ovulation is independent of menstruation. More recently the internal secretion of the ovary has been held to be responsible for the induction of the menses. Görl (*Münchener medizinische Wochenschrift*, LVIII, No. 30) concludes that the internal secretion of the ovary first appears at puberty and that it leads to the development of the secondary sexual characteristics; at the time of the maturation of an ovum this secretion is changed chemically, which in turn induces menstruation.

What stimulates that ovary to act? To say that the thyroid does would be conforming to the consensus of modern opinions. That the thyroid secretion acts as a hormone was first demonstrated by Sajous (*New York Medical Journal*, XCIV, No. 30). He showed that all phosphorus-laden cells are sensitized by the thyroid. Porter (*Surgery, Gynecology, and Obstetrics*, XIII, No. 6) calls the thyroid a "sex organ"; all of us have noted the enlargement of the thyroid during menstruation. Leopold Levi and de Rothschild ("Endocrinologie," 1911) and Collard-Huard in her Paris Thèse (1910-1911) have clearly demonstrated the interdependence of the thyroid, the ovary, and menstruation.

Hence, it stands to reason that a temporary or permanent insufficiency of the thyroid secretion would produce a diminution of hormone to the ovary; the ovary is then not stimulated, and amenorrhea results.

This is illustrated in the following typical case: Patient, Y. W., 24, appeared in the dispensary of the Har Moriah Hospital in November, 1911. Her family history is negative. She began to menstruate when 13, and menstruation has always been regular, of six days' duration, with a profuse loss of blood. She has been married five years. One year after marriage a child was born. One year later she aborted a three-months fetus. She has not been living with her husband for the past year.

When the patient first presented herself to our notice she complained of frequent and "burning" urination. On examination urethral caruncles were found. These were excised, only to return in several weeks. In January she "missed" her period. Also in February and in March, 1912. Pelvic examination disclosed a normal uterus and adnexa. A complement fixation test was negative. Examination of the urine was negative. Urethral and cervical smears showed no gonococci. A blood count disclosed a slight anemia. Her blood pressure (systolic) was 108 mm. Hg.

At this time (March) she appeared as if she had added twenty-five pounds to her weight. She was large and clumsy; eyelids were puffy; eyes heavy; skin dry, and her mentality dulled somewhat. Her thyroid was not palpable; the other organs were normal. Thyroid extract was ordered. By mistake she took 30 grains per diem instead of 15 grains for three days without any untoward result. At the end of a week there was a slight menstrual show for a day; in another week corresponding to her menstrual period she had a scanty flow. The thyroid dose was diminished to 5 grains per diem and she has had several normal menses since. At the same time she has lost about ten pounds in weight and has felt much better as regards her headaches and backaches.

It is apparent that patients suffering from amenorrhea, which is evidently not due to organic disturbances, should be given the benefit of thyroid therapy.

My thanks are due to Drs. Vineberg and Bodenheimer for permission to report this case.

131 Cathedral Parkway.

ARE THE PRESENT METHODS OF DISPOSAL OF HUMAN EXCREMENT SATISFACTORY?

By ISAAC W. BREWER, M.D.,
ITHACA, N. Y.

Probably the majority of the people of this country would answer "yes" to this question. They might add that some improvement could be made in the methods in vogue in rural communities, but with few exceptions they would be satisfied with the methods used in the cities. However, a more careful study of the subject does not leave one in such a contented frame of mind. It is not intended in

this paper to go into the mechanical operation or the cost of any systems but rather to look at the question from a somewhat broader standpoint than we usually do, considering it from the ideal sanitary and economical points, trusting that this statement may stimulate others to work out a better system than we now have.

To be satisfactory the method adopted must fulfil the following requirements: (1) It must remove the excreta from the homes of human beings promptly. (2) It must not create a nuisance or a breeding place for flies or mosquitoes. (3) It must be economical. (4) It must conserve all of the fertilizer in the excreta and return it to the soil for the nourishment of plant life. (5) It must not pollute the water or food supplies of human beings or animals.

The methods now employed may be classified as follows: (1) Water carriage, with or without purification. (2) Privies. (3) Cesspools. (4) Pails. (5) Dry earth closets.

1. The water carriage system has been in use for about 100 years, and has been improved each year until it now appears most satisfactory. It is objectionable because of the pollution of rivers, lakes, and other water courses that it causes. If combined with purification, it is costly and generally all of the fertilizer is lost. If used for irrigation however some of the fertilizer can be saved. Irrigation plants rarely pay except where water is scarce. The mixing of excrement with water is costly, and the sewers entail an immense outlay of capital. Each time a closet is flushed about 5 gallons of water is used. Each person will use the toilet at least three times daily which means 15 gallons of water per person per day. This quantity costs a large amount of money in a city of the size of New York.

2. Privies are far too common in this country. They fulfil none of the requirements which we have stated and are open to every objection that could be raised against any system. They are the breeding place for millions of flies which scatter the germs from feces far and wide. They are also the homes of countless mosquitoes.

3. Cesspools are open to most of the objections urged against privies and should not be tolerated in any community.

4. Pails are rarely used in the United States, but are common in tropical countries and have been installed in some places in the Philippines. They can be operated so as to create no nuisance and to fulfil some of the requirements we have stated. In practice they are objectionable in the home, and the scavenger generally slops them over the ground whenever he removes them. Their contents are available for fertilizer, but in this country there is a general objection to the use of raw feces for fertilizer.

5. Dry earth closets, as operated at present, are very undesirable, being malodorous and liable to pollute the place where installed as well as the point where they are emptied. Their success depends upon the cooperation of every member of the household, which is difficult to obtain. Owing to the carelessness of the scavenger the dumping place becomes polluted and the breeding place of flies. They are better, however, than pails, privies, or cesspools. They are the best means we have of conserving the fertilizer, and if properly managed the pathogenic germs in the feces soon are killed off.

The method of disposal used on trains is a disgrace to the country. The closets in the ordinary coaches are generally unclean and the hoppers through which the feces are discharged are always filthy. They distribute the feces along the tracks and are undoubtedly a means of dissemination of typhoid fever, dysentery, and similar diseases. I know one reservoir through which a trunkline runs. One could imagine what would happen if a patient suffering from cholera were to use the toilet while crossing it.

The same is true of boats. The toilet facilities are generally better and cleaner, but they, too, distribute the germs of disease over a large area.

Mr. James J. Hill has said that within fifty years our country will not be able to support its population. In his argument he shows that the average yield of wheat per acre is about fourteen bushels. He further states that with improved methods of agriculture the yield could be increased to twenty-eight bushels per acre and that we would still be able to export food products.

In China and Japan, where the population is very dense, none of the excrement of animals or human beings is wasted. While no one would advocate the Chinese or Japanese methods in handling feces and urine, we would advocate an improvement on these methods that would rid them of their objectionable features and at the same time save the fertilizer. It is within the probability that such a system can be devised that will fully meet the requirements of sanitation and at the same time the economic requirements.

122 Eddy Street.

Arrhythmia in Healthy Children.—R. Friberger notes that arrhythmia is present in all children between the ages of five and fourteen years, and at this period of life is to be regarded as physiological. Neither the varying degree of bodily development, nor a slight amount of cardiac weakness, nor a lability of the nervous system appears to bear any appreciable relationship to this arrhythmia.—*Archiv für die Kinderheilkunde.*

Pathological Changes in Muscles.—R. C. Jewesbury and W. W. C. Topley have found that in wasting diseases the voluntary muscles show varying degrees of histological change bearing little relation to the actual degree of wasting present. These changes consist of alterations in the size, shape, and staining reactions of the fibers, increase in the fiber nuclei, and alteration in their arrangement, sometimes resulting in the production of false giant cells; and lastly of a relative increase of the interstitial tissue. In acute general diseases muscle changes are extremely slight, consisting of some degree of hyaline and granular change, and in a certain small number of cases of fatty degeneration. Fatty changes: In certain disorders associated with an abnormal carbohydrate metabolism there is a great increase in the amount of interstitial fat present. In many cases small collections of fat droplets are present in the neighborhood of the fiber nuclei; these are common in advanced life, rare in children, and almost entirely absent in animals. They bear no relation to true fatty degeneration, and it is doubtful if they have any pathological significance. True fatty degeneration appears to be much less common than is usually stated, but occurs to a marked degree in cases of diphtheritic toxemia, in certain blood disorders, and in poisoning by phosphorus. Glycogen: Of the many muscles stained for glycogen it was only strikingly present in each of three cases of diabetes examined. Amyloid change was not found in any case examined.—*Proceedings of the Royal Society of Medicine.*

there occurred radiations of pain to the back and almost always to the right shoulder. Many times after such a manifestation a severe paroxysm of pain was elicited. When the pain came on spontaneously such radiation was not constant. The gall-bladder, spleen, and kidneys were not felt. There were tender spots in the right axillary line, also near the spine, corresponding to the eleventh rib, and hyperesthesia of the skin over the back. There was no tenderness of the bones of the spinal column, nor of the ribs. Heart and lungs normal. Pulse from 70 to 80.

Knee jerks somewhat exaggerated, especially on the left side. The blood-pressure of the patient, which was taken many times at the dispensary and later at the hospital, ranged between 140 and 155 in the brachial arteries, and from 175 to 180 in the dorsales pedis (the patient's thighs were very large). Only on one occasion, on the day she had her menstrual period, the blood-pressure in the brachials was 120.

The eyes were examined by Dr. Mark Schoenberg, who reported nothing abnormal. Pupils reacted to light and accommodation. Refraction media, normal. Optic disc and retina, arteries and veins normal.

Urine was negative on several examinations. No occult blood in the feces.

Wassermann (Dr. Kaliski) negative. Two *x*-ray pictures negative (Dr. L. Jaches).

Blood: Hemoglobin, 82 per cent.; white cells, 11,200: polymorphonuclear cells, 76 per cent.; lymphocytes, 22 per cent.; eosinophiles, 2 per cent.

Temperature twice taken at the dispensary: 99.8° and 99.2°.

At the hospital, when she was admitted on February 16, 1912 (service of Dr. Julius Rudish), and where she stayed for two weeks, her temperature reached once a maximum of 100°.

The examination of stomach contents on fasting did not show any macroscopical or microscopical stagnation; and after an Ewald test breakfast free HCl was absent once, on another occasion present; no lactic acid.

Gynecological examination negative.

A high division of the aorta into the iliac arteries was discovered at the hospital.

Epicrisis.—We had before us a woman of 35, who gave a history of measles and pneumonia and of excessive use of alcohol for a month each year in childhood. She had worried a great deal because of a serious accident to her son and 18 months after this had occurred she began to have violent paroxysmal pain in the right upper quadrant of her abdomen. The pain was sharp, shooting in character, and increased by the recumbent position. There was visible pulsation over the liver, occasionally expansile; this was accompanied by a systolic shock felt under the ribs. A throbbing sensation appeared later when the attacks of pain had become more frequent. The lower border of the liver was palpable and rounded.

What diagnosis should have been considered in this case?

Gallstones, of course, were first thought of, as the patient has had four childbirths, one followed by hemorrhage and curettage. But jaundice was completely absent, the attacks of pain were very frequent, the pain lasted a few minutes only and was never severe enough to call for morphine. Sensation of throbbing came on with increase in frequency of the painful paroxysms. The visible pulsation over the liver did not fit the diagnosis of gallstones.

Duodenal ulcer was suspected because of pain and tenderness in the right parasternal line in the region of the umbilicus. But there was no blood in the feces; the attacks of pain had no relation to meals; the pain was never relieved by assuming the recumbent position, but even increased by it.

Malignant disease of the liver did not seem probable. There were no symptoms of an original growth elsewhere, and primary disease of the organ would have led to marked enlargement. There was no cachexia; no loss of weight while under observation.

Neuralgia was thought of, and in the presence of a herpes zoster, intercostal and brachial neuralgia, there could have been a slight probability, tender spots and radiation to the arm speaking for such a diagnosis. Starr points out that marked pulsation of the vessels is met with in neuralgia. But there was some enlargement of the liver, and treatment for neuralgia (electricity) together with time should have had some effect upon the condition.

Caries was excluded by absence of tenderness over the ribs and vertebræ.

Hepatalgia or "nervous liver colic" was also considered. I have never been convinced in my own observations of the reality of this condition, yet the possibility has been mentioned by other writers, seven cases having been described by Pariser. Such colic may be easily confounded with gallstone colic, paroxysms of pain in right hypochondrium continuing from a few minutes to four hours. In women such attacks of pain are dependent upon menstruation. The liver may be tender at the time. No icterus and no inflammatory condition of any nature is discoverable. Such attacks are usually met with in neurasthenic or hysterical subjects and are very obstinate to treatment.

In our case the liver was tender and its border definitely palpable. Though the pain was here intense during menstrual periods, the constant pulsation and the throbbing sensation spoke for a more real condition than "neuralgia of the liver." Moreover, our patient was not a neurotic or an hysterical woman, exhibiting only such nervous symptoms as any sufferer from a chronic painful affection may have.

Visceral arteriosclerosis was next considered. The pain in this condition, known as arteriosclerotic colic, is excruciating in character, especially if the aorta or the superior mesenteric artery is involved, such structures as the lower part of the duodenum, the small, and a portion of the large intestine being affected. The mesenteric artery being an "end artery," these structures suffer very much from diminished supply of blood. In our patient, the pain has been intense, but not of the atrocious character described by Ortner. Moreover, disturbances of digestion were quite absent, and sclerosis of inferior mesenteric or gastric arteries could thus be excluded.

The pulsation in our patient was never a "venous pulse"; moreover, the heart was normal, no tricuspid regurgitation being present. Portal cirrhosis is said to be sometimes responsible for a venous pulsation, but our patient had no signs of cirrhosis, no swelling of the limbs, no enlarged spleen, and no ascites. The pulse in the jugular veins which was occasionally seen was of physiological nature. Moreover, a systolic blow accompanied the liver pulsation. The high division of the

aorta could not have been responsible for the pulsation; it is a congenital condition and should have made itself felt before the age of 35, if at all. Moreover, such pulsation would hardly be as palpable to the right of the midline and audible as high up as the third right intercostal space. Of course, if gallstone colic was not excluded, we could think of a possible pulsation of a gall-bladder from the transmitted pulsation of the aorta. But we felt a systolic shock in the region of the portal fissure and to the left of the gall-bladder, and did not see the necessity of supposing that two conditions were present to cause the symptoms. Moreover, the rounded liver border spoke for some pathological change in the liver itself.

Aneurysm of the aorta was excluded by negative x-ray plates and by the high-blood pressure in the dorsalis pedis as compared with the radial pressure. Moreover, the palpable liver and its changed border were to be explained.

An arterial liver pulse is met with in many conditions; for example, in aortic regurgitation and in certain inflammatory conditions leading to hyperemia of the liver. Sahli saw such a pulse in a patient with cholangitis. Ramskill saw liver pulsation in a case of encephaloid carcinoma, which simulated aneurysm. Mere pulsation of the liver could not be used as a sign of aneurysm, but in our patient we had many other factors to think of, viz.: (1) Paroxysms of pain of neuralgic type; (2) an inconstant sensation of throbbing, appearing after the attacks of pain have been experienced for some time; (3) arterial liver pulse; (4) a comparative high blood-pressure at an age when such pressure, especially in the female, should not be expected; (5) alcoholism in childhood; (6) long continued worry and grief over an accident to the patient's son.

We, therefore, made a tentative diagnosis of aneurysm of hepatic artery and referred the patient with this diagnosis to the Mount Sinai Hospital.

Our reasoning was as follows: Other conditions explaining the symptoms could be excluded. A definite history of abuse of alcohol in childhood was obtainable and we could assume a sclerosis of the hepatic artery in consequence of it. Unusual wear and tear of life was present in our patient, because of the acute and long continued worry and grief over her child's misfortune. Arteriosclerosis, as we know, is frequently an expression of the damage done by long continued psychic strain. The first attacks of pain could be explained by pressure of the dilated artery upon the hepatic nerve plexus, situated in the portal fissure. This plexus is a branch of the celiac and the latter is connected with the brachial through the phrenic nerve and its branches.

This could explain the radiation of pain to the right shoulder and right arm. Jaundice was absent, because the bile ducts were not pressed upon, and the absence of pressure upon the hepatic vein explained the absence of ascites. The sensation of throbbing and the visible pulsation over the liver were, of course, directly due to the dilated artery.

The patient left the hospital after a stay of two weeks, having refused an operation. During the next month her symptoms became more severe and she finally re-entered for an exploratory laparotomy which was performed by Dr. Arpad Gerster on April 9, 1912. The following is his report of the operative findings:

"As soon as the margin of the lesser omentum was exposed, the hepatic artery became visible as a pulsating cylindrical body, having the diameter of a large goosequill. It formed a loop with its convexity downward. Its proximal continuation could be distinctly followed by palpation of the celiac axis, this portion forming a large loop with its convexity pointing upward, so that the whole vessel, as far as visible and palpable, represented a large Roman "S," its entire estimated length being six inches. A marked whirl could be felt on the gentlest contact with the vessel. The gall-bladder was normal, moderately distended with bile, easily expressed into the common duct. The common duct was not distended and contained no stones, no palpable tumor, no cicatricial ulcer; absence of stone in the gall-bladder.

"All the exposed structures, especially the duodenum, showed marked cyanosis, charged to the bad anesthesia. The margin of the liver was markedly rounded and thickened, free from cicatrices. The stomach was much dilated by gases which were withdrawn with a tube. The index finger could be easily invaginated into the pylorus.

"The division of the aorta into the iliacs, instead of corresponding to fourth, corresponded to the second lumbar vertebra. The calibre of the aorta and iliacs and the coronaries of the stomach was normal.

"*Diagnosis.*—Dilatation and elongation of the hepatic artery. No aneurysm."

I must, however, insist that in my opinion the findings at the operation justified the diagnosis "aneurysm" rather than merely elongation and dilatation of the artery, as Dr. Gerster has put it.

Post factum, no one can doubt that the paroxysms of neuralgic pain in our patient, the throbbing sensation, and the visible pulsation over the liver were due to the condition of the hepatic artery. Now this condition was discovered to be an elongation and dilatation, and only in a vulgar sense could such condition be differentiated from aneurysm, which usually brings to mind a larger or smaller round or oval swelling in the course of an artery. However, in the beginning, every aneurysm must consist simply of dilatation and perhaps of elongation of an artery and only later assume the more localized form of a rounded swelling, as the weakened wall of the vessel gives way more and more.

Kaufmann, speaking of aneurysms, states the following: "The consequence of arteriosclerosis can be a dilatation (aneurysm) of the arteries, especially of such without firm neighboring tissue. The arcus aortæ will be most frequently dilated, small arteries (lienalis, coronariæ cordis, temporalis) usually becoming dilated and lengthened."

In another place Kaufmann says: "Dilatation of an artery, also called arteriectasia, may be diffuse or circumscribed. Some authors call only the latter aneurysm, but this is an error: there are transitions between the two forms."

Perhaps the best analogy is found in our conception of a tumor which usually implies a swelling. Yet, many a cancer begins at a flat plaque and perhaps diminishes the volume of the part at the outset, because of contraction. However, such tissue is "tumor," even though only much later it may show a real swelling or increase of volume in the tissue affected. Certainly a few strands of cancer tissue found in the beginning of a malignant disease of the breast form a malignant tumor of the breast, as much as when the breast becomes double

its normal size from overgrowth of normal tissue. The characteristic of tumor is not found in its size, but in type and rôle of tissue contained in it, and the same, of course, is true of aneurysm. A sclerosed, dilated, and elongated artery is an aneurysm—perhaps an incipient one, but nevertheless an aneurysm as much as the large sac found in later stages of an aortic disease of this nature.

I, therefore, present the above case as the first example of an aneurysm (dilatation and elongation) of hepatic artery diagnosed before operation.

REFERENCES.

1. Kehr, H.: "Der erste Fall von erfolgreicher Unterbindung der Arteria hepatica propria wegen Aneurysma," *Münch. med. Woch.*, 1903, p. 1861.

2. Starr, M. A.: "Nervous Diseases, Organic and Functional," Second Edition, p. 80.

3. Pariser: "Über nervöse Leberkolik," *Centralbl. f. innere Med.*, 1896, Vol. 17, p. 467.

4. Ortner, R.: "Tur Klinik der Angiosclerose der Darmarterien (Dyspragia intermittens angiosclerotica intestinalis nebst einem Beitrag sur Klinik des intermittirenden thinkers und des Stokes-Adamschen Symptomencomplexes," *Saml. Klinischer Vorträge* (Volkmann) *für Med.*, No. 102.

5. Sahli, H.: "Diagnostic Methods," English Potter, 1911, p. 368.

6. Ramskill, quoted by Grunert: "Ueber das Aneurysma der Ar. hepatica," *Dtsch. Gtschs. f. Chirurg.*, 1903-4, Vol. 71, 158-178.

7. Kaufman, T.: "Spezielle pathologische Anatomie," 1911. First Edition, pp. 72, 83.

123 East Ninety-fifth Street.

AMENORRHEA DUE TO THYROID INSUFFICIENCY.

By PETER K. OLITSKY, M.D.,

NEW YORK.

ASSISTANT ADJUNCT GYNECOLOGIST, HAR MORIAH HOSPITAL.

Medical literature has been burdened from the earliest times with numerous theories regarding the cause that induces menstruation. It was thought to be a process incident to woman's supposed uncleanliness; or that it was a process of eliminating effete matter; or that it was akin to venesection in ridding a plethoric person of her superfluous blood.

Later attention was centered in the relation of the ovary to menstruation. Strassmann claimed that increased pressure in the ovary brought on the flow. He injected sterile fluid into the ovary and the animal, as a result, began rutting. Pflüger held that the presence of a ripe follicle reflexly induced menstruation. Lowenthal maintained that the flux depended on non-fertilization of the ovum, comparable to a primitive abortion. A great many observers, on the other hand, have shown that ovulation is independent of menstruation. More recently the internal secretion of the ovary has been held to be responsible for the induction of the menses. Görl (*Münchener medizinische Wochenschrift*, LVIII, No. 30) concludes that the internal secretion of the ovary first appears at puberty and that it leads to the development of the secondary sexual characteristics; at the time of the maturation of an ovum this secretion is changed chemically, which in turn induces menstruation.

What stimulates that ovary to act? To say that the thyroid does would be conforming to the consensus of modern opinions. That the thyroid secretion acts as a hormone was first demonstrated by Sajous (*New York Medical Journal*, XCIV, No. 30). He showed that all phosphorus-laden cells are sensitized by the thyroid. Porter (*Surgery, Gynecology, and Obstetrics*, XIII, No. 6) calls the thyroid a "sex organ"; all of us have noted the enlargement of the thyroid during menstruation. Leopold Levi and de Rothschild ("Endocrinologie," 1911) and Collard-Huard in her Paris Thèse (1910-1911) have clearly demonstrated the interdependence of the thyroid, the ovary, and menstruation.

Hence, it stands to reason that a temporary or permanent insufficiency of the thyroid secretion would produce a diminution of hormone to the ovary; the ovary is then not stimulated, and amenorrhea results.

This is illustrated in the following typical case: Patient, Y. W., 24, appeared in the dispensary of the Har Moriah Hospital in November, 1911. Her family history is negative. She began to menstruate when 13, and menstruation has always been regular, of six days' duration, with a profuse loss of blood. She has been married five years. One year after marriage a child was born. One year later she aborted a three-months fetus. She has not been living with her husband for the past year.

When the patient first presented herself to our notice she complained of frequent and "burning" urination. On examination urethral caruncles were found. These were excised, only to return in several weeks. In January she "missed" her period. Also in February and in March, 1912. Pelvic examination disclosed a normal uterus and adnexa. A complement fixation test was negative. Examination of the urine was negative. Urethral and cervical smears showed no gonococci. A blood count disclosed a slight anemia. Her blood pressure (systolic) was 108 mm. Hg.

At this time (March) she appeared as if she had added twenty-five pounds to her weight. She was large and clumsy; eyelids were puffy; eyes heavy; skin dry, and her mentality dulled somewhat. Her thyroid was not palpable; the other organs were normal. Thyroid extract was ordered. By mistake she took 30 grains per diem instead of 15 grains for three days without any untoward result. At the end of a week there was a slight menstrual show for a day; in another week corresponding to her menstrual period she had a scanty flow. The thyroid dose was diminished to 5 grains per diem and she has had several normal menses since. At the same time she has lost about ten pounds in weight and has felt much better as regards her headaches and backaches.

It is apparent that patients suffering from amenorrhea, which is evidently not due to organic disturbances, should be given the benefit of thyroid therapy.

My thanks are due to Drs. Vineberg and Bodenheimer for permission to report this case.

131 Cathedral Parkway.

ARE THE PRESENT METHODS OF DISPOSAL OF HUMAN EXCREMENT SATISFACTORY?

By ISAAC W. BREWER, M.D.,

ITHACA, N. Y.

Probably the majority of the people of this country would answer "yes" to this question. They might add that some improvement could be made in the methods in vogue in rural communities, but with few exceptions they would be satisfied with the methods used in the cities. However, a more careful study of the subject does not leave one in such a contented frame of mind. It is not intended in

this paper to go into the mechanical operation or the cost of any systems but rather to look at the question from a somewhat broader standpoint than we usually do, considering it from the ideal sanitary and economical points, trusting that this statement may stimulate others to work out a better system than we now have.

To be satisfactory the method adopted must fulfil the following requirements: (1) It must remove the excreta from the homes of human beings promptly. (2) It must not create a nuisance or a breeding place for flies or mosquitoes. (3) It must be economical. (4) It must conserve all of the fertilizer in the excreta and return it to the soil for the nourishment of plant life. (5) It must not pollute the water or food supplies of human beings or animals.

The methods now employed may be classified as follows: (1) Water carriage, with or without purification. (2) Privies. (3) Cesspools. (4) Pails. (5) Dry earth closets.

1. The water carriage system has been in use for about 100 years, and has been improved each year until it now appears most satisfactory. It is objectionable because of the pollution of rivers, lakes, and other water courses that it causes. If combined with purification, it is costly and generally all of the fertilizer is lost. If used for irrigation however some of the fertilizer can be saved. Irrigation plants rarely pay except where water is scarce. The mixing of excrement with water is costly, and the sewers entail an immense outlay of capital. Each time a closet is flushed about 5 gallons of water is used. Each person will use the toilet at least three times daily which means 15 gallons of water per person per day. This quantity costs a large amount of money in a city of the size of New York.

2. Privies are far too common in this country. They fulfil none of the requirements which we have stated and are open to every objection that could be raised against any system. They are the breeding place for millions of flies which scatter the germs from feces far and wide. They are also the homes of countless mosquitoes.

3. Cesspools are open to most of the objections urged against privies and should not be tolerated in any community.

4. Pails are rarely used in the United States, but are common in tropical countries and have been installed in some places in the Philippines. They can be operated so as to create no nuisance and to fulfil some of the requirements we have stated. In practice they are objectionable in the home, and the scavenger generally slops them over the ground whenever he removes them. Their contents are available for fertilizer, but in this country there is a general objection to the use of raw feces for fertilizer.

5. Dry earth closets, as operated at present, are very undesirable, being malodorous and liable to pollute the place where installed as well as the point where they are emptied. Their success depends upon the cooperation of every member of the household, which is difficult to obtain. Owing to the carelessness of the scavenger the dumping place becomes polluted and the breeding place of flies. They are better, however, than pails, privies, or cesspools. They are the best means we have of conserving the fertilizer, and if properly managed the pathogenic germs in the feces soon are killed off.

The method of disposal used on trains is a disgrace to the country. The closets in the ordinary coaches are generally unclean and the hoppers through which the feces are discharged are always filthy. They distribute the feces along the tracks and are undoubtedly a means of dissemination of typhoid fever, dysentery, and similar diseases. I know one reservoir through which a trunkline runs. One could imagine what would happen if a patient suffering from cholera were to use the toilet while crossing it.

The same is true of boats. The toilet facilities are generally better and cleaner, but they, too, distribute the germs of disease over a large area.

Mr. James J. Hill has said that within fifty years our country will not be able to support its population. In his argument he shows that the average yield of wheat per acre is about fourteen bushels. He further states that with improved methods of agriculture the yield could be increased to twenty-eight bushels per acre and that we would still be able to export food products.

In China and Japan, where the population is very dense, none of the excrement of animals or human beings is wasted. While no one would advocate the Chinese or Japanese methods in handling feces and urine, we would advocate an improvement on these methods that would rid them of their objectionable features and at the same time save the fertilizer. It is within the probability that such a system can be devised that will fully meet the requirements of sanitation and at the same time the economic requirements.

122 Eddy Street.

Arrhythmia in Healthy Children.—R. Friberger notes that arrhythmia is present in all children between the ages of five and fourteen years, and at this period of life is to be regarded as physiological. Neither the varying degree of bodily development, nor a slight amount of cardiac weakness, nor a lability of the nervous system appears to bear any appreciable relationship to this arrhythmia.—*Archiv für die Kinderheilkunde.*

Pathological Changes in Muscles.—R. C. Jewesbury and W. W. C. Topley have found that in wasting diseases the voluntary muscles show varying degrees of histological change bearing little relation to the actual degree of wasting present. These changes consist of alterations in the size, shape, and staining reactions of the fibers, increase in the fiber nuclei, and alteration in their arrangement, sometimes resulting in the production of false giant cells; and lastly of a relative increase of the interstitial tissue. In acute general diseases muscle changes are extremely slight, consisting of some degree of hyaline and granular change, and in a certain small number of cases of fatty degeneration. Fatty changes: In certain disorders associated with an abnormal carbohydrate metabolism there is a great increase in the amount of interstitial fat present. In many cases small collections of fat droplets are present in the neighborhood of the fiber nuclei; these are common in advanced life, rare in children, and almost entirely absent in animals. They bear no relation to true fatty degeneration, and it is doubtful if they have any pathological significance. True fatty degeneration appears to be much less common than is usually stated, but occurs to a marked degree in cases of diphtheritic toxemia, in certain blood disorders, and in poisoning by phosphorus. Glycogen: Of the many muscles stained for glycogen it was only strikingly present in each of three cases of diabetes examined. Amyloid change was not found in any case examined.—*Proceedings of the Royal Society of Medicine.*

MEDICAL RECORD.

A Weekly Journal of Medicine and Surgery.

THOMAS L. STEDMAN, A.M., M.D., EDITOR.

PUBLISHERS

WM. WOOD & CO., 51 FIFTH AVENUE.

See fourth page following reading matter for Rates of Subscription and Information for Contributors and Subscribers.

New York, September 21, 1912.

AUTOINTOXICATION IN THE ARMY.

THE *Journal of the Military Service Institution of the United States* awards annually the so-called Seaman prize for the best essay on a subject selected by the founder of the prize, Major L. L. Seaman, and approved by council. The subject for last year was as follows: "How can autointoxication, that rarely recognized disease which has directly or indirectly caused more invalidism and mortality in modern armies than all other pathogenic causes combined, be prevented?" And the prize was awarded to Captain Nathan S. Jarvis, U. S. Army, whose essay on the subject is published in the July-August number of the journal. The subject selected is one that may cause surprise in the mind of the general reader. That such picked men among young adults of the nation as soldiers must necessarily be are sufferers from autointoxication, especially when it is remembered that their diet is for the most part very simple, may indeed be doubted. And Dr. Jarvis properly states at the very outset of his paper that the premise implied in the subject "may be true as a rash guess, but it cannot be proved by the usual methods of deducing medical statistics." He then gives a historical survey of the theory of autointoxication, and summarizes as well the views of such men as Combe, Vaughan and Novy, Fischer, *et al.*

So far as the army is concerned, Jarvis thinks that careful attention to the treatment of slight as well as severe intestinal disease should be insisted upon, because such conditions invite the absorption of poisons from the digestive tract. So far as the diet is concerned, he thinks that that of the American soldier compares favorably with the diet of other armies. However, boiling or cooking all food, is advised so as to insure against chance infection and especially the use of such beverage as weak tea instead of water. Jarvis warns against the dangers of canned provisions, which are safe enough if properly prepared before canning and cooked immediately after being removed from the can, but are a source of various morbid conditions if carelessly packed or kept some time in unsealed receptacles. Of the direct methods of fighting autointoxication Jarvis mentions the usual intestinal antiseptics and the mechanical measures calculated to clear the intestines of putrefactive material or diminish the activity of certain microorganisms.

In acknowledging the careful work of the author in summarizing what is known about autointoxication, we think that the subject, selected presumably as of interest to the great body of army medical men, was a very unfortunate one. This subject has given rise to a prolixity of quasi-scientific literature in the general medical press, has been exploited by promoters of various drugs, modified foods, drugless methods of treatment, etc., until the laity and not a few medical men have been misled into thinking that autointoxication is a clear and easily diagnosed condition, instead of an obscure entity, the very existence of which has been doubted, and proofs of which so far brought forth are certainly not entirely satisfactory. Much loose thinking and purposeless treatment has resulted to the detriment of the profession and patients as well.

The subject needs the light of careful clinical observation and unbiased laboratory work, but such work in the study of autointoxication cannot be done in the army, where the material is least favorable for the development of the condition. We call attention with great pleasure to the much more promising subject for the next award of the prize, the full wording being as follows: How can the Medical Departments of the Army, Navy, and Public Health Service be best utilized for research work in connection with a department of public health? This subject is of more than mere local importance for the army and navy, and the paper awarded the prize will be awaited with interest by the general medical public.

THE TREATMENT OF TETANUS WITH CARBOLIC ACID.

THE enthusiasm which followed the remarkable results obtained by the use of diphtheria antitoxin led the medical profession to believe that in serotherapy was to be found all the promise of future success in the treatment of infectious disease; drugs and other non-biological methods of treatment were for a time scorned by the laboratory enthusiasts. However, it was soon shown that what was possible in diphtheria could not be duplicated in other infections, the mortality of which was not at all affected by various antitoxins however prepared. Vaccines were then brought forward, still in the enthusiastic preference of biological methods of treatment, and for a time these were hailed as the real deliverers of suffering mankind. At the present time, however, the general consensus of opinion is that vaccines hold a subordinate, though quite an actual, place in the therapy of infections. They may be fraught with great possibilities, but our methods of using them have so far given but very modest results.

The enthusiasm over serotherapy was best shown by the great hopes which greeted the production of tetanus antitoxin. For a time it seemed as if this dread disease was to be made quite innocuous, provided antitoxin was used. But soon enough it was shown that, however great its prophylactic value, the tetanus antitoxin possessed no curative value whatever. Now and then a patient treated with it recovered, but usually the case was one of mild

nature with a long period of incubation. The best test of antitoxin was made by the Russians during the late war with Japan, and both the published and private opinions of Russian military surgeons have completely denied it any therapeutic virtue.

Meanwhile, the Italians have been using a very simple method of treatment suggested years ago by Baccelli, and have finally succeeded in attracting the attention elsewhere by the remarkable results obtained. Baccelli's treatment consists in subcutaneous injections of carbolic acid in 3 per cent. dilution, given frequently enough to make the total quantity of pure phenol injected daily equal to from 0.3 to 0.5 c.c. (5 to 7.5 grains). Imperiali, writing in 1910, gives the results obtained in a sufficient number of cases to exclude merely chance results. Of fifteen patients with the foudroyant form of tetanus, only one patient recovered (mortality, 93.3 per cent.); of thirty-nine patients with a very severe form of the disease, twenty-two recovered and seventeen died (mortality, 43.5 per cent.); of ninety-four cases with the usual severe form of the disease, ninety-two recovered and only two died (mortality, 2.12 per cent.). Richter gives the average mortality, with the usual methods of treatment, as 88 per cent.; during the Civil War the mortality among the Federal troops was 92.56 per cent.; and Behring himself grants that the mortality of those treated with antitoxin reached 88 per cent. In a later paper Baccelli gathers one hundred and ninety cases treated by his method, and states that the mortality in these was 17.36 per cent., a figure that about equals the percentage of recoveries among the cases treated with antitoxin and other methods.

The above résumé is gleaned from a paper in the *Russkii Vratch* (Vol. XI, No. 28) by N. A. Goulyaeff, who had gone through the enthusiasm over the use of antitoxin and the subsequent disappointment. Lately, he had a chance to treat two very severe cases of tetanus by the Baccelli method, and to his great surprise both recovered. The first one had an incubation of eight or ten days, and when brought to the hospital was suffering from severe muscular spasms, frequently involving the respiratory muscles. Goulyaeff used 14.5 c.c. of pure phenol in the course of about five weeks in treating this patient, and is convinced that the drug has some actual quantitative relation to the amount of toxin present, for the diminution in the daily quantity injected was several times followed by an increase in the tetanic spasms. The second case was one of "cephalic tetanus" appearing after an incubation of six days. This variety of tetanus has frequently given 100 per cent. mortality. Goulyaeff's patient received 5.4 c.c. of phenol in two weeks and recovered completely. In neither case were any untoward effects noted from the administration of carbolic acid; the urine was carefully followed to note any such effects.

In America the saner methods of celebrating Independence Day have resulted in a marked diminution of cases of tetanus. However, such cases occur not infrequently in every large hospital and in the practice of most surgeons, and Baccelli's method of treatment should certainly be again tried. Not the least thing in its favor is its utter simplicity, which permits its use amid the most inadequate surroundings of any practice.

STATE MEDICAL SERVICE IN GREAT BRITAIN.

In various discussions of the new British insurance scheme it has been pointed out that it is not the principle of the bill to which the medical men of England object, but the obviously unfair manner in which Mr. Lloyd George has proposed to deal with the profession. The pay offered physicians of Great Britain under the insurance scheme was inadequate, and moreover they would be placed in the hands of the approved societies. Nearly all, however, laymen and medical men, are agreed that the objects of the bill are sound and that eventually England must adopt a scheme of this nature. Therefore when it was decided at the recent meeting of the British Medical Association to oppose the bill in its present form, the conclusion was also reached that to be consistent medical men themselves must bring forward an alternative scheme. Otherwise, the supporters of the measure would say, "you have wrecked a plan the principle of which you approve, and have not suggested anything in its place; consequently you must have taken this course impelled by merely selfish motives."

Fortunately, an alternative scheme was proposed at the meeting just over, and from a perusal of the same it appears to be, in its main features, both feasible and reasonable. Dr. Rentoul of Liverpool read a paper at the meeting referred to in which he stated his views as to the initiation of a State medical service. He is one of those who hold that the medical profession is now pledged to the formation of some such service and points out that nationalization of medicine in Great Britain is not so far off as some think. The thin edge of the wedge has been inserted already, for the State now appoints many official physicians, the number of which is increasing daily. Rentoul suggests as the chief points bearing upon a public health service the following: (1) That the insurance committees receive from the Insurance Commissioners a sum of money equal to about $1.50 per insured person per annum, this to be handed quarterly to the doctor of the insured person. (2) That the Insurance Commissioners give 60 cents per annum per member to the doctor or druggist, who agrees to supply the insured person with medicine. Thus 60 cents plus $1.50 would be the minimum sum asked for by the British Medical Association. (3) In order to meet Mr. Lloyd George's objection that he cannot or will not grant the amount asked for per member per annum, Rentoul would suggest that each insured person pay a yearly sum of $1.25, or about two cents weekly, to the doctor. In other words, that they pay the amount the better class friendly societies now pay their doctors. These three sums of $1.50, 60 cents, and $1.25 would, with 14,000,000 insured persons, give the doctors an annual income of about $2,360 each, exclusive of confinements, vaccinations, notifications, operations, sanatoria,

etc., these probably totaling from $250 to $500 each doctor yearly.

Rentoul contends that medical men at the present time give more in charity, principally in gratuitous services, than do the members of any other profession or trade, and that it is time that the public cease to impose upon them. He characterizes as brazen effrontery the suggestion of the Chancellor of the Exchequer that the present income of medical men in Great Britain should be further reduced yearly by $14,000,000. He is also of the opinion that an eight hundred dollar income limit should be adopted, with a sliding scale of income at, say, $300, $400, $500, and $800, the yearly contribution by the insured person to vary with the income.

Attention may be drawn to the fact that German practitioners under their insurance scheme get more by far than is proposed by the British Medical Association. At Leipzig, medical men have been granted $3.75 per annum, while the average German allowance for drugs is about 94 cents. Some form of insurance is sure to come in every European country, and the formation of a National State Medical Service as suggested by Rentoul appears to fit in with the tendency of the times. Conditions in this country so far as the medical profession is concerned are not too rosy. In all the big cities societies and lodges are increasing, and the physician's income is at the same time decreasing. It may not be long ere a scheme for State insurance or nationalization is mooted here, and therefore it is well that physicians of this country should watch the course of events in Europe and endeavor to profit by experience gained there.

INTESTINAL INFANTILISM.

The late Dr. Herter of New York published a small monograph on what he termed "Intestinal Infantilism," which affection he attributed in some manner to the persistence of the intestinal bacterial flora of the nursling period. At a later period Prof. Heubner, who recognized the clinical entity, assigned as its cause a congenital intestinal insufficiency, the presence of the flora thus becoming, we suppose, the effect and not the cause of the condition.

At a recent session of the Charité Hospital Physicians of Berlin (*Berliner klinische Wochenschrift*, August 19) Eckert presented two patients with this form of infantilism. There was a uniform arrest of development dating from an early period of childhood. One child aged 11 years appeared to be seven years younger. The individual finds were numerous and complex. Failure to improve under pancreas therapy seemed to show that the condition was not akin to Bramwell's pancreatic infantilism. Thyroidin was then exhibited with brilliant results as far as amelioration of the symptoms was concerned. Whether the children will start to regain their growth cannot yet be foreshadowed, as the observation period is too brief.

The most striking improvement was seen in the locomotive system. The youngest child, but four years old, had been extremely backward in walking and speech, although there was no actual mental defect. Under thyroidin she began to improve rapidly and was soon running about and talking. As Herter showed, this form of infantilism is attended by severe chronic diarrhea, and this condition responded in part to the treatment.

Viereck's new diagnostic method, based on testing the chromaffin system, was practised. Glucose and adrenalin given simultaneously produced glycosuria, showing abnormal tonus of the sympathetic nerves. Atropin caused tachycardia, pilocarpin was inert. The stigmata of the exudative diathesis and lymphatism were wholly wanting.

The pancreas was plainly in abeyance as hardly any trypsin was poured into the intestine. The author believes that that organ was stimulated indirectly through the thyroid. The thyroid of the patients could not be felt. The infantilism was certainly not myxedematous, although there were a few symptoms in common with myxedema, such as the scanty dry hair.

PARADOXICAL DIPHTHERIA.

The abnormal course sometimes pursued by individual and family diphtheria was no doubt largely responsible for some of the antagonism shown toward serotherapy, both when the latter was first introduced and also subsequently. We can comprehend this antagonism to-day when the position of serotherapy has become fixed in certain episodes which are reported from time to time. Thus Jess, before the Medical Society of Kiel last June (*Münchener medizinische Wochenschrift*, August 20), stated that he attended a child with lacunar tonsillitis as the clinical diagnosis, the bacteriological examination being negative. Two days later a second child was attacked with clinical diphtheria as the diagnosis aand both children were given serum without waiting for the bacteriological diagnosis, which was later positive for the second child. Both children promptly and uneventfully recovered as far as diphtheria was concerned, but both developed serum disease after recovery, which also ended uneventfully. About one year later, corresponding to the annual recurrence of anginous affections, one of the children again developed what was clinically a lacunar angina without any marked systemic reaction. The condition was persistent and examination showed diphtheria bacilli in pure culture. Fear of anaphylaxis prevented serum injection. The tonsillar patches persisted under vigorous local treatment for several weeks, finally becoming sterile as to diphtheria germs. The sister received no prophylactic injection for fear of anaphylaxis, but contracted nothing. The patient during the more than five weeks of diphtheria had shown only a slight evening rise of temperature as evidence of toxemia. The author also knew of a similar episode and the sole way of explaining these second attacks is that ordinarily both the first attack and the serum injections would have secured a considerable period of immunity, but in these cases neither afforded any protection worth mentioning.

BOTRYOMYCOSIS.

The peculiar raspberry-like formations which sometimes follow wounds of the hands and other exposed localities have probably been regarded by the laity and family practitioner as nothing more

than a special form of "proud flesh." They have also been seen in the horse, and at one period were believed to have been caused by inoculation with an unknown parasite. Inferentially the same causation was attributed to the human form. The attempt to introduce the term botryomycosis into familiar use seems, however, to have been attended with failure. The Germans prefer the term pyogenic or telangiectatic granuloma, and despite the peculiar clinical form the consensus of opinion has attributed the lesion to some unexplained activity of ordinary pyogenic cocci. The most peculiar feature of this lesion, however, is its tendency to recur when removed. At a recent meeting of the Kiel Medical Society (*Berliner klinische Wochenschrift*, August 12) Konjetzny was able to demonstrate two cases of this affection. He was unable to point to any new causal agent to explain its nature, but his histological studies led him to believe that these formations are tumors and not mere granulomata. The abundant new formation of blood vessels and the coincident occurrence of sarcoma-like tissue would apparently show the presence of a proliferating angioma or angiosarcoma. It may have been more than a coincidence that one of these growths developed on the site of a minute vascular birthmark. These tumors of traumatic origin may also have affinities with keloid formations.

News of the Week.

Yellow Fever in Mexico.—A recent report states that yellow fever has been present in Mexico since August 1, 1911. During that time sixty-eight cases with thirty-two deaths were reported in Merida. In San Juan Bautista, in the State of Tabasco, there were between May 4 and August 10 of this year a total of fifty-three cases of the disease with twenty-two deaths. The disease is now reported to be epidemic in Frontera, a port fifty-five miles from San Juan Bautista, having been carried from the latter place by troops transferred to Frontera, and Acting Assistant Surgeon J. F. Eaves has been assigned to temporary duty in the American Consulate at Frontera for the purpose of fumigating vessels and performing other necessary quarantine work on vessels prior to their departure for ports in this country. The disease has also been epidemic during the summer in Chile, and cases have occurred in Brazil, Colombia, Ecuador, and Venezuela. Investigation has shown that in certain localities of South America and on the west coast of Africa, and in Central America and southern Mexico yellow fever is endemic and has become a disease of childhood, the adult natives possessing immunity acquired by infection in early life. These endemic foci are a constant menace to all ports having commercial relations with them.

Smallpox in Pennsylvania.—During the week ending September 13 sixteen deaths from smallpox occurred in Pittsburgh, and on that day thirteen new cases were reported, making a total of 178 cases then in the city. Hundreds of persons are leaving the town, and in some quarters where the streets are roped off and quarantine lines are maintained by mounted police the inhabitants are in a state of panic. City physicians are vaccinating all of the school children, the members of the police force have also been vaccinated, and the street car company has ordered the vaccination of its motormen and conductors. The Health Director of the city is one of those who has contracted the disease. An epidemic of smallpox has also broken out in Carbondale, Pa., more than fifty cases having been reported. The Pennsylvania State Department of Health has taken charge of the situation.

Typhoid Fever at Allentown.—Upward of twenty-five cases of typhoid fever, with at least two deaths, have appeared within a short time in a newly annexed portion of Allentown, Pa. At first it was thought the water supply was at fault, but investigation disclosed the fact that almost all of those attacked received milk from one original source of supply.

Polluted Oysters.—The menace of oysters infected with typhoid germs is the subject of a report recently issued by the United States Department of Agriculture as the result of an investigation into an epidemic of typhoid fever occurring in Goshen, N. Y., in October, 1911. The source of infection in this instance was traced to oysters from Jamaica Bay, the investigator declaring that millions of gallons of sewage were discharged daily into the bay, around and even directly over the oyster beds. The Sanitary Superintendent of New York, however, states that there is no danger of another outbreak, and that, as a matter of fact, the oysters became contaminated, not in the bay itself, but in the freshening grounds further back in the meadows. Following an inspection of the oyster beds made by the New York Department of Health last spring, the small sewers polluting the freshening grounds were destroyed as much as possible. Examination of the water in the bay, it is alleged, shows that there is no danger of contamination because of the immense volume of water and the strong tides. This statement one may be permitted to doubt.

Liner Brings Smallpox.—The Italian SS. *America*, which arrived in New York on September 11 from Naples, was detained at Quarantine because of the presence of a case of virulent smallpox on board. The patient was removed to Hoffman Island together with 574 of the steerage passengers and crew with whom he had come in contact, and the other passengers after vaccination were allowed to land.

Deaths in New York.—During the week ending September 7 there were 1,229 deaths in New York City, the death rate per thousand being 12.39, as compared with 13.24 for the same week of last year, when the total number of deaths was 1,265. Of infants under one year of age there were 319 deaths, 50 less than during the preceding week.

Medical Examinations.—The State Board of Medical Examiners of California announces that of the 200 physicians who took the recent examinations, over 80 per cent. had passed successfully and had been granted licenses to practise.

Deaths of Aviators.—On September 11 Lieut. Siebert, an aerial scout in the German Army maneuvers, was killed by the fall of his aeroplane and his companion was seriously injured. This was the sixth fatal accident in six days among army aviators alone.

Infantile Paralysis.—Reports from Buffalo state that up to September 9 there had occurred in that city within the last few months 220 cases of infantile paralysis, with twenty-six deaths and permanent crippling in 60 per cent. of the survivors. Four new cases were reported on September 8. The disease has also been epidemic in Southern California, and from June 8 to August 17, a total

of 226 cases were reported in Los Angeles, with forty-three deaths.

"Open Window" Class.—In Montclair, N. J., where one of the first open-air schools for delicate children was opened, an "open window" class has been started in the Hillside Grammar School, to be followed by other classes of the same sort as seems desirable.

Radium Supply.—On behalf of the Bank of Radium of Paris and of Madame Curie, arrangements have been made for the purchase of property in Meeker, Col., containing the largest carnotite deposits in this country. The property is being acquired in the hope that radium will be found in sufficient quantities to permit of greater researches by the French scientists. In addition to radium carnotite, which was named in honor of President Carnot of France, contains radium salts, uranium, and vanadium.

Health Department Needs.—The New York City Department of Health has submitted to the Board of Estimate a request for an appropriation for the year 1913 of $4,510,308.25, which is an increase of $1,367,921 or 43.5 per cent. over the amount allowed for the current year. A considerable part of the increase is desired for raising some existing salaries and providing salaries for positions to be created.

For Health Conservation.—At a meeting of prominent Democrats held in the Colony Club, New York, on September 9, a bureau of health conservation in the interest of pure food and the consequent maintenance and improvement of health was formed, with the following officers: *President,* Dr. Harvey W. Wiley of Washington; *Vice-President,* Prof. Irving Fisher of New Haven; *Secretary,* Mrs. J. Borden Harriman of New York; *Permanent Committee,* Dr. J. N. McCormack, Bowling Green, Ky., representing the American Medical Association; Major W. O. Owen of Washington; Dr. Richard C. Newton of Montclair, N. J., and Dr. E. R. L. Gould and Dr. Thomas Darlington of New York. The formation of the bureau is a consequence of the health plank in the Democratic platform.

Gifts to Charities.—By the will of the late John Henry Schaefer of New York the Presbyterian and the German Hospitals of this city receive each a bequest of $10,000.

By the will of the late Mrs. Ida A. Whitman of Philadelphia contingent bequests of $5,000 each are made to the Presbyterian Hospital and the Episcopal Hospital to endow free beds in memory of her husband and a similar bequest of $2,500 to the Children's Hospital.

By the will of the late John G. Hees of Philadelphia the sum of $1,000 is bequeathed to the German Hospital.

By the will of the late Robert Wolf of Philadelphia the sum of $100 is bequeathed to the Jewish Hospital Association.

Fordham Faculty Dinner.—On Thursday evening of last week the Medical Faculty of Fordham University gave a dinner at the Hotel Astor in honor of the foreign lecturers in the International Extension Course on diseases of the nervous system which is being held this month. The guests of honor were Dr. Henry Head and Dr. Gordon Holmes of London and Dr. Nicolas Achucarro of Madrid. Drs. Alwyn Knauer of Munich and Carl Jung of Zurich, the other foreign lecturers in the course, were absent, having not yet arrived from Europe. Among the other guests were many of the most eminent neurologists of the country. The Rev. Dr. Thomas J. McClusky, President of Fordham University, presided, and Dr. James J. Walsh, Dean of the Medical Faculty, acted as toast-master. The speakers were Father McClusky, Father Hanselman, Provincial of the Society of Jesus; Dr. Henry Head, Dr. M. Allen Starr, Dr. Sears of the University of Vermont, Dr. M. J. Lewi, Judge O'Sullivan, and Paul Fuller, Esq., Dean of the Faculty of Law of Fordham University. The keynote of the addresses was internationalism in medical study as exemplified in the international extension course, which had been initiated somewhat in the nature of an experiment and which had from the first proved to be an unqualified success both in attendance and in the interest of the lectures. At the close of the speaking Dr. Maloney, to whom credit was given for originating the course, announced that the next series of lectures would be on the diseases of metabolism.

Clinical Physiology.—The Department of Physiology of the College of Physicians and Surgeons, New York, offers to practitioners in medicine a course in Clinical Physiology, which deals with the application of physiological principles and methods to problems of practical medicine. The course, which consists of fifteen weekly exercises, will be given by Dr. R. Burton-Opitz, Dr. F. H. Pike, Dr. Haven Emerson, and Dr. H. B. Williams, on Thursday afternoons from 3 to 5 o'clock, at the college, 437 West 59th street, beginning October 3. The fee for the course is $15, with a matriculation fee of $5 in addition. Applications may be made to Prof. Frederic S. Lee at the College of Physicians and Surgeons.

Mississippi Valley Medical Association.—The thirty-eighth annual meeting of this association will be held at the Hotel Sherman, Chicago, Ill., on October 22, 23, and 24, 1912, under the presidency of Dr. Louis Frank of Louisville, Ky. The orations in medicine and surgery will be delivered by Dr. C. G. Stockton of Buffalo, and Dr. George W. Crile of Cleveland. Details may be obtained from the secretary of the association, Dr. Henry Enos Tuley, Third street Annex, Weissinger-Gaulbert, Louisville, Ky.

Washington State Homeopathic Medical Society.—At the annual convention held in Tacoma on August 30 and 31, the following officers were elected: *President,* Dr. George H. Dow, Chehalis; *Vice-Presidents,* Dr. C. P. Bryant, Seattle, and Dr. E. F. Larkin, Bellingham; *Secretary,* Dr. George Walter Beeler, Seattle; *Treasurer,* Dr. Thomas J. Appleton, Seattle. The next annual meeting will be held in Seattle.

International Congress of Gynecology and Obstetrics.—This Congress, which has just closed its sessions in Berlin, elected Dr. J. Riddle Goffe of this city president, and voted to hold the next meeting in New York City in September, 1915. Among other Americans who attended the Berlin Congress and read papers were Dr. Parker Davis of Philadelphia and Dr. Hermann Boldt and Dr. Arthur Stein of New York.

Publications of the Tropical Diseases Bureau.—In November the Tropical Diseases Bureau, which replaced the Sleeping Sickness Bureau on July 1, will commence the publication of the *Tropical Diseases Bulletin* under the general editorship of the director, Dr. A. G. Bagshawe. Each number will consist of about fifty pages containing

classified summaries of the current literature of the tropical diseases; they will appear, as a rule, twice a month. The annual subscription price will be one guinea, post free. The publishers will be the Messrs. Baillière, Tindall & Co. of London. The tropical diseases of animals will be treated in a separate publication, the *Tropical Veterinary Bulletin*. This will appear quarterly from October and will be in charge of Mr. A. Leslie Sheather of the Royal Veterinary College, London.

Honorary Degrees Conferred by Fordham University.—The extension course for practising physicians in the study of nervous and mental diseases was opened at the Fordham University Medical College on September 9, to last for three weeks, women being admitted to the lectures for the first time, it is said, in the history of a Jesuit institution. Over a hundred and fifty physicians attended the opening. On September 11 the university conferred the honorary degree of LL.D. on Drs. Henry Head of London, Carl Jung of the University of Zurich, Nicolas Achucarro of Madrid, and Horatio Robinson Stover of Newport, R. I. Dr. Gordon Holmes of London was made a doctor of science. The new Fordham Clinic, the building and equipment of which have cost over $200,000, was also opened recently.

The Association of Life Insurance Medical Directors.—The twenty-third annual meeting of this Association will be held in New York City on Wednesday and Thursday, October 9 and 10 in the Board Room of the Mutual Life Building, 34 Nassau street. The following papers will be read: President's address, "Some Studies in Family History," by Brandreth Symonds, M.D., Chief Medical Director The Mutual Life Insurance Company of New York; "Further Report on Blood Pressure," by John W. Fisher, M.D., Medical Director the Northwestern Mutual Life, Milwaukee, Wis.; "Selection of Female Risks in Whom Hysterectomy and Ovariotomy Have Been Performed," by P. H. Ingalls, M.D., Assistant Medical Director the Ætna Life Insurance Company, Hartford, Conn.; "The Significance of Some Urinary Constituents," by J. Bergen Ogden, M.D., Assistant Medical Director the Metropolitan Life Insurance Company, New York City; "A Study of Chest and Abdominal Measurements in Relation to Build," by Faneuil S. Weisse, M.D., Medical Director the Mutual Life Insurance Company of New York. The annual dinner of the association will be held on Wednesday, October 9, at 6.30 P.M., at the University Club, Fifth avenue and 54th street, New York City. Further information regarding the meeting can be obtained from the secretary, Dr. William Evelyn Porter, 34 Nassau street, New York.

Obituary Notes.—Dr. George H. Cocks of New York, a graduate of the Bellevue Hospital Medical College, New York, in 1882, a member of the American Medical Association, the New York State and County Medical Societies, the Academy of Medicine, and the New York Ophthalmological Society, assistant surgeon to the New York Eye and Ear Infirmary, and ophthalmologist to the Institute of Mercy, died at his summer home in Pleasantville, N. Y., on September 8, aged 51 years.

Dr. Horace Lewars died in the German Hospital at Philadelphia on August 26 as a result of uremia and paralysis at the age of 44 years. He was graduated from the medical department of the University of Pennsylvania in the class of 1890. He was a retired officer of the First Regiment National Guard of Pennsylvania and during the Spanish-American War he took an active part in caring for the men when typhoid fever broke out in the camp at Chickamauga. He was a member of the Philadelphia Obstetrical Society.

Dr. William Dan Lamb of Lawrence, Mass., a graduate of Jefferson Medical College in 1846, died at his home on August 25, aged 88 years. He was closely identified with the early history of his native town, and served as an army surgeon during the Civil War.

Dr. Edouard Napoleon Fugere of McGregorville, N. H., a graduate of Laval University, Montreal, died on August 30, aged 49 years. He was a member of the medical staff of Nôtre Dame de Lourdes Hospital.

Dr. William T. Klein of New York, a graduate of the College of Physicians and Surgeons, New York, in 1895, and a member of the National Society for the Prevention of Tuberculosis and the Greater New York Medical Association, died at Sea Cliff, L. I., on September 7, aged 37 years.

Dr. Frank Edward Lewis of Albany, N. Y., a graduate of the Cleveland University of Medicine and Surgery in 1886, a member and vice-president of the New York State Homeopathic Medical Society, and attending physician to the Homeopathic Hospital of Albany, died at his home on September 10, after a long illness, aged 57 years.

Dr. Henry Strong Denison of Denver, Col., a graduate of the Johns Hopkins Medical School, Baltimore, in 1908, a member of the American Medical Association and of the Colorado State and Denver County Medical Societies, died suddenly at his home on August 28, aged 28 years.

Correspondence.

ANOPHELINES IN THE PHILIPPINE ISLANDS.

To the Editor of the Medical Record:

Sir:—May I venture to call the attention of your readers to an error in your Philippine letter dated June 14 in regard to the anophelines in the Philippine Islands? The writer says: "In view of the fact that no anophelines, even after most diligent search, have been found anywhere in the Philippine Islands (with the possible exception of one single specimen which is alleged to have come from the Philippines, and which is now in Washington)," etc.

I do not know where the writer got his information, but there could hardly be a greater misstatement. The anophelines are widespread and numerous throughout the islands, and include *Anopheles formosus* (Ludlow); *Myzomyia funesta* (Giles); *M. indefinita* (Ludlow); *M. ludlowii* (Theobald); *M. rossii* (Giles); *M. thorntonii* (Ludlow); *Stethomyia pallida* (Ludlow); *Myzorrhynchus barbirostris* (Van der Wulp); *M. pseudobarbirostris* (Ludlow); *M. sinensis* (Wiedemann); *M. vanus* (Walker); *Nyssorhynchus flava* (Ludlow); *N. fuliginosus* (Giles); *N. philippinensis* (Ludlow); *N. stephensi* (Liston); *N. theobaldi* (Giles); *Calvertina lineatus* (Ludlow).

The nomenclature is according to Theobald. In the eleven years I have been connected with the mosquito work for the Medical Corps, U. S. Army, I have handled thousands of anophelines from the Philippines, but *M. rossii* is one of those rarely sent in. There can hardly be said to be a

dearth of anophelines in the Philippines as a whole, but there are a few localities where they are seldom taken.

C. S. Ludlow.
Army Medical Museum and Library, Washington, D. C.

OUR LONDON LETTER.

(From Our Regular Correspondent.)

COST OF HOSPITALS—TROPICAL MEDICINE—THE AUSTRALIAN INSTITUTE—GOVERNMENT'S EXPEDITION TO THE NORTH—VITAL STATISTICS; LONDON RATES, RURAL RATES (ESSEX)—WOMEN'S CORPS CAMPING OUT—INSURANCE, MORE RESIGNATIONS—EXHIBITION—OBITUARY.

London, August 30, 1912.

Renewed attention has of late been directed to the cost of our London hospitals. On Tuesday the authorities of King Edwards Fund contributed some statistics of the expenditure in 1911, amplifying its annual report issued in April. There are 107 institutions connected with the fund, of which 17 are general hospitals, with an average of 100 beds in daily occupation and 15 with a lower average. The others are special: 4 for consumption, 5 for women, 6 for children, 3 epilepsy and paralysis, 5 ophthalmic, 12 cottage, 8 lying-in, and 32 unclassified. There were increases in the cost per bed and among out-patients amounting in 1911 to £9,600, against which it is stated must be set off economies of about £47,000 per annum effected since the first issue of the reports in 1904. It is said three factors tend to increase the expenditure: (1) tendency toward costly special treatments resulting from developments of medical science; (2) rise in prices; (3) danger lest success in effecting economies lead to slackness in the constant effort needed to maintain them.

It is important that where increase has occurred the committees should ascertain whether it has been unavoidable or due to preventable causes, particularly when the increase exceeds the average of similar hospitals. In the large general hospitals the increases occur under surgery and dispensary as well as maintenance (salaries and wages). In children's hospitals the increase in average cost is much heavier and more generally distributed over the different items of expenditure.

The Australian Institute of Tropical Medicine is making great progress. The Commonwealth Government has granted additional endowments to provide for extension of the work. From there new laboratories and special wards in the Townsville hospital are being erected. The universities of Sydney, Melbourne, Adelaide, and Brisbane will grant diplomas on the subject, leaving the teaching to the Institute. The Government will appoint representatives to control the arrangements jointly with the universities. The Institute has appointed Dr. Henry Priestley and Dr. Nicoll on the staff.

The report of the Australian Commonwealth's expedition to the Northern Territory to investigate tropical diseases shows that the occupation of the district by whites is mainly a medical problem. A fourth of the mortality is due to malaria. There are deaths from dysentery almost every year, besides epidemics which sometimes break out. Beriberi, ankylostomiasis, yaws, trachoma, and leprosy are also known, but generally have been so far sporadic. An important statement is that residents who live a reasonable life, taking adequate exercise and the precautions adapted to a tropical country, enjoy good health. Up to the present there is no evidence of the influence of the climate on the third generation, though it perhaps may have to be taken into consideration in the future. Dr. Breinl describes life on the stations as ideal with regard to health—an active outdoor life in the comparatively cool and dry winter experienced on the tablelands. But alcoholism is an enemy as much as malaria. The prominent lesson of the expedition is the necessity of skilled medical help. No precautions seem to have been in force in the mining settlements to restrain the spread of malaria or indeed any other condition. But the extirpation of malaria is not the only problem. The Territory is said to be exposed to infection from China and the Dutch Indies, and the sanitary conditions such that if once introduced tropical diseases would most likely assume an epidemic form. It is accordingly recommended that those diseases should be studied on the better known islands with a view of quarantine legislation. The necessity of this is indicated by the fact that one or two species of mosquitos known to abound in the Malay States have already been detected in the Northern Territory, showing that invasion from the East has actually taken place.

The facts mentioned in my last respecting the low birth-rate have since been illustrated and enforced by the return on Wednesday of the births and deaths during April, May, and June. In that quarter the births in England and Wales corresponded to a rate of 23.9 per 1000, which was 3.7 below the mean in the ten preceding second quarters and the lowest recorded in any second quarter. The natural increase of population by excess of births over deaths was 102,302, against 111,987, 119,154, and 105,812 in the second quarters of 1909, 1910, and 1911, respectively.

The deaths were equal to an annual rate of 12.7, or 1.7 below the mean in the ten preceding corresponding periods, and the lowest death rate recorded in corresponding quarters. London's rate was 12.4. The infantile mortality was at a rate of 89 per 1000 births, being 14 below the average in ten corresponding previous periods and the lowest on record. The deaths from epidemic diseases in the quarter totaled 8884.

Taking this closing month of August by itself, although it has been the wettest and coldest on record, still more favorable figures are reported and that especially in regard to infantile mortality, the difference between this year and last being chiefly due to the diminution of diarrhea, which is usually so excessive in summer. Many hundreds of children unquestionably owe their survival to the almost complete absence of summer heat, which so many of their seniors are lamenting.

Dr. J. C. Thresh, Medical Health Officer for Essex, has just issued his report for 1911, in which he touches on some of the above-mentioned facts, but in regard to his own district, one of the healthiest counties in the kingdom. The rural birth rate is there also falling and he says should have the attention of the State. He holds it to be affected by the dearth of good cottages and thinks owners might build them to return fair interest. But he admits that management and repairs may swallow up the returns, and the work should be done by public authorities.

Dr. Thresh reports that in his county the deaths from consumption are decreasing, but from cancer they have been continually on the increase and are now actually more numerous than from phthisis.

The Women's Sick and Wounded Convoy Corps

was founded about three years ago to provide efficient training for service in voluntary aid detachments in conformity with the requirements of the Red Cross Society. The training is based upon the R.A.M.C. system. The corps has gone into camp under its commandant-in-chief, Mrs. St. Clair Stobart, and in spite of the most adverse weather the members have carried out their duties with energy and even enthusiasm. Commandant Stobart requires the strictest discipline, and the daily program this week is exacting from reveille at 6 A.M. to "lights out" at 10:15 P.M. Night watches are kept from 10 to 2 A.M. and 2 to 6 A.M. The work of the camping out is no pretense. Everything is done by the members of the corps, even the pitching and striking of the tents and the digging of the camp fire trenches.

Another resignation from the Advisory Committee appointed under the National Insurance Act has taken place, that of Dr. Herbert Jones, Medical Health Officer for Herefordshire, one of the fourteen medical members who refused to resign at the request of the British Medical Association, declaring that they considered their duty "for the present" was to remain on the committee.

The medical staff of the Swansea Hospital informed the Board on Wednesday that they will be unable to give their services to persons insured under the Act when the medical benefit comes into operation except in cases of urgent necessity. Dr. Knight, on behalf of the staff, explained that these cases were accidents or serious diseases. Their only contention was with the Government which sought to impose on them heavy duties on impossible terms. It was said to concede their demands the Chancellor would have to find more than three millions, but Dr. Knight asked what would it cost to pay for the services now given gratuitously? He calculated in that hospital the surgical operations performed in a year, at five guineas each, would cost ten thousand, and that had hitherto been done gratuitously. The Board decided to hold a special meeting to discuss the matter.

An exhibition of modern appliances for the treatment of tuberculosis has been opened this week and will remain open for some time. It was organized by the Society of Medical Officers of Health and seems likely to succeed. Demonstrations and lectures are to be given at intervals. Hygienic measures, in relation to cookery, disinfection, open air shelters, are largely represented.

Mr. Clinton T. Dent, vice-president of the Royal College of Surgeons, senior surgeon to St. George's Hospital and chief surgeon to the London police, died on the 26th inst, aged 61 years. He took the M.R.C.S. in 1875 and proceeded to the fellowship two years afterward. He lectured in the school of St. George's when elected on the hospital staff, first on physiology, then on surgery. He became a member of several societies, contributing papers to them and to the journals. He was elected to the council of the college and in due course on the Court of Examiners. He also served for some time as examiner in surgery to the University of Cambridge, which in 1899 conferred on him the honorary degree of M.C. He wrote the "Nature and Significance of Pain," which you will probably remember. He translated and edited Billroth's "Clinical Surgery." The "Medico-Chirurgical Transactions," Heath's "Dictionary of Practical Surgery," Tuke's "Dictionary of Psychological Medicine," and the volumes of "Mental Science" were also indebted to his pen for illuminating articles. Besides his professional work, Mr. Dent was an explorer and mountaineer of distinction. He became president of the Alpine Club (1886-9). He conducted a series of explorations in the Caucasus. He wrote the volume on "Mountaineering" in the Badminton Library and many articles on Alpine as well as surgical subjects. In 1899 and 1900 he was in South Africa as an independent surgeon and the result was a series of letters on "Gunshot Wounds" in the *British Medical Journal*.

Mr. Edgar Jones, J.P., who died on the 26th inst. in his 103d year, was probably the oldest member of the profession as well as the senior magistrate. He took the membership of the Royal College of Surgeons in 1834 and practised for some years at Saffron Walden in Essex, but later he devoted himself to agriculture. In 1852 he was put on the Commission of the Peace and eventually became chairman of the Billericay Bench. King Edward sent him a telegram of congratulation when he attained his 100th birthday. A few months ago he met a centenarian woman and they exchanged reminiscences. Mr. Jones was a life abstainer from alcohol and tobacco. He retained his faculties in a remarkable degree.

OUR CANADIAN LETTER.

(From Our Regular Correspondent.)

MEETING OF THE CANADIAN MEDICAL ASSOCIATION AT EDMONTON, ALBERTA.

TORONTO, Sept. 10, 1912.

THE annual meeting of the Canadian Medical Association took place this year on August 10, 12, 13 and 14 at Edmonton, Alberta. This is only the third time that the association meeting has been held in the West. Twenty-three years ago it was held in Banff, and in 1904 in Vancouver. The meeting at Edmonton was successful from many points of view; the attendance, considering the distance to be traveled before reaching Edmonton from Eastern Canada was excellent, and the papers generally were good.

Dr. H. G. MacKid, of Calgary, the president, gave an inspiring address filled with enthusiasm for the West and with wonderful predictions for its future. Dr. MacKid said in part that the outstanding need of the medical profession in Canada today was a closer and more thorough organization of the medical men in their respective district, county, and provincial associations, which as a result would find their fullest and proportionate representation in the National Medical Association. Reference was made to the passage of the bill which made interprovincial medical reciprocity possible, and a glowing tribute was paid to Dr. Roddick, of Montreal, for his untiring efforts to bring this about.

Dr. MacKid spoke of the value of the *Canadian Medical Association Journal* and said that, thanks to the labors of the finance committee of the past two years, an efficient journal had been established, which, under the able editorship of Dr. Macphail, had already won for itself a place in the periodical literature of the medical world. It was hoped that within a short time it might be made a weekly instead of a monthly. That, however, would depend upon the support given the association by the profession at large throughout the country.

Attention was also drawn to the affiliation of the various provincial associations with the Canadian

Medical Association, which had been carried through during the past twelve months. At present all of the provinces save one had declared themselves in favor of affiliation and had become affiliated.

After commenting on things done the speaker considered the needs of the future. According to him the great problem now is to get the Canadian Medical Association solidly cemented together. The establishment of the journal had been a long stride in this direction. The next step was to create a properly constituted central body, a sort of parliament, with proportionate representation from each province. First, however, county societies must be organized, and in those districts where none existed they must be created.

Dr. MacKid gave unstinted praise to the efforts of the American Medical Association to improve the standard of medical education, to uproot commercialism, and to abolish quacks and proprietary medicine and fake cures. In closing the speaker sketched in glowing and enthusiastic language the future of medicine in the West. Dr. A. E. Giles, London, Eng., gave the address in surgery.

A decidedly novel feature of the meeting was the fact that on the Sunday preceding the general sessions several pulpits in Edmonton were occupied by medical delegates. Sir James Grant, of Ottawa, occupied the pulpit of Knox Church and delivered a striking health homily from the text, "Turn ye, turn ye; why will ye die?" Sir James discoursed eloquently on health matters and especially on tuberculosis, and wisely pointed out that in a new city as Edmonton was it was important that the utmost care should be taken in its drainage facilities, as defects in drainage and sewer utilities was a cause of many diseases. Dr. Bruce Smith, of Toronto, preached a sermon on health in the Metropolitan Methodist Church, taking as his text, "It doth not appear what we shall be. The earth is the Lord's and the fullness thereof."

Among papers of interest read in the section was one that attracted marked attention by Dr. E. Ryan, superintendent of the Rockwood Hospital at Kingston, Ont. This paper, entitled "Seven Years' Advance in the Ontario Hospital for Mental Diseases," was somewhat of an indictment of the manner in which mentally deranged persons are treated in some localities and indeed were treated in Ontario seven years ago. Dr. Nicholls, of Edmonton, in discussing the paper, said that he had been informed by the Attorney-General that the only asylum in Alberta was so crowded with people of a low criminal grade that it left no room for anyone unless dangerously insane. According to the speaker, so far as the management and care of the insane was concerned in Alberta, they are now where Ontario was twenty years ago and not where it was seven years ago. He pleaded that the public take more interest in the matter and compel the government of Alberta to make more adequate provision for the cure of the mentally sick in the province.

The meeting was chiefly distinguished perhaps by its health sermons and by its popular lectures. On the evening of August 14 Prof. J. George Adami, of Montreal, delivered an address, taking as his text "The Sins of the Fathers." It was, in fact, an excellent scientific disquisition on heredity. He attacked the modern popularly accepted doctrine that acquired conditions are not inherited, and as a corollary that the germ cells are unaffected no matter what vicissitudes are undergone by the body at large, or rather, perhaps, by the body of the parent-at-large. This is to say that the sins of the fathers do not tell upon the children. These teachers prophesy that no matter how the parent ill treats his body prior to conception the progeny is unaffected; a man may have tuberculosis or syphilis, and provided he does not give the disease to the mother and so bring about infection of the fetus in the womb, the child is likely to be as strong and healthy as that of a perfectly sound parent. Adami stated emphatically that he was sufficiently old-fangled to repudiate this new-fangled "Weismannism," and he still held the belief that the sins so-called of the parents against the body, or at least a very important series of such sins, do influence the progeny to his hurt, and, what is more, he believed that these new-fangled ideas had their origin in the narrowness, or it might be said in the Chauvinistic provincialism of the zoologists. Adami went on to show that inheritance of disease was not everything, from the point of view of eugenics, the terrible effects of congenital disease and more particularly of infections conveyed to the growing individual while in the womb or during parturition must be considered. When it is accepted that at least half of gynecological practice is due to gonorrhea and its results, that a large proportion of the cases of infantile blindness is of gonorrheal origin, that as demonstrated by the Wassermann test, practically all cases of locomotor ataxia, and nearly all cases of general paralysis of the insane are of syphilitic origin; when we know that most cases of multiple successive abortions are syphilitic, and recognize the puny, miserable parodies of humanity doomed in most instances to an early death, that too often are the result of syphilitic disease in the parent; when we realize the preventable ills that follow in the train of these venereal diseases, the speaker said he wholly agreed that the time had come when we should no longer refer to these matters by circumlocutions, when for the good of the coming generations we should openly wage war against gonorrhea and syphilis, and above all should for the safety and welfare of our children instruct them as to the dangers they must ward against, not merely on account of their own health and happiness, but for the sake of the generations yet unborn.

Prof. H. A. McCallum, of London, Ontario, was elected president and London, Ontario, was selected as the next place of meeting. The Executive Council was elected as follows: Drs. Whilland, Edmonton; Findlay, Montreal; Adami, Montreal; Halpenny, Winnipeg; Reeve, Toronto; McKechnie, Vancouver; Small, Ottawa; Kennedy, Macleod; Daniels, St. John, N. B.; Madre, Halifax; Archibald, Montreal; Primrose, Toronto; Conroy, Charlottetown, and Young, Saskatoon. Dr. H. G. MacKid, Calgary, as president of the association will be a member of the committee *ex officio*. With true Western hospitality the medical men who attended the meeting were entertained in various ways. Trips were arranged to points of interest in the vicinity of Edmonton—vicinity being a broad term in that land of immense distances. Visits were made to points in the Rockies, only a question of a hundred miles or so, and a good impression was created of the great Northwest. The meeting was eminently successful both from the scientific and social viewpoints.

Progress of Medical Science.

Boston Medical and Surgical Journal.

September 5, 1912.

1. The Use of Lactic Acid Soured Milk and Lactic Acid Bacilli in Pulmonary Tuberculosis. P. C. Bartlett and C. V. Murphy.
2. Two Cases of Diverticulum of the Bladder Treated by Operation. A. L. Chute.
3. Present Status of Salvarsan. A. Post.
4. Two Cases of Orchitis Due to Mumps Treated by Operation. G. G. Smith.

1. Use of Lactic Acid Bacilli in Pulmonary Tuberculosis.—P. C. Bartlett and C. V. Murphy state that every clinician who has concerned himself extensively with the care of tuberculous patients has been impressed with the prostrating effect of the obstinate diarrhea, alternating very often with intervals of constipation, which is a not infrequent complication of well established, or advanced pulmonary tuberculosis. That the large percentage of these cases are functional only has been indicated by a somewhat extensive study of the feces in the laboratories of the Rutland State Sanatorium, and their toxic origin is strongly suggested. It is in connection with this type of individual, as well as in cases of actual tuberculous enteritis that the employment of lactic acid soured milk has afforded the maximum benefit, both as a dietary measure in support of energy and in tissue repair, and as an agent favorably modifying the symptoms and controlling the diarrhea. Its range of usefulness extends over almost the entire field of gastrointestinal affections encountered in connection with sanatorium work.

2. Diverticula of the Bladder.—A. L. Chute reports two cases of diverticulum of the bladder successfully treated by operation. The type presented by the two cases differed essentially from the clearly congenital double bladders, on the one hand, and also from the little herniæ of the bladder that are directly due to pressure and usually arise near the vertex. Diverticula, such as those in the reported cases cannot strictly be called congenital, yet the author believes they always have their origin in the little pits that one sees from time to time just to the outside of the ureteric orifice, and which are undoubtedly faults or anomalies in the development of the bladder. Embryologically buds from the fetal ureter, which might easily lead to such little pockets, are supposed only to arise to the inner side of the ureter, while these are seen on the outer side. Many writers note the frequency with which diverticula appear just outside the ureter, but the author has seen no explanation offered for this. He believes the most probable explanation lies in the little congenital pits or pockets. These are not confined to males. Their presence is not in itself sufficient to bring about the formation of a diverticulum. There must be the determining agent as well, such as an increase in the intravesical pressure. This may be due to obstruction at the bladder outlet, or anywhere along the urethra, or a sharp cystitis, attended with violent bladder spasms, may be sufficient.

3. Present Status of Salvarsan.—A. Post concludes that salvarsan is the most rapid and powerful antisyphilitic known. It is not without its dangers which are sufficient to induce caution in its use, but not to cause its abandonment. It is not yet possible to promise absolutely a cure. One should not urge its use upon those who are impressed by its possible ill effects. It should be used in conjunction with mercury in all cases in which a diagnosis can be made before general symptoms appear. It should be used in all cases in which patients are not progressing well under ordinary treatment in any stage. It should be used in all cases in which patients are an especial danger to the community. It should not be used in maximum doses, but rather in repeated medium doses and in exceptional cases in repeated minimum doses.

4. Surgery of Orchitis Due to Parotitis.—G. G. Smith reports two cases of orchitis of this nature on which he operated with the primary object of preventing, if possible, the atrophy which so frequently follows this affection. The method employed was based upon the theory that atrophy results from the increased intratesticular pressure caused by the inflammation. Relief of this tension obtained by slitting the tunica albuginea restores the circulation and preserves the testicle.

New York Medical Journal.

September 7, 1912.

1. Yellow Fever a Strictly Human Disease. A. Agramonte.
2. Pneumonia in Children. H. Lowenburg.
3. The Wassermann Test. D. M. Kaplan.
4. Vesical Neoplasms. J. F. McCarthy.
5. Ten Sex Talks to Girls. I. D. Steinhardt.
6. Endourethral Chancre. E. H. Marsh.
7. A Completed Treatment for Tonsillitis. F. Griffith.
8. Massive Tuberculosis of the Liver. D. Felberbaum.
9. The Cinematograph as an Aid to Medical Education and Research. R. Matas.

1. Yellow Fever a Strictly Human Disease.—A. Agramonte states that the hypothesis is unsupported which avers that yellow fever may attack the lower animals and that thereby the causative agent may continue to spread or be kept alive for considerable periods without attacking human beings living in the same territory. Numerous attempts have been made to inoculate the lower animals with this disease, but these attempts have been unsuccessful except in one instance, the inoculation of a chimpanzee by Thomas, in Brazil The author has inoculated animals with venous blood, fecal matter, and "black vomit" from human cases, and has even applied infected mosquitos to the abdomen of rhesus monkeys, without in any instance transmitting the disease. In view of these facts and inasmuch as the mosquito's life is not shortened by carrying the virus and does not seem to be in the least affected by the latter, the author concludes that yellow fever is strictly a human disease.

3. Wassermann Reaction.—D. M. Kaplan concludes that there are diseases other than lues giving positive reactions. The old method of amboceptor standardization does not consider all the obstacles that it is designed to overcome. The aging of the antigen is capable of producing inhibition in doses smaller than ascertained in the original gauging, and should receive attention on the day of the test. The patient's serum ought not to be older than forty-eight hours. Old sheep cells develop anticomplementary powers.

4. Vesical Neoplasms.—J. F. McCarthy presents the following conclusions, which, in the light of recent advances, would appear to serve as a more or less adequate working basis in the treatment of tumors of the bladder, though in reality each case should be considered on its individual merits. The Oudin spark treatment (cystoscopic) applies to small or moderate size growths, single or multiple, particularly the latter, which are accessible and apparently of a benign character. In the absence of a reasonably prompt effect, such treatment should not be prolonged. Except in the unusual case in which pronounced hematuria obscures the view, the method will supplant the suprapubic operation of coning the mucosa. The application of the spark should not be made in a cloudy field, as in such event it is inexact and dangerous. Growths of an infiltrating character and suspiciously malignant should very promptly be removed by resection through the entire bladder wall at least two centimeters beyond the mass, and when in close proximity to the ureteral orifice should include ureter transplantation. In the case of a very great number of outgrowths in the bladder which, while benign, are, from their very multiplicity, not amenable to the spark treatment, one should not forget that this same treatment may with much effectiveness be directed via the suprapubic opening. It is the author's hope that the employment of the d'Arsonval spark may offer something even of a palliative nature in such cases as appear to be beyond reach.

8. Massive Tuberculosis of the Liver.—D. Felberbaum notes that this condition is usually secondary to intestinal tuberculosis, and reaches the liver by way of the portals. The first step is a tuberculous pylephlebitis and thrombosis of the endohepatic branches, and later on tuberculous granulation tissue is deposited. A number of these granulomata coalesce and form conglomerate tubercles. These deposits are usually multiple and may soften down giving rise to a tuberculous abscess, which may eventually discharge into a bile duct, similarly to a caseous focus in the lung, rupturing into a bronchus. The nodules appear as white masses of various sizes and shapes, surrounded by a thin fibrous capsule. The adjacent liver substance is compressed and may become pigmented. They resemble very much gummata, but may also simulate neoplastic growths, as in the case to be described. The symptomatology is very definite, no case having ever been diagnosticated during life. The liver may be enlarged; tumor masses have been felt during life. Jaundice does not occur. The cases have all been characterized by gradual emaciation, but on the whole, the symptom complex is masked by the primary affection. There are two cases on record in which the process in the liver was apparently primary, no other tuberculous foci being discovered. The disease is slightly more frequent in children, probably on account of the frequency of intestinal tuberculosis. The case reported by the author exemplifies the difficulties of the diagnosis *intra vitam*, especially in that it was considered to be a case of carcinoma of the stomach and liver, tuberculosis not having been suggested as a possible diagnosis by any one of the many who examined the patient during life. Even after the specimens were obtained, the condition was considered by nearly all who saw it as a malignant growth.

9. The Cinematograph in Medical Education.—By R. Matas. (See MEDICAL RECORD, Vol. 81, page 142.)

Journal of the American Medical Association.

September 7, 1912.

1. Scientific Employment of Physical Therapeutics. P. Marvel.
2. Physiological Basis of Thoracic Surgery. J. M. Flint.
3. Acute Poliomyelitis, Transverse Myelitis Type. A. L. Skoog.
4. The Spinal Cord in Pernicious Anemia with the Report of an Interesting Case of Family Involvement. R. N. Willson.
5. Difficult and Dangerous Labors. Selecting the Method of Delivery. H. A. Miller.
6. Cesarean Section. C. A. Stillwagen.
7. Industrial Lead-Poisoning in the Light of Recent Studies. A. Hamilton.
8. Epidemic Poliomyelitis in Norway. Its Etiology and the Possibilities of Its Prevention. F. Harbitz.
9. A Contribution to the Etiology of Poliomyelitis. M. Neustaedter.
10. Medical Sociology in Civic Betterment. O. P. Geier.
11. A Method of Selection of Donor for Blood Transfusion. M. Fishbein.
12. The Palliative Treatment of Terminal Laryngeal Tuberculosis. H. Horn.
13. Immunization in Pneumococcus Infections. E. C. Rosenow.
14. A Home-Made Antiseptic Thermometer Case. J. N. Force.

1. Physical Therapeutics.—By P. Marvel. (See MEDICAL RECORD, Vol. 81, page 1120.)

2. Physiological Basis of Thoracic Surgery.—By J. M. Flint. (See MEDICAL RECORD, Vol. 81, page 1245.)

3. Transverse Myelitis Type of Poliomyelitis.—A. L. Skoog describes the pathological findings at autopsy of a patient dying from acute poliomyelitis of the *foudroyant* type. He notes that the perivascular tissue, which must not be confused with the adventitia, comes first in the frequency and severity of pathological changes. The adventitia is a worthy second and its cells and fibers may be completely disintegrated by the thick invasion of cells. All coats of the veins are frequently involved. The large arteries have only their perivascular structures invaded; the moderate sized ones have the adventitia also invaded, and the small arteries or arterioles may have an infiltration of intima, elastica and muscularis as well as the frequently involved adventitia. It is possible that some of these severely involved vessels have necrosing tunics with resulting thromboses or ruptures of the walls. The author believes that the infiltrating cells give evidence of a defensive process, and all indicate the particular quantitative localization of the virus of acute poliomyelitis in the tissues.

4. Spinal Cord in Pernicious Anemia.—R. N. Willson reports a case of pernicious anemia with marked nerve center involvement and an interesting family history, and describes the complications on the part of the nervous system in this disease. It is well to remember that there are spinal cord and perhaps brain changes in every case of true pernicious anemia and the nervous symptoms may sometimes prevent its prompt recognition. The spinal cord lesions consist of a combined sclerosis of the posterior and lateral columns, the former sometimes being alone affected and producing the clinical picture of tabes. The lateral columns are never involved by themselves. A considerable number of cases have been reported in which the anterior horns were involved, but this is a late development in the disorder. In the case reported there was a very striking clinical indication of a pathological intestinal process dating back to childhood, and it seems evident that this toxemia led up to, if it is not absolutely demonstrated to be the direct cause of, the later symptoms. The family history suggests a possible hereditary luetic influence, since one sister of the mother died in an advanced stage of locomotor ataxia, while two other aunts and the mother herself suffered also from conditions which might have thus originated.

5. Difficult and Dangerous Labors.—H. A. Miller states that the normal progress of labor should be interfered with only when the mother or the child seems to be in danger. Judgment of each individual case should be carefully formed, applying all the known methods for measuring the pelvis, and the size of the child's head, and placing special importance on the possibility of engagement or non-engagement as the result of pressing on the uterus, and using the finger in the vagina, and the paw-like grip over the child's head. Due consideration should be given to the fact that a competent obstetrician has previously had difficulty and has secured a dead child from high application of forceps. As labor progresses, the borderline cases must be so conducted and at such a place as to permit of a cesarean section in preference to an application of high forceps, in case progress is not satisfactory and there seems to be a reason for hastening delivery. These cases should be conducted largely by abdominal palpation, judging of the descent by this method in preference to frequent and, many times, unnecessary vaginal examinations. In the absolute indications for cesarean sections they should preferably be done as soon as the patient fairly enters labor, accepting as evidence of the opening of the os some slight vaginal discharge, or, if necessary, one examination. In the relative indications for cesarean section it should be done prior to the time that the patient shows an unusual degree of exhaustion and preferably prior to the rupture of the membranes. In elderly primiparæ the possibility of a senile uterus must frequently be the determining factor in deciding as to spontaneous delivery, high forceps and cesarean section. High forceps should be applied only in cases in which the surroundings of the patient do not justify an abdominal cesarean and in which the head is floating free from the pelvis. The physician must be prepared to accept an infantile mortality in excess of 15 per cent. with a maternal mortality equal to elective cesarean section, plus a not inconsiderable morbidity. Pubiotomies should be done only when sufficient assistance is at hand to prevent undue separation of the pelvic bones and in cases in which a very slight increase of the conjugata vera is known to be sufficient to permit the passage of a living fetus. Craniotomy has no place in obstetrics on a living child, and the physician should avoid putting himself in the position of having to sacrifice one life to save the other when both should have been saved.

6. Cesarean Section.—C. A. Stillwagen notes that cesarean section may be said to be indicated generally in all cases of maternal or fetal dystocia, in which other methods of delivery are extra-hazardous to either mother or child. Therapeutic abortion is often too lightly undertaken. It is sanctioned by law and medical opinion, but this fact tends to diminish the sense of responsibility and to cause some unjustifiable operations. Craniotomy is rather condemned in a living fetus; it is doubtful whether this procedure is less dangerous than some forms of cesarean section. From a surgical viewpoint, cesarean section would be the quickest, surest and cleanest method of procedure in placenta prævia and is indicated in all cases of central placenta prævia and in the partial type when the child is living and near term, provided adequate surgical skill is available and the patient's condition makes her a fair operative risk. It is also a valuable recourse in eclampsia, emptying the uterus quickly, lowering the blood pressure, improving the chances for the child, etc. It is indicated in primiparæ with rigid cervix or any condition involving delay or unusual trauma to mother or child. The field of cesarean section is widening.

8. Poliomyelitis in Norway.—F. Harbitz points out that poliomyelitis has been recognized in Norway as a distinct disease since 1820, sporadic cases having been reported. Epidemics have occurred in 1858, 1886, 1889, 1903, 1904, 1905, 1906, the earlier ones being local, the later ones extending over wider tracts of country. The Norwegian physicians regard it generally as an acute infectious disease and also contagious, which view is shared by the author, who gives facts supporting his belief. Of great interest are the abortive cases which are found to be just as contagious as the severer ones, and it must be supposed also that the infection can be spread by means of healthy bacteria carriers, which explains the long period of incubation sometimes noted. According to Norwegian experience, the route of entrance is the nose, throat, and alimentary tracts. The degree of infectiousness as a rule is not very great. No evidence has been found that food is a source of infection, nor that there is a coexistent infection of animals. The unexplained points are the prevalence of epidemics in certain years without reference to changed climatic conditions, the greater prevalence in the summer and fall, and in rural districts, and lastly, the varying degree of contagiousness in different epidemics. Notification, isolation, careful disposition of the patient's excretions and secretions, especially from the nose and throat, general disinfection of articles in contact with the patient, particular attention to the lighter abortive cases and possible carriers, and care as to the hygiene of school children, and even the closing of schools, are the precautionary measures that have been taken. As a rule these have been begun too late, but they seem to have helped to limit and stop the disease. The treatment of individual cases has been mainly symptomatic, and possibly of not much avail. Systematic investigation of the disease is now being carried on.

12. Palliative Treatment of Terminal Laryngeal Tuberculosis.—H. Horn recommends as a palliative measure in cases of terminal laryngeal tuberculosis the Hoffman method of injecting the superior laryngeal nerve so as to produce a permanent anesthesia. The emaciation which is usually present makes the procedure generally an easy one. The point of entrance of the nerve through the thyrohyoid membrane can be palpated with exactness. The exact technique of making the injection is as follows: The skin is first prepared by painting the region to be injected with iodine. The left side of the larynx is grasped with the first and second fingers of the right hand, and with the thumb of the same hand the painful point is located. As soon as this spot is found the thumbnail is pressed in to mark the spot and the needle is introduced at this point. The needle is introduced perpendicularly for 1.5 c.m.; then the point is moved in all directions until a sharp pain, radiating to the ear, is felt. From 3 to 5 c.c. of a warm solution of 85 per cent. alcohol are then injected until the pain in the ear disappears. The point of entrance of the nerve will be found just at the upper edge of the thyroid cartilage, about one-third of the distance from its outer edge. In no case has the author had any untoward effects and claims that the procedure is entirely without danger. There is immediate relief from pain as the aspiration of food is seldom observed. The injection can be repeated without danger as often as necessary and the relief lasts from a few hours to forty days. The mental effect on the patient is a very important secondary one. He becomes more cheerful and tries to take food. In three cases the results were negative, and if there was an involvement of the epiglottis, especially on the external surface, it was found that the relief failed or was only partial.

British Medical Journal.

August 31, 1912.

1. The Functional and Histological Effects of Intraneural and Intraganglionic Injections of Alcohol. O. May.
2. Gray Hair Associated with Nerve Lesions. G. L. Cheatle.
3. The Treatment of Tabetic Ataxia. J. G. Garson.
4. A Note on the Morphology of a Strain of Trypanosoma Equiperdum. W. Yorke and B. Blacklock.

1. Intraneural Injections of Alcohol.—O. May concludes that alcohol, injected into the trunk of a peripheral nerve, produces a more or less complete local necrosis of the nerve at the point of injection. The change is not an "ascending" one, the nerve above the point of injection remaining normal; the cells of origin of the fibers may show some degree of chromatolysis, but do not exhibit signs of permanent injury. The conditions produced by such injection are more favorable to regeneration than those resulting from simple section without suture. The anatomical continuity of the nerve trunk favors rapid regeneration, though this is to some extent retarded by the fibrosis which occurs to a greater or less extent in every case of alcohol injection. It is apparently impossible by a single injection of alcohol to produce complete necrosis of the Gasserian ganglion, its dense texture preventing complete infiltration. The alcohol tends to find its way under the sheath of the ganglion towards the proximal root, which is affected to a greater degree than the actual ganglionic.

2. Gray Hair Associated with Nerve Lesions.—G. L. Cheatle notes the following observations that he made on the case of a male patient, aged 36 years, who had subcutaneous neurofibromata growing on the cheek and forehead of the right side, which were noticed about the same time ten years ago, when the hair also began to grow gray. The state of the grayness of hair was as follows: On the mid-orbital maximum point of Henry Head, there was a patch of normal brown color, which appeared as an island in a completely gray V-shaped area behind which, and limited behind by the posterior boundary of the fifth nerve, was an area of scattered gray hairs. There was no disturbance of sensation. Tactile, heat, cold, and pain sensations were normal. The author believes it would be of theoretical and practical interest to discuss the state of grayness of hair, together with the protopathic nerve influence described by Head. The discussion would be very discursive, owing to the fact that one's knowledge is not sufficient to enable one to state what makes hair appear gray. The author believes that the above case illustrates an epithelial change in state, which takes place *pari passu* with a change in the nervous system, and, therefore, probably due to it. Although grayness of hair is of itself an unimportant epithelial change, it appears at a time of life common to another and important epithelial change—namely, cancer. The genesis and etiology of an unimportant change in a tissue may illuminate

MEDICAL RECORD.

A Weekly Journal of Medicine and Surgery.

THOMAS L. STEDMAN, A.M., M.D., EDITOR.

PUBLISHERS

WM. WOOD & CO., 51 FIFTH AVENUE.

See fourth page following reading matter for Rates of Subscription and Information for Contributors and Subscribers.

New York, September 21, 1912.

AUTOINTOXICATION IN THE ARMY.

THE *Journal of the Military Service Institution of the United States* awards annually the so-called Seaman prize for the best essay on a subject selected by the founder of the prize, Major L. L. Seaman, and approved by council. The subject for last year was as follows: "How can autointoxication, that rarely recognized disease which has directly or indirectly caused more invalidism and mortality in modern armies than all other pathogenic causes combined, be prevented?" And the prize was awarded to Captain Nathan S. Jarvis, U. S. Army, whose essay on the subject is published in the July-August number of the journal. The subject selected is one that may cause surprise in the mind of the general reader. That such picked men among young adults of the nation as soldiers must necessarily be are sufferers from autointoxication, especially when it is remembered that their diet is for the most part very simple, may indeed be doubted. And Dr. Jarvis properly states at the very outset of his paper that the premise implied in the subject "may be true as a rash guess, but it cannot be proved by the usual methods of deducing medical statistics." He then gives a historical survey of the theory of autointoxication, and summarizes as well the views of such men as Combe, Vaughan and Novy, Fischer, *et al.*

So far as the army is concerned, Jarvis thinks that careful attention to the treatment of slight as well as severe intestinal disease should be insisted upon, because such conditions invite the absorption of poisons from the digestive tract. So far as the diet is concerned, he thinks that that of the American soldier compares favorably with the diet of other armies. However, boiling or cooking all food is advised so as to insure against chance infection and especially the use of such beverage as weak tea instead of water. Jarvis warns against the dangers of canned provisions, which are safe enough if properly prepared before canning and cooked immediately after being removed from the can, but are a source of various morbid conditions if carelessly packed or kept some time in unsealed receptacles. Of the direct methods of fighting autointoxication Jarvis mentions the usual intestinal antiseptics and the mechanical measures calculated to clear the intestines of putrefactive material or diminish the activity of certain microorganisms.

In acknowledging the careful work of the author in summarizing what is known about autointoxication, we think that the subject, selected presumably as of interest to the great body of army medical men, was a very unfortunate one. This subject has given rise to a prolixity of quasi-scientific literature in the general medical press, has been exploited by promoters of various drugs, modified foods, drugless methods of treatment, etc., until the laity and not a few medical men have been misled into thinking that autointoxication is a clear and easily diagnosed condition, instead of an obscure entity, the very existence of which has been doubted, and proofs of which so far brought forth are certainly not entirely satisfactory. Much loose thinking and purposeless treatment has resulted to the detriment of the profession and patients as well.

The subject needs the light of careful clinical observation and unbiased laboratory work, but such work in the study of autointoxication cannot be done in the army, where the material is least favorable for the development of the condition. We call attention with great pleasure to the much more promising subject for the next award of the prize, the full wording being as follows: How can the Medical Departments of the Army, Navy, and Public Health Service be best utilized for research work in connection with a department of public health? This subject is of more than mere local importance for the army and navy, and the paper awarded the prize will be awaited with interest by the general medical public.

THE TREATMENT OF TETANUS WITH CARBOLIC ACID.

THE enthusiasm which followed the remarkable results obtained by the use of diphtheria antitoxin led the medical profession to believe that in serotherapy was to be found all the promise of future success in the treatment of infectious disease; drugs and other non-biological methods of treatment were for a time scorned by the laboratory enthusiasts. However, it was soon shown that what was possible in diphtheria could not be duplicated in other infections, the mortality of which was not at all affected by various antitoxins however prepared. Vaccines were then brought forward, still in the enthusiastic preference of biological methods of treatment, and for a time these were hailed as the real deliverers of suffering mankind. At the present time, however, the general consensus of opinion is that vaccines hold a subordinate, though quite an actual, place in the therapy of infections. They may be fraught with great possibilities, but our methods of using them have so far given but very modest results.

The enthusiasm over serotherapy was best shown by the great hopes which greeted the production of tetanus antitoxin. For a time it seemed as if this dread disease was to be made quite innocuous, provided antitoxin was used. But soon enough it was shown that, however great its prophylactic value, the tetanus antitoxin possessed no curative value whatever. Now and then a patient treated with it recovered, but usually the case was one of mild

nature with a long period of incubation. The best test of antitoxin was made by the Russians during the late war with Japan, and both the published and private opinions of Russian military surgeons have completely denied it any therapeutic virtue.

Meanwhile, the Italians have been using a very simple method of treatment suggested years ago by Baccelli, and have finally succeeded in attracting the attention elsewhere by the remarkable results obtained. Baccelli's treatment consists in subcutaneous injections of carbolic acid in 3 per cent. dilution, given frequently enough to make the total quantity of pure phenol injected daily equal to from 0.3 to 0.5 c.c. (5 to 7.5 grains). Imperiali, writing in 1910, gives the results obtained in a sufficient number of cases to exclude merely chance results. Of fifteen patients with the foudroyant form of tetanus, only one patient recovered (mortality, 93.3 per cent.); of thirty-nine patients with a very severe form of the disease, twenty-two recovered and seventeen died (mortality, 43.5 per cent.); of ninety-four cases with the usual severe form of the disease, ninety-two recovered and only two died (mortality, 2.12 per cent.). Richter gives the average mortality, with the usual methods of treatment, as 88 per cent.; during the Civil War the mortality among the Federal troops was 92.56 per cent.; and Behring himself grants that the mortality of those treated with antitoxin reached 88 per cent. In a later paper Baccelli gathers one hundred and ninety cases treated by his method, and states that the mortality in these was 17.36 per cent., a figure that about equals the percentage of recoveries among the cases treated with antitoxin and other methods.

The above résumé is gleaned from a paper in the *Russkii Vratch* (Vol. XI, No. 28) by N. A. Goulyaeff, who had gone through the enthusiasm over the use of antitoxin and the subsequent disappointment. Lately, he had a chance to treat two very severe cases of tetanus by the Baccelli method, and to his great surprise both recovered. The first one had an incubation of eight or ten days, and when brought to the hospital was suffering from severe muscular spasms, frequently involving the respiratory muscles. Goulyaeff used 14.5 c.c. of pure phenol in the course of about five weeks in treating this patient, and is convinced that the drug has some actual quantitative relation to the amount of toxin present, for the diminution in the daily quantity injected was several times followed by an increase in the tetanic spasms. The second case was one of "cephalic tetanus" appearing after an incubation of six days. This variety of tetanus has frequently given 100 per cent. mortality. Goulyaeff's patient received 5.4 c.c. of phenol in two weeks and recovered completely. In neither case were any untoward effects noted from the administration of carbolic acid; the urine was carefully followed to note any such effects.

In America the saner methods of celebrating Independence Day have resulted in a marked diminution of cases of tetanus. However, such cases occur not infrequently in every large hospital and in the practice of most surgeons, and Baccelli's method of treatment should certainly be again tried. Not the least thing in its favor is its utter simplicity, which permits its use amid the most inadequate surroundings of any practice.

STATE MEDICAL SERVICE IN GREAT BRITAIN.

In various discussions of the new British insurance scheme it has been pointed out that it is not the principle of the bill to which the medical men of England object, but the obviously unfair manner in which Mr. Lloyd George has proposed to deal with the profession. The pay offered physicians of Great Britain under the insurance scheme was inadequate, and moreover they would be placed in the hands of the approved societies. Nearly all, however, laymen and medical men, are agreed that the objects of the bill are sound and that eventually England must adopt a scheme of this nature. Therefore when it was decided at the recent meeting of the British Medical Association to oppose the bill in its present form, the conclusion was also reached that to be consistent medical men themselves must bring forward an alternative scheme. Otherwise, the supporters of the measure would say, "you have wrecked a plan the principle of which you approve, and have not suggested anything in its place; consequently you must have taken this course impelled by merely selfish motives."

Fortunately, an alternative scheme was proposed at the meeting just over, and from a perusal of the same it appears to be, in its main features, both feasible and reasonable. Dr. Rentoul of Liverpool read a paper at the meeting referred to in which he stated his views as to the initiation of a State medical service. He is one of those who hold that the medical profession is now pledged to the formation of some such service and points out that nationalization of medicine in Great Britain is not so far off as some think. The thin edge of the wedge has been inserted already, for the State now appoints many official physicians, the number of which is increasing daily. Rentoul suggests as the chief points bearing upon a public health service the following: (1) That the insurance committees receive from the Insurance Commissioners a sum of money equal to about $1.50 per insured person per annum, this to be handed quarterly to the doctor of the insured person. (2) That the Insurance Commissioners give 60 cents per annum per member to the doctor or druggist, who agrees to supply the insured person with medicine. Thus 60 cents plus $1.50 would be the minimum sum asked for by the British Medical Association. (3) In order to meet Mr. Lloyd George's objection that he cannot or will not grant the amount asked for per member per annum, Rentoul would suggest that each insured person pay a yearly sum of $1.25, or about two cents weekly, to the doctor. In other words, that they pay the amount the better class friendly societies now pay their doctors. These three sums of $1.50, 60 cents, and $1.25 would, with 14,000,000 insured persons, give the doctors an annual income of about $2,360 each, exclusive of confinements, vaccinations, notifications, operations, sanatoria,

etc., these probably totaling from $250 to $500 each doctor yearly.

Rentoul contends that medical men at the present time give more in charity, principally in gratuitous services, than do the members of any other profession or trade, and that it is time that the public cease to impose upon them. He characterizes as brazen effrontery the suggestion of the Chancellor of the Exchequer that the present income of medical men in Great Britain should be further reduced yearly by $14,000,000. He is also of the opinion that an eight hundred dollar income limit should be adopted, with a sliding scale of income at, say, $300, $400, $500, and $800, the yearly contribution by the insured person to vary with the income.

Attention may be drawn to the fact that German practitioners under their insurance scheme get more by far than is proposed by the British Medical Association. At Leipzig, medical men have been granted $3.75 per annum, while the average German allowance for drugs is about 94 cents. Some form of insurance is sure to come in every European country, and the formation of a National State Medical Service as suggested by Rentoul appears to fit in with the tendency of the times. Conditions in this country so far as the medical profession is concerned are not too rosy. In all the big cities societies and lodges are increasing, and the physician's income is at the same time decreasing. It may not be long ere a scheme for State insurance or nationalization is mooted here, and therefore it is well that physicians of this country should watch the course of events in Europe and endeavor to profit by experience gained there.

INTESTINAL INFANTILISM.

The late Dr. Herter of New York published a small monograph on what he termed "Intestinal Infantilism," which affection he attributed in some manner to the persistence of the intestinal bacterial flora of the nursling period. At a later period Prof. Heubner, who recognized the clinical entity, assigned as its cause a congenital intestinal insufficiency, the presence of the flora thus becoming, we suppose, the effect and not the cause of the condition.

At a recent session of the Charité Hospital Physicians of Berlin (*Berliner klinische Wochenschrift*, August 19) Eckert presented two patients with this form of infantilism. There was a uniform arrest of development dating from an early period of childhood. One child aged 11 years appeared to be seven years younger. The individual finds were numerous and complex. Failure to improve under pancreas therapy seemed to show that the condition was not akin to Bramwell's pancreatic infantilism. Thyroidin was then exhibited with brilliant results as far as amelioration of the symptoms was concerned. Whether the children will start to regain their growth cannot yet be foreshadowed, as the observation period is too brief.

The most striking improvement was seen in the locomotive system. The youngest child, but four years old, had been extremely backward in walking and speech, although there was no actual mental defect. Under thyroidin she began to improve rapidly and was soon running about and talking. As Herter showed, this form of infantilism is attended by severe chronic diarrhea, and this condition responded in part to the treatment.

Viereck's new diagnostic method, based on testing the chromaffin system, was practised. Glucose and adrenalin given simultaneously produced glycosuria, showing abnormal tonus of the sympathetic nerves. Atropin caused tachycardia, pilocarpin was inert. The stigmata of the exudative diathesis and lymphatism were wholly wanting.

The pancreas was plainly in abeyance as hardly any trypsin was poured into the intestine. The author believes that that organ was stimulated indirectly through the thyroid. The thyroid of the patients could not be felt. The infantilism was certainly not myxedematous, although there were a few symptoms in common with myxedema, such as the scanty dry hair.

PARADOXICAL DIPHTHERIA.

The abnormal course sometimes pursued by individual and family diphtheria was no doubt largely responsible for some of the antagonism shown toward serotherapy, both when the latter was first introduced and also subsequently. We can comprehend this antagonism to-day when the position of serotherapy has become fixed in certain episodes which are reported from time to time. Thus Jess, before the Medical Society of Kiel last June (*Münchener medizinische Wochenschrift*, August 20), stated that he attended a child with lacunar tonsillitis as the clinical diagnosis, the bacteriological examination being negative. Two days later a second child was attacked with clinical diphtheria as the diagnosis aand both children were given serum without waiting for the bacteriological diagnosis, which was later positive for the second child. Both children promptly and uneventfully recovered as far as diphtheria was concerned, but both developed serum disease after recovery, which also ended uneventfully. About one year later, corresponding to the annual recurrence of anginous affections, one of the children again developed what was clinically a lacunar angina without any marked systemic reaction. The condition was persistent and examination showed diphtheria bacilli in pure culture. Fear of anaphylaxis prevented serum injection. The tonsillar patches persisted under vigorous local treatment for several weeks, finally becoming sterile as to diphtheria germs. The sister received no prophylactic injection for fear of anaphylaxis, but contracted nothing. The patient during the more than five weeks of diphtheria had shown only a slight evening rise of temperature as evidence of toxemia. The author also knew of a similar episode and the sole way of explaining these second attacks is that ordinarily both the first attack and the serum injections would have secured a considerable period of immunity, but in these cases neither afforded any protection worth mentioning.

BOTRYOMYCOSIS.

The peculiar raspberry-like formations which sometimes follow wounds of the hands and other exposed localities have probably been regarded by the laity and family practitioner as nothing more

than a special form of "proud flesh." They have also been seen in the horse, and at one period were believed to have been caused by inoculation with an unknown parasite. Inferentially the same causation was attributed to the human form. The attempt to introduce the term botryomycosis into familiar use seems, however, to have been attended with failure. The Germans prefer the term pyogenic or telangiectatic granuloma, and despite the peculiar clinical form the consensus of opinion has attributed the lesion to some unexplained activity of ordinary pyogenic cocci. The most peculiar feature of this lesion, however, is its tendency to recur when removed. At a recent meeting of the Kiel Medical Society (*Berliner klinische Wochenschrift*, August 12) Konjetzny was able to demonstrate two cases of this affection. He was unable to point to any new causal agent to explain its nature, but his histological studies led him to believe that these formations are tumors and not mere granulomata. The abundant new formation of blood vessels and the coincident occurrence of sarcoma-like tissue would apparently show the presence of a proliferating angioma or angiosarcoma. It may have been more than a coincidence that one of these growths developed on the site of a minute vascular birthmark. These tumors of traumatic origin may also have affinities with keloid formations.

News of the Week.

Yellow Fever in Mexico.—A recent report states that yellow fever has been present in Mexico since August 1, 1911. During that time sixty-eight cases with thirty-two deaths were reported in Merida. In San Juan Bautista, in the State of Tabasco, there were between May 4 and August 10 of this year a total of fifty-three cases of the disease with twenty-two deaths. The disease is now reported to be epidemic in Frontera, a port fifty-five miles from San Juan Bautista, having been carried from the latter place by troops transferred to Frontera, and Acting Assistant Surgeon J. F. Eaves has been assigned to temporary duty in the American Consulate at Frontera for the purpose of fumigating vessels and performing other necessary quarantine work on vessels prior to their departure for ports in this country. The disease has also been epidemic during the summer in Chile, and cases have occurred in Brazil, Colombia, Ecuador, and Venezuela. Investigation has shown that in certain localities of South America and on the west coast of Africa, and in Central America and southern Mexico yellow fever is endemic and has become a disease of childhood, the adult natives possessing immunity acquired by infection in early life. These endemic foci are a constant menace to all ports having commercial relations with them.

Smallpox in Pennsylvania.—During the week ending September 13 sixteen deaths from smallpox occurred in Pittsburgh, and on that day thirteen new cases were reported, making a total of 178 cases then in the city. Hundreds of persons are leaving the town, and in some quarters where the streets are roped off and quarantine lines are maintained by mounted police the inhabitants are in a state of panic. City physicians are vaccinating all of the school children, the members of the police force have also been vaccinated, and the street car company has ordered the vaccination of its motormen and conductors. The Health Director of the city is one of those who has contracted the disease. An epidemic of smallpox has also broken out in Carbondale, Pa., more than fifty cases having been reported. The Pennsylvania State Department of Health has taken charge of the situation.

Typhoid Fever at Allentown.—Upward of twenty-five cases of typhoid fever, with at least two deaths, have appeared within a short time in a newly annexed portion of Allentown, Pa. At first it was thought the water supply was at fault, but investigation disclosed the fact that almost all of those attacked received milk from one original source of supply.

Polluted Oysters.—The menace of oysters infected with typhoid germs is the subject of a report recently issued by the United States Department of Agriculture as the result of an investigation into an epidemic of typhoid fever occurring in Goshen, N. Y., in October, 1911. The source of infection in this instance was traced to oysters from Jamaica Bay, the investigator declaring that millions of gallons of sewage were discharged daily into the bay, around and even directly over the oyster beds. The Sanitary Superintendent of New York, however, states that there is no danger of another outbreak, and that, as a matter of fact, the oysters became contaminated, not in the bay itself, but in the freshening grounds further back in the meadows. Following an inspection of the oyster beds made by the New York Department of Health last spring, the small sewers polluting the freshening grounds were destroyed as much as possible. Examination of the water in the bay, it is alleged, shows that there is no danger of contamination because of the immense volume of water and the strong tides. This statement one may be permitted to doubt.

Liner Brings Smallpox.—The Italian SS. *America*, which arrived in New York on September 11 from Naples, was detained at Quarantine because of the presence of a case of virulent smallpox on board. The patient was removed to Hoffman Island together with 574 of the steerage passengers and crew with whom he had come in contact, and the other passengers after vaccination were allowed to land.

Deaths in New York.—During the week ending September 7 there were 1,229 deaths in New York City, the death rate per thousand being 12.39, as compared with 13.24 for the same week of last year, when the total number of deaths was 1,265. Of infants under one year of age there were 319 deaths, 50 less than during the preceding week.

Medical Examinations.—The State Board of Medical Examiners of California announces that of the 200 physicians who took the recent examinations, over 80 per cent. had passed successfully and had been granted licenses to practise.

Deaths of Aviators.—On September 11 Lieut. Siebert, an aerial scout in the German Army maneuvers, was killed by the fall of his aeroplane and his companion was seriously injured. This was the sixth fatal accident in six days among army aviators alone.

Infantile Paralysis.—Reports from Buffalo state that up to September 9 there had occurred in that city within the last few months 220 cases of infantile paralysis, with twenty-six deaths and permanent crippling in 60 per cent. of the survivors. Four new cases were reported on September 8. The disease has also been epidemic in Southern California, and from June 8 to August 17, a total

of 226 cases were reported in Los Angeles, with forty-three deaths.

"Open Window" Class.—In Montclair, N. J., where one of the first open-air schools for delicate children was opened, an "open window" class has been started in the Hillside Grammar School, to be followed by other classes of the same sort as seems desirable.

Radium Supply.—On behalf of the Bank of Radium of Paris and of Madame Curie, arrangements have been made for the purchase of property in Meeker, Col., containing the largest carnotite deposits in this country. The property is being acquired in the hope that radium will be found in sufficient quantities to permit of greater researches by the French scientists. In addition to radium carnotite, which was named in honor of President Carnot of France, contains radium salts, uranium, and vanadium.

Health Department Needs.—The New York City Department of Health has submitted to the Board of Estimate a request for an appropriation for the year 1913 of $4,510,308.25, which is an increase of $1,367,921 or 43.5 per cent. over the amount allowed for the current year. A considerable part of the increase is desired for raising some existing salaries and providing salaries for positions to be created.

For Health Conservation.—At a meeting of prominent Democrats held in the Colony Club, New York, on September 9, a bureau of health conservation in the interest of pure food and the consequent maintenance and improvement of health was formed, with the following officers: *President,* Dr. Harvey W. Wiley of Washington; *Vice-President,* Prof. Irving Fisher of New Haven; *Secretary,* Mrs. J. Borden Harriman of New York; *Permanent Committee,* Dr. J. N. McCormack, Bowling Green, Ky., representing the American Medical Association; Major W. O. Owen of Washington; Dr. Richard C. Newton of Montclair, N. J., and Dr. E. R. L. Gould and Dr. Thomas Darlington of New York. The formation of the bureau is a consequence of the health plank in the Democratic platform.

Gifts to Charities.—By the will of the late John Henry Schaefer of New York the Presbyterian and the German Hospitals of this city receive each a bequest of $10,000.

By the will of the late Mrs. Ida A. Whitman of Philadelphia contingent bequests of $5,000 each are made to the Presbyterian Hospital and the Episcopal Hospital to endow free beds in memory of her husband and a similar bequest of $2,500 to the Children's Hospital.

By the will of the late John G. Hees of Philadelphia the sum of $1,000 is bequeathed to the German Hospital.

By the will of the late Robert Wolf of Philadelphia the sum of $100 is bequeathed to the Jewish Hospital Association.

Fordham Faculty Dinner.—On Thursday evening of last week the Medical Faculty of Fordham University gave a dinner at the Hotel Astor in honor of the foreign lecturers in the International Extension Course on diseases of the nervous system which is being held this month. The guests of honor were Dr. Henry Head and Dr. Gordon Holmes of London and Dr. Nicolas Achucarro of Madrid. Drs. Alwyn Knauer of Munich and Carl Jung of Zurich, the other foreign lecturers in the course, were absent, having not yet arrived from Europe. Among the other guests were many of the most eminent neurologists of the country. The Rev. Dr. Thomas J. McClusky, President of Fordham University, presided, and Dr. James J. Walsh, Dean of the Medical Faculty, acted as toast-master. The speakers were Father McClusky, Father Hanselman, Provincial of the Society of Jesus; Dr. Henry Head, Dr. M. Allen Starr, Dr. Sears of the University of Vermont, Dr. M. J. Lewi, Judge O'Sullivan, and Paul Fuller, Esq., Dean of the Faculty of Law of Fordham University. The keynote of the addresses was internationalism in medical study as exemplified in the international extension course, which had been initiated somewhat in the nature of an experiment and which had from the first proved to be an unqualified success both in attendance and in the interest of the lectures. At the close of the speaking Dr. Maloney, to whom credit was given for originating the course, announced that the next series of lectures would be on the diseases of metabolism.

Clinical Physiology.—The Department of Physiology of the College of Physicians and Surgeons, New York, offers to practitioners in medicine a course in Clinical Physiology, which deals with the application of physiological principles and methods to problems of practical medicine. The course, which consists of fifteen weekly exercises, will be given by Dr. R. Burton-Opitz, Dr. F. H. Pike, Dr. Haven Emerson, and Dr. H. B. Williams, on Thursday afternoons from 3 to 5 o'clock, at the college, 437 West 59th street, beginning October 3. The fee for the course is $15, with a matriculation fee of $5 in addition. Applications may be made to Prof. Frederic S. Lee at the College of Physicians and Surgeons.

Mississippi Valley Medical Association.—The thirty-eighth annual meeting of this association will be held at the Hotel Sherman, Chicago, Ill., on October 22, 23, and 24, 1912, under the presidency of Dr. Louis Frank of Louisville, Ky. The orations in medicine and surgery will be delivered by Dr. C. G. Stockton of Buffalo, and Dr. George W. Crile of Cleveland. Details may be obtained from the secretary of the association, Dr. Henry Enos Tuley, Third street Annex, Weissinger-Gaulbert, Louisville, Ky.

Washington State Homeopathic Medical Society.—At the annual convention held in Tacoma on August 30 and 31, the following officers were elected: *President,* Dr. George H. Dow, Chehalis; *Vice-Presidents,* Dr. C. P. Bryant, Seattle, and Dr. E. F. Larkin, Bellingham; *Secretary,* Dr. George Walter Beeler, Seattle; *Treasurer,* Dr. Thomas J. Appleton, Seattle. The next annual meeting will be held in Seattle.

International Congress of Gynecology and Obstetrics.—This Congress, which has just closed its sessions in Berlin, elected Dr. J. Riddle Goffe of this city president, and voted to hold the next meeting in New York City in September, 1915. Among other Americans who attended the Berlin Congress and read papers were Dr. Parker Davis of Philadelphia and Dr. Hermann Boldt and Dr. Arthur Stein of New York.

Publications of the Tropical Diseases Bureau.—In November the Tropical Diseases Bureau, which replaced the Sleeping Sickness Bureau on July 1, will commence the publication of the *Tropical Diseases Bulletin* under the general editorship of the director, Dr. A. G. Bagshawe. Each number will consist of about fifty pages containing

classified summaries of the current literature of the tropical diseases; they will appear, as a rule, twice a month. The annual subscription price will be one guinea, post free. The publishers will be the Messrs. Baillière, Tindall & Co. of London. The tropical diseases of animals will be treated in a separate publication, the *Tropical Veterinary Bulletin*. This will appear quarterly from October and will be in charge of Mr. A. Leslie Sheather of the Royal Veterinary College, London.

Honorary Degrees Conferred by Fordham University.—The extension course for practising physicians in the study of nervous and mental diseases was opened at the Fordham University Medical College on September 9, to last for three weeks, women being admitted to the lectures for the first time, it is said, in the history of a Jesuit institution. Over a hundred and fifty physicians attended the opening. On September 11 the university conferred the honorary degree of LL.D. on Drs. Henry Head of London, Carl Jung of the University of Zurich, Nicolas Achucarro of Madrid, and Horatio Robinson Stover of Newport, R. I. Dr. Gordon Holmes of London was made a doctor of science. The new Fordham Clinic, the building and equipment of which have cost over $200,000, was also opened recently.

The Association of Life Insurance Medical Directors.—The twenty-third annual meeting of this Association will be held in New York City on Wednesday and Thursday, October 9 and 10 in the Board Room of the Mutual Life Building, 34 Nassau street. The following papers will be read: President's address, "Some Studies in Family History," by Brandreth Symonds, M.D., Chief Medical Director The Mutual Life Insurance Company of New York; "Further Report on Blood Pressure," by John W. Fisher, M.D., Medical Director the Northwestern Mutual Life, Milwaukee, Wis.; "Selection of Female Risks in Whom Hysterectomy and Ovariotomy Have Been Performed," by P. H. Ingalls, M.D., Assistant Medical Director the Ætna Life Insurance Company, Hartford, Conn.; "The Significance of Some Urinary Constituents," by J. Bergen Ogden, M.D., Assistant Medical Director the Metropolitan Life Insurance Company, New York City; "A Study of Chest and Abdominal Measurements in Relation to Build," by Faneuil S. Weisse, M.D., Medical Director the Mutual Life Insurance Company of New York. The annual dinner of the association will be held on Wednesday, October 9, at 6.30 P.M., at the University Club, Fifth avenue and 54th street, New York City. Further information regarding the meeting can be obtained from the secretary, Dr. William Evelyn Porter, 34 Nassau street, New York.

Obituary Notes.—Dr. George H. Cocks of New York, a graduate of the Bellevue Hospital Medical College, New York, in 1882, a member of the American Medical Association, the New York State and County Medical Societies, the Academy of Medicine, and the New York Ophthalmological Society, assistant surgeon to the New York Eye and Ear Infirmary, and ophthalmologist to the Institute of Mercy, died at his summer home in Pleasantville, N. Y., on September 8, aged 51 years.

Dr. Horace Lewars died in the German Hospital at Philadelphia on August 26 as a result of uremia and paralysis at the age of 44 years. He was graduated from the medical department of the University of Pennsylvania in the class of 1890. He was a retired officer of the First Regiment National Guard of Pennsylvania and during the Spanish-American War he took an active part in caring for the men when typhoid fever broke out in the camp at Chickamauga. He was a member of the Philadelphia Obstetrical Society.

Dr. William Dan Lamb of Lawrence, Mass., a graduate of Jefferson Medical College in 1846, died at his home on August 25, aged 88 years. He was closely identified with the early history of his native town, and served as an army surgeon during the Civil War.

Dr. Edouard Napoleon Fugere of McGregorville, N. H., a graduate of Laval University, Montreal, died on August 30, aged 49 years. He was a member of the medical staff of Nôtre Dame de Lourdes Hospital.

Dr. William T. Klein of New York, a graduate of the College of Physicians and Surgeons, New York, in 1895, and a member of the National Society for the Prevention of Tuberculosis and the Greater New York Medical Association, died at Sea Cliff, L. I., on September 7, aged 37 years.

Dr. Frank Edward Lewis of Albany, N. Y., a graduate of the Cleveland University of Medicine and Surgery in 1886, a member and vice-president of the New York State Homeopathic Medical Society, and attending physician to the Homeopathic Hospital of Albany, died at his home on September 10, after a long illness, aged 57 years.

Dr. Henry Strong Denison of Denver, Col., a graduate of the Johns Hopkins Medical School, Baltimore, in 1908, a member of the American Medical Association and of the Colorado State and Denver County Medical Societies, died suddenly at his home on August 28, aged 28 years.

Correspondence.

ANOPHELINES IN THE PHILIPPINE ISLANDS.

To the Editor of the Medical Record:

Sir:—May I venture to call the attention of your readers to an error in your Philippine letter dated June 14 in regard to the anophelines in the Philippine Islands? The writer says: "In view of the fact that no anophelines, even after most diligent search, have been found anywhere in the Philippine Islands (with the possible exception of one single specimen which is alleged to have come from the Philippines, and which is now in Washington)," etc.

I do not know where the writer got his information, but there could hardly be a greater misstatement. The anophelines are widespread and numerous throughout the islands, and include *Anopheles formosus* (Ludlow); *Myzomyia funesta* (Giles); *M. indefinita* (Ludlow); *M. ludlowii* (Theobald); *M. rossii* (Giles); *M. thorntonii* (Ludlow); *Stethomyia pallida* (Ludlow); *Myzorrhynchus barbirostris* (Van der Wulp); *M. pseudobarbirostris* (Ludlow); *M. sinensis* (Wiedemann); *M. vanus* (Walker); *Nyssorhynchus flava* (Ludlow); *N. fuliginosus* (Giles); *N. philippinensis* (Ludlow); *N. stephensi* (Liston); *N. theobaldi* (Giles); *Calvertina lineatus* (Ludlow).

The nomenclature is according to Theobald. In the eleven years I have been connected with the mosquito work for the Medical Corps, U. S. Army, I have handled thousands of anophelines from the Philippines, but *M. rossii* is one of those rarely sent in. There can hardly be said to be a

dearth of anophelines in the Philippines as a whole, but there are a few localities where they are seldom taken.

C. S. Ludlow.

Army Medical Museum and Library, Washington, D. C.

OUR LONDON LETTER.

(From Our Regular Correspondent.)

COST OF HOSPITALS—TROPICAL MEDICINE—THE AUSTRALIAN INSTITUTE—GOVERNMENT'S EXPEDITION TO THE NORTH—VITAL STATISTICS; LONDON RATES, RURAL RATES (ESSEX)—WOMEN'S CORPS CAMPING OUT—INSURANCE, MORE RESIGNATIONS—EXHIBITION—OBITUARY.

London, August 30, 1912.

Renewed attention has of late been directed to the cost of our London hospitals. On Tuesday the authorities of King Edwards Fund contributed some statistics of the expenditure in 1911, amplifying its annual report issued in April. There are 107 institutions connected with the fund, of which 17 are general hospitals, with an average of 100 beds in daily occupation and 15 with a lower average. The others are special: 4 for consumption, 5 for women, 6 for children, 3 epilepsy and paralysis, 5 ophthalmic, 12 cottage, 8 lying-in, and 32 unclassified. There were increases in the cost per bed and among out-patients amounting in 1911 to £9,600, against which it is stated must be set off economies of about £47,000 per annum effected since the first issue of the reports in 1904. It is said three factors tend to increase the expenditure: (1) tendency toward costly special treatments resulting from developments of medical science; (2) rise in prices; (3) danger lest success in effecting economies lead to slackness in the constant effort needed to maintain them.

It is important that where increase has occurred the committees should ascertain whether it has been unavoidable or due to preventable causes, particularly when the increase exceeds the average of similar hospitals. In the large general hospitals the increases occur under surgery and dispensary as well as maintenance (salaries and wages). In children's hospitals the increase in average cost is much heavier and more generally distributed over the different items of expenditure.

The Australian Institute of Tropical Medicine is making great progress. The Commonwealth Government has granted additional endowments to provide for extension of the work. From there new laboratories and special wards in the Townsville hospital are being erected. The universities of Sydney, Melbourne, Adelaide, and Brisbane will grant diplomas on the subject, leaving the teaching to the Institute. The Government will appoint representatives to control the arrangements jointly with the universities. The Institute has appointed Dr. Henry Priestley and Dr. Nicoll on the staff.

The report of the Australian Commonwealth's expedition to the Northern Territory to investigate tropical diseases shows that the occupation of the district by whites is mainly a medical problem. A fourth of the mortality is due to malaria. There are deaths from dysentery almost every year, besides epidemics which sometimes break out. Beriberi, ankylostomiasis, yaws, trachoma, and leprosy are also known, but generally have been so far sporadic. An important statement is that residents who live a reasonable life, taking adequate exercise and the precautions adapted to a tropical country, enjoy good health. Up to the present there is no evidence of the influence of the climate on the third generation, though it perhaps may have to be taken into consideration in the future. Dr. Breinl describes life on the stations as ideal with regard to health—an active outdoor life in the comparatively cool and dry winter experienced on the tablelands. But alcoholism is an enemy as much as malaria. The prominent lesson of the expedition is the necessity of skilled medical help. No precautions seem to have been in force in the mining settlements to restrain the spread of malaria or indeed any other condition. But the extirpation of malaria is not the only problem. The Territory is said to be exposed to infection from China and the Dutch Indies, and the sanitary conditions such that if once introduced tropical diseases would most likely assume an epidemic form. It is accordingly recommended that those diseases should be studied on the better known islands with a view of quarantine legislation. The necessity of this is indicated by the fact that one or two species of mosquitos known to abound in the Malay States have already been detected in the Northern Territory, showing that invasion from the East has actually taken place.

The facts mentioned in my last respecting the low birth-rate have since been illustrated and enforced by the return on Wednesday of the births and deaths during April, May, and June. In that quarter the births in England and Wales corresponded to a rate of 23.9 per 1000, which was 3.7 below the mean in the ten preceding second quarters and the lowest recorded in any second quarter. The natural increase of population by excess of births over deaths was 102,302, against 111,987, 119,154, and 105,812 in the second quarters of 1909, 1910, and 1911, respectively.

The deaths were equal to an annual rate of 12.7, or 1.7 below the mean in the ten preceding corresponding periods, and the lowest death rate recorded in corresponding quarters. London's rate was 12.4. The infantile mortality was at a rate of 89 per 1000 births, being 14 below the average in ten corresponding previous periods and the lowest on record. The deaths from epidemic diseases in the quarter totaled 8884.

Taking this closing month of August by itself, although it has been the wettest and coldest on record, still more favorable figures are reported and that especially in regard to infantile mortality, the difference between this year and last being chiefly due to the diminution of diarrhea, which is usually so excessive in summer. Many hundreds of children unquestionably owe their survival to the almost complete absence of summer heat, which so many of their seniors are lamenting.

Dr. J. C. Thresh, Medical Health Officer for Essex, has just issued his report for 1911, in which he touches on some of the above-mentioned facts, but in regard to his own district, one of the healthiest counties in the kingdom. The rural birth rate is there also falling and he says should have the attention of the State. He holds it to be affected by the dearth of good cottages and thinks owners might build them to return fair interest. But he admits that management and repairs may swallow up the returns, and the work should be done by public authorities.

Dr. Thresh reports that in his county the deaths from consumption are decreasing, but from cancer they have been continually on the increase and are now actually more numerous than from phthisis.

The Women's Sick and Wounded Convoy Corps

was founded about three years ago to provide efficient training for service in voluntary aid detachments in conformity with the requirements of the Red Cross Society. The training is based upon the R.A.M.C. system. The corps has gone into camp under its commandant-in-chief, Mrs. St. Clair Stobart, and in spite of the most adverse weather the members have carried out their duties with energy and even enthusiasm. Commandant Stobart requires the strictest discipline, and the daily program this week is exacting from reveille at 6 A.M. to "lights out" at 10:15 P.M. Night watches are kept from 10 to 2 A.M. and 2 to 6 A.M. The work of the camping out is no pretense. Everything is done by the members of the corps, even the pitching and striking of the tents and the digging of the camp fire trenches.

Another resignation from the Advisory Committee appointed under the National Insurance Act has taken place, that of Dr. Herbert Jones, Medical Health Officer for Herefordshire, one of the fourteen medical members who refused to resign at the request of the British Medical Association, declaring that they considered their duty "for the present" was to remain on the committee.

The medical staff of the Swansea Hospital informed the Board on Wednesday that they will be unable to give their services to persons insured under the Act when the medical benefit comes into operation except in cases of urgent necessity. Dr. Knight, on behalf of the staff, explained that these cases were accidents or serious diseases. Their only contention was with the Government which sought to impose on them heavy duties on impossible terms. It was said to concede their demands the Chancellor would have to find more than three millions, but Dr. Knight asked what would it cost to pay for the services now given gratuitously? He calculated in that hospital the surgical operations performed in a year, at five guineas each, would cost ten thousand, and that had hitherto been done gratuitously. The Board decided to hold a special meeting to discuss the matter.

An exhibition of modern appliances for the treatment of tuberculosis has been opened this week and will remain open for some time. It was organized by the Society of Medical Officers of Health and seems likely to succeed. Demonstrations and lectures are to be given at intervals. Hygienic measures, in relation to cookery, disinfection, open air shelters, are largely represented.

Mr. Clinton T. Dent, vice-president of the Royal College of Surgeons, senior surgeon to St. George's Hospital and chief surgeon to the London police, died on the 26th inst, aged 61 years. He took the M.R.C.S. in 1875 and proceeded to the fellowship two years afterward. He lectured in the school of St. George's when elected on the hospital staff, first on physiology, then on surgery. He became a member of several societies, contributing papers to them and to the journals. He was elected to the council of the college and in due course on the Court of Examiners. He also served for some time as examiner in surgery to the University of Cambridge, which in 1899 conferred on him the honorary degree of M.C. He wrote the "Nature and Significance of Pain," which you will probably remember. He translated and edited Billroth's "Clinical Surgery." The "Medico-Chirurgical Transactions," Heath's "Dictionary of Practical Surgery," Tuke's "Dictionary of Psychological Medicine," and the volumes of "Mental Science" were also indebted to his pen for illuminating articles. Besides his professional work, Mr. Dent was an explorer and mountaineer of distinction. He became president of the Alpine Club (1886-9). He conducted a series of explorations in the Caucasus. He wrote the volume on "Mountaineering" in the Badminton Library and many articles on Alpine as well as surgical subjects. In 1899 and 1900 he was in South Africa as an independent surgeon and the result was a series of letters on "Gunshot Wounds" in the *British Medical Journal*.

Mr. Edgar Jones, J.P., who died on the 26th inst. in his 103d year, was probably the oldest member of the profession as well as the senior magistrate. He took the membership of the Royal College of Surgeons in 1834 and practised for some years at Saffron Walden in Essex, but later he devoted himself to agriculture. In 1852 he was put on the Commission of the Peace and eventually became chairman of the Billericay Bench. King Edward sent him a telegram of congratulation when he attained his 100th birthday. A few months ago he met a centenarian woman and they exchanged reminiscences. Mr. Jones was a life abstainer from alcohol and tobacco. He retained his faculties in a remarkable degree.

OUR CANADIAN LETTER.

(From Our Regular Correspondent.)

MEETING OF THE CANADIAN MEDICAL ASSOCIATION AT EDMONTON, ALBERTA.

TORONTO, Sept. 10, 1912.

THE annual meeting of the Canadian Medical Association took place this year on August 10, 12, 13 and 14 at Edmonton, Alberta. This is only the third time that the association meeting has been held in the West. Twenty-three years ago it was held in Banff, and in 1904 in Vancouver. The meeting at Edmonton was successful from many points of view; the attendance, considering the distance to be traveled before reaching Edmonton from Eastern Canada was excellent, and the papers generally were good.

Dr. H. G. MacKid, of Calgary, the president, gave an inspiring address filled with enthusiasm for the West and with wonderful predictions for its future. Dr. MacKid said in part that the outstanding need of the medical profession in Canada today was a closer and more thorough organization of the medical men in their respective district, county, and provincial associations, which as a result would find their fullest and proportionate representation in the National Medical Association. Reference was made to the passage of the bill which made interprovincial medical reciprocity possible, and a glowing tribute was paid to Dr. Roddick, of Montreal, for his untiring efforts to bring this about.

Dr. MacKid spoke of the value of the *Canadian Medical Association Journal* and said that, thanks to the labors of the finance committee of the past two years, an efficient journal had been established, which, under the able editorship of Dr. Macphail, had already won for itself a place in the periodical literature of the medical world. It was hoped that within a short time it might be made a weekly instead of a monthly. That, however, would depend upon the support given the association by the profession at large throughout the country.

Attention was also drawn to the affiliation of the various provincial associations with the Canadian

Medical Association, which had been carried through during the past twelve months. At present all of the provinces save one had declared themselves in favor of affiliation and had become affiliated.

After commenting on things done the speaker considered the needs of the future. According to him the great problem now is to get the Canadian Medical Association solidly cemented together. The establishment of the journal had been a long stride in this direction. The next step was to create a properly constituted central body, a sort of parliament, with proportionate representation from each province. First, however, county societies must be organized, and in those districts where none existed they must be created.

Dr. MacKid gave unstinted praise to the efforts of the American Medical Association to improve the standard of medical education, to uproot commercialism, and to abolish quacks and proprietary medicine and fake cures. In closing the speaker sketched in glowing and enthusiastic language the future of medicine in the West. Dr. A. E. Giles, London, Eng., gave the address in surgery.

A decidedly novel feature of the meeting was the fact that on the Sunday preceding the general sessions several pulpits in Edmonton were occupied by medical delegates. Sir James Grant, of Ottawa, occupied the pulpit of Knox Church and delivered a striking health homily from the text, "Turn ye, turn ye; why will ye die?" Sir James discoursed eloquently on health matters and especially on tuberculosis, and wisely pointed out that in a new city as Edmonton was it was important that the utmost care should be taken in its drainage facilities, as defects in drainage and sewer utilities was a cause of many diseases. Dr. Bruce Smith, of Toronto, preached a sermon on health in the Metropolitan Methodist Church, taking as his text, "It doth not appear what we shall be. The earth is the Lord's and the fullness thereof."

Among papers of interest read in the section was one that attracted marked attention by Dr. E. Ryan, superintendent of the Rockwood Hospital at Kingston, Ont. This paper, entitled "Seven Years' Advance in the Ontario Hospital for Mental Diseases," was somewhat of an indictment of the manner in which mentally deranged persons are treated in some localities and indeed were treated in Ontario seven years ago. Dr. Nicholls, of Edmonton, in discussing the paper, said that he had been informed by the Attorney-General that the only asylum in Alberta was so crowded with people of a low criminal grade that it left no room for anyone unless dangerously insane. According to the speaker, so far as the management and care of the insane was concerned in Alberta, they are now where Ontario was twenty years ago and not where it was seven years ago. He pleaded that the public take more interest in the matter and compel the government of Alberta to make more adequate provision for the cure of the mentally sick in the province.

The meeting was chiefly distinguished perhaps by its health sermons and by its popular lectures. On the evening of August 14 Prof. J. George Adami, of Montreal, delivered an address, taking as his text "The Sins of the Fathers." It was, in fact, an excellent scientific disquisition on heredity. He attacked the modern popularly accepted doctrine that acquired conditions are not inherited, and as a corollary that the germ cells are unaffected no matter what vicissitudes are undergone by the body at large, or rather, perhaps, by the body of the parent-at-large. This is to say that the sins of the fathers do not tell upon the children. These teachers prophesy that no matter how the parent ill treats his body prior to conception the progeny is unaffected; a man may have tuberculosis or syphilis, and provided he does not give the disease to the mother and so bring about infection of the fetus in the womb, the child is likely to be as strong and healthy as that of a perfectly sound parent. Adami stated emphatically that he was sufficiently old-fangled to repudiate this new-fangled "Weismannism," and he still held the belief that the sins so-called of the parents against the body, or at least a very important series of such sins, do influence the progeny to his hurt, and, what is more, he believed that these new-fangled ideas had their origin in the narrowness, or it might be said in the Chauvinistic provincialism of the zoologists. Adami went on to show that inheritance of disease was not everything, from the point of view of eugenics, the terrible effects of congenital disease and more particularly of infections conveyed to the growing individual while in the womb or during parturition must be considered. When it is accepted that at least half of gynecological practice is due to gonorrhea and its results, that a large proportion of the cases of infantile blindness is of gonorrheal origin, that as demonstrated by the Wassermann test, practically all cases of locomotor ataxia, and nearly all cases of general paralysis of the insane are of syphilitic origin; when we know that most cases of multiple successive abortions are syphilitic, and recognize the puny, miserable parodies of humanity doomed in most instances to an early death, that too often are the result of syphilitic disease in the parent; when we realize the preventable ills that follow in the train of these venereal diseases, the speaker said he wholly agreed that the time had come when we should no longer refer to these matters by circumlocutions, when for the good of the coming generations we should openly wage war against gonorrhea and syphilis, and above all should for the safety and welfare of our children instruct them as to the dangers they must ward against, not merely on account of their own health and happiness, but for the sake of the generations yet unborn.

Prof. H. A. McCallum, of London, Ontario, was elected president and London, Ontario, was selected as the next place of meeting. The Executive Council was elected as follows: Drs. Whilland, Edmonton; Findlay, Montreal; Adami, Montreal; Halpenny, Winnipeg; Reeve, Toronto; McKechnie, Vancouver; Small, Ottawa; Kennedy, Macleod; Daniels, St. John, N. B.; Madre, Halifax; Archibald, Montreal; Primrose, Toronto; Conroy, Charlottetown, and Young, Saskatoon. Dr. H. G. MacKid, Calgary, as president of the association will be a member of the committee *ex officio*. With true Western hospitality the medical men who attended the meeting were entertained in various ways. Trips were arranged to points of interest in the vicinity of Edmonton—vicinity being a broad term in that land of immense distances. Visits were made to points in the Rockies, only a question of a hundred miles or so, and a good impression was created of the great Northwest. The meeting was eminently successful both from the scientific and social viewpoints.

Progress of Medical Science.

Boston Medical and Surgical Journal.

September 5, 1912.

1. The Use of Lactic Acid Soured Milk and Lactic Acid Bacilli in Pulmonary Tuberculosis. P. C. Bartlett and C. V. Murphy.
2. Two Cases of Diverticulum of the Bladder Treated by Operation. A. L. Chute.
3. Present Status of Salvarsan. A. Post.
4. Two Cases of Orchitis Due to Mumps Treated by Operation. G. G. Smith.

1. Use of Lactic Acid Bacilli in Pulmonary Tuberculosis.—P. C. Bartlett and C. V. Murphy state that every clinician who has concerned himself extensively with the care of tuberculous patients has been impressed with the prostrating effect of the obstinate diarrhea, alternating very often with intervals of constipation, which is a not infrequent complication of well established, or advanced pulmonary tuberculosis. That the large percentage of these cases are functional only has been indicated by a somewhat extensive study of the feces in the laboratories of the Rutland State Sanatorium, and their toxic origin is strongly suggested. It is in connection with this type of individual, as well as in cases of actual tuberculous enteritis that the employment of lactic acid soured milk has afforded the maximum benefit, both as a dietary measure in support of energy and in tissue repair, and as an agent favorably modifying the symptoms and controlling the diarrhea. Its range of usefulness extends over almost the entire field of gastrointestinal affections encountered in connection with sanatorium work.

2. Diverticula of the Bladder.—A. L. Chute reports two cases of diverticulum of the bladder successfully treated by operation. The type presented by the two cases differed essentially from the clearly congenital double bladders, on the one hand, and also from the little herniæ of the bladder that are directly due to pressure and usually arise near the vertex. Diverticula, such as those in the reported cases cannot strictly be called congenital, yet the author believes they always have their origin in the little pits that one sees from time to time just to the outside of the ureteric orifice, and which are undoubtedly faults or anomalies in the development of the bladder. Embryologically buds from the fetal ureter, which might easily lead to such little pockets, are supposed only to arise to the inner side of the ureter, while these are seen on the outer side. Many writers note the frequency with which diverticula appear just outside the ureter, but the author has seen no explanation offered for this. He believes the most probable explanation lies in the little congenital pits or pockets. These are not confined to males. Their presence is not in itself sufficient to bring about the formation of a diverticulum. There must be the determining agent as well, such as an increase in the intravesical pressure. This may be due to obstruction at the bladder outlet, or anywhere along the urethra, or a sharp cystitis, attended with violent bladder spasms, may be sufficient.

3. Present Status of Salvarsan.—A. Post concludes that salvarsan is the most rapid and powerful antisyphilitic known. It is not without its dangers which are sufficient to induce caution in its use, but not to cause its abandonment. It is not yet possible to promise absolutely a cure. One should not urge its use upon those who are impressed by its possible ill effects. It should be used in conjunction with mercury in all cases in which a diagnosis can be made before general symptoms appear. It should be used in all cases in which patients are not progressing well under ordinary treatment in any stage. It should be used in all cases in which patients are an especial danger to the community. It should not be used in maximum doses, but rather in repeated medium doses and in exceptional cases in repeated minimum doses.

4. Surgery of Orchitis Due to Parotitis.—G. G. Smith reports two cases of orchitis of this nature on which he operated with the primary object of preventing, if possible, the atrophy which so frequently follows this affection. The method employed was based upon the theory that atrophy results from the increased intratesticular pressure caused by the inflammation. Relief of this tension obtained by slitting the tunica albuginea restores the circulation and preserves the testicle.

New York Medical Journal.

September 7, 1912.

1. Yellow Fever a Strictly Human Disease. A. Agramonte.
2. Pneumonia in Children. H. Lowenburg.
3. The Wassermann Test. D. M. Kaplan.
4. Vesical Neoplasms. J. F. McCarthy.
5. Ten Sex Talks to Girls. I. D. Steinhardt.
6. Endourethral Chancre. E. H. Marsh.
7. A Completed Treatment for Tonsillitis. F. Griffith.
8. Massive Tuberculosis of the Liver. D. Felberbaum.
9. The Cinematograph as an Aid to Medical Education and Research. R. Matas.

1. Yellow Fever a Strictly Human Disease.—A. Agramonte states that the hypothesis is unsupported which avers that yellow fever may attack the lower animals and that thereby the causative agent may continue to spread or be kept alive for considerable periods without attacking human beings living in the same territory. Numerous attempts have been made to inoculate the lower animals with this disease, but these attempts have been unsuccessful except in one instance, the inoculation of a chimpanzee by Thomas, in Brazil The author has inoculated animals with venous blood, fecal matter, and "black vomit" from human cases, and has even applied infected mosquitos to the abdomen of rhesus monkeys, without in any instance transmitting the disease. In view of these facts and inasmuch as the mosquito's life is not shortened by carrying the virus and does not seem to be in the least affected by the latter, the author concludes that yellow fever is strictly a human disease.

3. Wassermann Reaction.—D. M. Kaplan concludes that there are diseases other than lues giving positive reactions. The old method of amboceptor standardization does not consider all the obstacles that it is designed to overcome. The aging of the antigen is capable of producing inhibition in doses smaller than ascertained in the original gauging, and should receive attention on the day of the test. The patient's serum ought not to be older than forty-eight hours. Old sheep cells develop anticomplementary powers.

4. Vesical Neoplasms.—J. F. McCarthy presents the following conclusions, which, in the light of recent advances, would appear to serve as a more or less adequate working basis in the treatment of tumors of the bladder, though in reality each case should be considered on its individual merits. The Oudin spark treatment (cystoscopic) applies to small or moderate size growths, single or multiple, particularly the latter, which are accessible and apparently of a benign character. In the absence of a reasonably prompt effect, such treatment should not be prolonged. Except in the unusual case in which pronounced hematuria obscures the view, the method will supplant the suprapubic operation of coning the mucosa. The application of the spark should not be made in a cloudy field, as in such event it is inexact and dangerous. Growths of an infiltrating character and suspiciously malignant should very promptly be removed by resection through the entire bladder wall at least two centimeters beyond the mass, and when in close proximity to the ureteral orifice should include ureter transplantation. In the case of a very great number of outgrowths in the bladder which, while benign, are, from their very multiplicity, not amenable to the spark treatment, one should not forget that this same treatment may with much effectiveness be directed via the suprapubic opening. It is the author's hope that the employment of the d'Arsonval spark may offer something even of a palliative nature in such cases as appear to be beyond reach.

8. Massive Tuberculosis of the Liver.—D Felberbaum notes that this condition is usually secondary to intestinal tuberculosis, and reaches the liver by way of the portals. The first step is a tuberculous pylephlebitis and thrombosis of the endohepatic branches, and later on tuberculous granulation tissue is deposited. A number of these granulomata coalesce and form conglomerate tubercles These deposits are usually multiple and may soften down, giving rise to a tuberculous abscess, which may eventually discharge into a bile duct, similarly to a caseous focus in the lung, rupturing into a bronchus. The nodules appear as white masses of various sizes and shapes, surrounded by a thin fibrous capsule. The adjacent liver substance is compressed and may become pigmented. They resemble very much gummata, but may also simulate neoplastic growths, as in the case to be described. The symptomatology is very definite, no case having ever been diagnosticated during life. The liver may be enlarged; tumor masses have been felt during life. Jaundice does not occur. The cases have all been characterized by gradual emaciation, but on the whole, the symptom complex is masked by the primary affection. There are two cases on record in which the process in the liver was apparently primary, no other tuberculous foci being discovered. The disease is slightly more frequent in children, probably on account of the frequency of intestinal tuberculosis. The case reported by the author exemplifies the difficulties of the diagnosis *intra vitam,* especially in that it was considered to be a case of carcinoma of the stomach and liver, tuberculosis not having been suggested as a possible diagnosis by any one of the many who examined the patient during life. Even after the specimens were obtained, the condition was considered by nearly all who saw it as a malignant growth.

9. The Cinematograph in Medical Education.—By R. Matas. (See MEDICAL RECORD, Vol. 81, page 142.)

Journal of the American Medical Association.

September 7, 1912.

1. Physical Therapeutics.—By P. Marvel. (See MEDICAL RECORD, Vol. 81, page 1120.)

2. Physiological Basis of Thoracic Surgery.—By J. M. Flint. (See MEDICAL RECORD, Vol. 81, page 1245.)

3. Transverse Myelitis Type of Poliomyelitis.—A. L. Skoog describes the pathological findings at autopsy of a patient dying from acute poliomyelitis of the *foudroyant* type. He notes that the perivascular tissue, which must not be confused with the adventitia, comes first in the frequency and severity of pathological changes The adventitia is a worthy second and its cells and fibers may be completely disintegrated by the thick invasion of cells. All coats of the veins are frequently involved. The large arteries have only their perivascular structures invaded; the moderate sized ones have the adventitia also invaded, and the small arteries or arterioles may have an infiltration of intima, elastica and muscularis as well as the frequently involved adventitia. It is possible that some of these severely involved vessels have necrosing tunics with resulting thromboses or ruptures of the walls. The author believes that the infiltrating cells give evidence of a defensive process, and all indicate the particular quantitative localization of the virus of acute poliomyelitis in the tissues

4. Spinal Cord in Pernicious Anemia.—R. N. Willson reports a case of pernicious anemia with marked nerve center involvement and an interesting family history, and describes the complications on the part of the nervous system in this disease. It is well to remember that there are spinal cord and perhaps brain changes in every case of true pernicious anemia and the nervous symptoms may sometimes prevent its prompt recognition. The spinal cord lesions consist of a combined sclerosis of the posterior and lateral columns, the former sometimes being alone affected and producing the clinical picture of tabes. The lateral columns are never involved by themselves. A considerable number of cases have been reported in which the anterior horns were involved, but this is a late development in the disorder. In the case reported there was a very striking clinical indication of a pathological intestinal process dating back to childhood, and it seems evident that this toxemia led up to, if it is not absolutely demonstrated to be the direct cause of, the later symptoms. The family history suggests a possible hereditary luetic influence, since one sister of the mother died in an advanced stage of locomotor ataxia, while two other aunts and the mother herself suffered also from conditions which might have thus originated.

5. Difficult and Dangerous Labors.—H. A. Miller states that the normal progress of labor should be interfered with only when the mother or the child seems to be in danger. Judgment of each individual case should be carefully formed, applying all the known methods for measuring the pelvis, and the size of the child's head, and placing special importance on the possibility of engagement or non-engagement as the result of pressing on the uterus, and using the finger in the vagina, and the paw-like grip over the child's head. Due consideration should be given to the fact that a competent obstetrician has previously had difficulty and has secured a dead child from high application of forceps. As labor progresses, the borderline cases must be so conducted and at such a place as to permit of a cesarean section in preference to an application of high forceps, in case progress is not satisfactory and there seems to be a reason for hastening delivery. These cases should be conducted largely by abdominal palpation, judging of the descent by this method in preference to frequent and, many times, unnecessary vaginal examinations. In the absolute indications for cesarean sections they should preferably be done as soon as the patient fairly enters labor, accepting as evidence of the opening of the os some slight vaginal discharge, or, if necessary, one examination In the relative indications for cesarean section it should be done prior to the time that the patient shows an unusual degree of exhaustion and preferably prior to the rupture of the membranes. In elderly primiparæ the possibility of a senile uterus must frequently be the determining factor in deciding as to spontaneous delivery, high forceps and cesarean section. High forceps should be applied only in cases in which the surroundings of the patient do not justify an abdominal cesarean and in which the head is floating free from the pelvis. The physician must be prepared to accept an infantile mortality in excess of 15 per cent. with a maternal mortality equal to elective cesarean section, plus a not inconsiderable morbidity. Pubiotomies should be done only when sufficient assistance is at hand to prevent undue separation of the pelvic bones and in cases in which a very slight increase of the conjugata vera is known to be sufficient to permit the passage of a living fetus. Craniotomy has no place in obstetrics on a living child, and the physician should avoid putting himself in the position of having to sacrifice one life to save the other when both should have been saved.

6. Cesarean Section.—C. A. Stillwagen notes that cesarean section may be said to be indicated generally in all cases of maternal or fetal dystocia, in which other methods of delivery are extra-hazardous to either mother or child. Therapeutic abortion is often too lightly undertaken. It is sanctioned by law and medical opinion, but this fact tends to diminish the sense of responsibility and to cause some unjustifiable operations. Craniotomy is rather condemned in a living fetus; it is doubtful whether this procedure is less dangerous than some forms of cesarean section. From a surgical viewpoint, cesarean section would be the quickest, surest and cleanest method of procedure in placenta prævia and is indicated in all cases of central placenta prævia and in the partial type when the child is living and near term, provided adequate surgical skill is available and the patient's condition makes her a fair operative risk. It is also a valuable recourse in eclampsia, emptying the uterus quickly, lowering the blood pressure, improving the chances for the child, etc. It is indicated in primiparæ with rigid cervix or any condition involving delay or unusual trauma to mother or child. The field of cesarean section is widening.

8. Poliomyelitis in Norway.—F. Harbitz points out that poliomyelitis has been recognized in Norway as a distinct disease since 1820, sporadic cases having been reported. Epidemics have occurred in 1858, 1886, 1889, 1903, 1904, 1905, 1906, the earlier ones being local, the later ones extending over wider tracts of country. The Norwegian physicians regard it generally as an acute infectious disease and also contagious, which view is shared by the author, who gives facts supporting his belief. Of great interest are the abortive cases which are found to be just as contagious as the severer ones, and it must be supposed also that the infection can be spread by means of healthy bacteria carriers, which explains the long period of incubation sometimes noted. According to Norwegian experience, the route of entrance is the nose, throat, and alimentary tracts. The degree of infectiousness as a rule is not very great. No evidence has been found that food is a source of infection, nor that there is a coexistent infection of animals. The unexplained points are the prevalence of epidemics in certain years without reference to changed climatic conditions, the greater prevalence in the summer and fall, and in rural districts, and lastly, the varying degree of contagiousness in different epidemics. Notification, isolation, careful disposition of the patient's excretions and secretions, especially from the nose and throat, general disinfection of articles in contact with the patient, particular attention to the lighter abortive cases and possible carriers, and care as to the hygiene of school children, and even the closing of schools, are the precautionary measures that have been taken. As a rule these have been begun too late, but they seem to have helped to limit and stop the disease. The treatment of individual cases has been mainly symptomatic, and possibly of not much avail. Systematic investigation of the disease is now being carried on.

12. Palliative Treatment of Terminal Laryngeal Tuberculosis.—H. Horn recommends as a palliative measure in cases of terminal laryngeal tuberculosis the Hoffman method of injecting the superior laryngeal nerve so as to produce a permanent anesthesia. The emaciation which is usually present makes the procedure generally an easy one. The point of entrance of the nerve through the thyrohyoid membrane can be palpated with exactness. The exact technique of making the injection is as follows: The skin is first prepared by painting the region to be injected with iodine. The left side of the larynx is grasped with the first and second fingers of the right hand, and with the thumb of the same hand the painful point is located. As soon as this spot is found the thumbnail is pressed in to mark the spot and the needle is introduced at this point. The needle is introduced perpendicularly for 1.5 c.m.; then the point is moved in all directions until a sharp pain, radiating to the ear, is felt. From 3 to 5 c.c. of a warm solution of 85 per cent. alcohol are then injected until the pain in the ear disappears. The point of entrance of the nerve will be found just at the upper edge of the thyroid cartilage, about one-third of the distance from its outer edge. In no case has the author had any untoward effects and claims that the procedure is entirely without danger. There is immediate relief from pain as the aspiration of food is seldom observed. The injection can be repeated without danger as often as necessary and the relief lasts from a few hours to forty days. The mental effect on the patient is a very important secondary one. He becomes more cheerful and tries to take food. In three cases the results were negative, and if there was an involvement of the epiglottis, especially on the external surface, it was found that the relief failed or was only partial.

British Medical Journal.

August 31, 1912.

1. The Functional and Histological Effects of Intraneural and Intraganglionic Injections of Alcohol. O. May.
2. Gray Hair Associated with Nerve Lesions. G. L. Cheatle.
3. The Treatment of Tabetic Ataxia. J. G. Garson.
4. A Note on the Morphology of a Strain of Trypanosoma Equiperdum. W. Yorke and B. Blacklock.

1. Intraneural Injections of Alcohol.—O. May concludes that alcohol, injected into the trunk of a peripheral nerve, produces a more or less complete local necrosis of the nerve at the point of injection. The change is not an "ascending" one, the nerve above the point of injection remaining normal; the cells of origin of the fibers may show some degree of chromatolysis, but do not exhibit signs of permanent injury. The conditions produced by such injection are more favorable to regeneration than those resulting from simple section without suture. The anatomical continuity of the nerve trunk favors rapid regeneration, though this is to some extent retarded by the fibrosis which occurs to a greater or less extent in every case of alcohol injection. It is apparently impossible by a single injection of alcohol to produce complete necrosis of the Gasserian ganglion, its dense texture preventing complete infiltration. The alcohol tends to find its way under the sheath of the ganglion towards the proximal root, which is affected to a greater degree than the actual ganglionic.

2. Gray Hair Associated with Nerve Lesions.—G. L. Cheatle notes the following observations that he made on the case of a male patient, aged 36 years, who had subcutaneous neurofibromata growing on the cheek and forehead of the right side, which were noticed about the same time ten years ago, when the hair also began to grow gray. The state of the grayness of hair was as follows: On the mid-orbital maximum point of Henry Head, there was a patch of normal brown color, which appeared as an island in a completely gray V-shaped area behind which, and limited behind by the posterior boundary of the fifth nerve, was an area of scattered gray hairs. There was no disturbance of sensation. Tactile, heat, cold, and pain sensations were normal. The author believes it would be of theoretical and practical interest to discuss the state of grayness of hair, together with the protopathic nerve influence described by Head. The discussion would be very discursive, owing to the fact that one's knowledge is not sufficient to enable one to state what makes hair appear gray. The author believes that the above case illustrates an epithelial change in state, which takes place *pari passu* with a change in the nervous system, and, therefore, probably due to it. Although grayness of hair is of itself an unimportant epithelial change, it appears at a time of life common to another and important epithelial change—namely, cancer. The genesis and etiology of an unimportant change in a tissue may illuminate

the genesis and etiology of an important change in the same tissue. Grayness of hair may be said to be a degenerative change and cancer a proliferative change. The proliferative change in cancer can hardly be considered an object lesson in regeneration; its products are nearer degeneration products, so far as size, shape, and function of the cells are concerned.

Berliner klinische Wochenschrift.

August 26, 1912.

Traumatic and Chemical Injuries of the Nervous System.—Zweig gives a digest of the literature of this subject for the second half of the past year. It has been abundantly shown by recent statistics that accidents determine or aggravate many conditions which usually come about without such a casual moment. Among these affections are lues cerebri and the metaluetic affections of the central nervous system, manic-depressive insanity, and catatonia. Naturally proof of the relationship may be difficult, but the number of times injury to the head is followed by some of these manifestations cannot be due to coincidence. A bad encephalopathy menacing a patient may come about after an injury. The possible part played by traumatic hemorrhage in all such cases is important, for in such an event there would be no period of latency. Again, if a period of latency were present, the condition could still be due in part to secondary hemorrhage. Psychoses which are the result of injury alone—so-called traumatic psychoneuroses—are distinguished from the preceding by the presence of the psychic trauma and the hysterical character of the symptoms. In still another category should be placed the mental disorders which result without any predisposition from the severity of the injury. Here belong delirium, twilight states, and primary traumatic dementia. There is a decided parallel between these results and physical shock and the same phenomena when occurring in alcoholics and epileptics. Injuries to the head may also produce peripheral manifestations and vasomotor syndromes and peripheral injuries may react upon the central nervous system. The expertisation of casualties in reference to responsibility appears to grow more difficult and complicated with medical advances. In reference to so-called chemical injuries of the central nervous system the chemicals chiefly in evidence are carbon monoxide and the lead salts with nicotine, morphine, and cocain. Tobacco undoubtedly frequently cooperates with other agencies in causing individual disease pictures. Experience shows that drugs do not alter the psyche for the germ of the alteration preexists in the hereditary degeneracy of those who are addicted to drugs.

Menstrual Insanity.—König relates a case which he places under this head. The patient, aged 38 and of sound habit and stock, had been submitted to double craniotomy. The supposed indication is unknown. For a time following the woman became forgetful and irritable. The menses were not wholly suppressed, probably because extirpation of the ovaries had been incomplete. She now began to show distinct changes of disposition at the menstrual epoch and in the course of about three years suddenly developed suicidal and homicidal tendencies. The latter, however, were rationally conceived, for the woman's husband had seduced his own small daughter and the woman's desire to take the lives of her children culminated in the death of one of them and an attempt on her own life and that of her other child. Admitted into the asylum, the patient exhibited for six years the premenstrual alteration of character, but was otherwise normal. These cases are as a rule complicated in character. In addition to the predisposition afforded by the psychophysical inferiority of the premenstrual period, there were present the element of the artificial menopause and the effects due to the family life, both of which may have been exciting causes.

Münchener medizinische Wochenschrift.

August 20 and 27, 1912.

Treatment of Cancer with Internal and External Remedies.—Zeller gives some of Czerny's experiences in the non-operative treatment of cancer during the past seventeen years. The latter's policy has been to test old empirical procedures. The type of cancer treated natually consisted largely of superficial growths. The aim has not really been to supersede the knife, but to supplement its use when operation was refused or when for any reason the case seemed inoperable. One of the old remedies tested internally was silicic acid. One patient with a malignant growth on the nape of the neck recovered in six weeks of this treatment. The woman had refused operation. The woman is still living after seventeen years. A similar result was obtained in two cases of cancer of the breast. In all these cases in the absence of a trial excision the diagnosis was in some doubt. In a fourth case, a cancerous ulcer of the face with diagnosis not open to doubt, the ulcer healed very slowly, some two years having been required. Patient took only 45 drops daily of a solution of silicates of potash and soda. The woman is living and carries a radiating scar. Among other successful cases was one of multiple scirrhus of the breast. There were in all during the period 1895-1906 nine remarkable cures attributable to the silica. In every case there was clinical malignancy. At the expiration of the period a synthetic containing silica was devised for injection. It was an ester and contained 13 per cent. of the element. A solution in olive oil was injected into the muscles and in every case tested an accurate diagnosis was made and an attempt was made to attack cancer without so much selection. Twenty-five cases were treated during 1906-1909 without a single positive result, evidently because the elapsed time is hardly sufficient. On the other hand, the improvement which followed the injections was pronounced. The results were at the most arrest or diminution in size. Since 1909 the author, whose work had been interrupted by illness, returned to his crusade and concluded that cancers which had begun to show regressive change were not eligible to the silica treatment. The apparent specific action of the drug on the dying cancer cells may even increase the cachexia which is conceivably due in part to slow ptomaine poisoning. He therefore treated a series of young cancers with silica alone and conceived the notion of anticipating the cancer necrosis or removing its products by using the old arsenical paste. In a very considerable number of cases with the reserve force of the local treatment he has achieved a large body of apparent cures, the observation period being naturally too brief for remote results. The author appears to have no doubt that silica is the most efficacious chemotherapeutic remedy against the cancer cell.

Trendelenburg on American Surgery.—Trendelenburg seemingly representing German surgeons, makes adverse comment on a recent paper by Kehr on duodenal ulcer in which the latter, unable to explain the great frequency of this lesion in the Mayo clinic, was led to theorize erroneously. Trendelenburg gives a brief résumé of the work done at this clinic and implies that the frequency of duodenal ulcer is accounted for amply by factors other than those assigned by Kehr, these including a sort of operating craze not only on the part of the surgeons but even the public. Points made by Trendelenburg are the great area drawn upon by the prestige of the clinic, the personnel of the patients who are made up very largely of vigorous rural dwellers able to withstand intervention, the cooperation of a large number of specialists in both diagnosis and operative technique, and the host of medical visitors who, after witnessing the work of the clinic, naturally become enthusiasts in referring patients thereto who suffer from certain symptoms. The cases treated are pre-

eminently borderline in character—medicosurgical. Trendelenburg concludes that the Mayo clinic must from its very momentum become a great special academy for instruction in these cases, if indeed it be not one already.

Amenability of Herpes Gestationis to Serum Therapy.—Veiel refers to our former knowledge of this condition, its refractoriness to treatment and persistence until after delivery. One of the great triumphs of the theory and practice of serotherapy was the discovery but two years ago that a pregnancy serum is able to cure this eruption outright. A similar advance in our knowledge of the gestation toxicosis is likewise secured, for we are now amply justified for this and other reasons in speaking of an autotoxic state dependent on pregnancy. As is well known to dermatologists, there are two closely related toxic dermatoses of gestation. One of these is very rare and malignant—the so-called impetigo herpetiformis. The other or benign type is the so-called herpes gestationis. The malignity of the first named is due to its progressive character and the impossibility of antagonizing it. Whether serotherapy can arrest this form we do not know because its infrequent occurrence gives no chance to test the resource. The controllability of the milder form is complete. The itching, which is the most burdensome symptom, ceases promptly under the treatment. The latter is simplicity itself. Blood serum is obtained from a healthy pregnant woman and 10 c.c. are injected subcutaneously in the gluteal region. The serum was from a gravida at the ninth month.

Biological Significance of Eosinophile Substance.—Petry concludes in reference to the eosinophile cell granules that they do not possess bactericidal or antitoxic qualities, nor are they themselves toxic to animal life. They certainly do not represent the sole of leading substance which produces the Charcot-Leyden crystals. They contain a substance which gives the indophenol synthesis. Upon the autodigestion of the leucocytes the granules pass into solution. When injected under the skin they are taken up by fibroblasts and dissolved and later are disintegrated to granular iron pigment. In the bone marrow entire granules are transformed outright to iron and, generally speaking, this metamorphosis represents a storage of iron for future use. Iron thus occurring may come into use as a product of internal secretion.

Familial Incidence of Hodgkin's Disease.—Braun states that such incidence is extremely infrequent. Recently new documents have been adduced to show that the disease in question is a sort of metatuberculosis; and the author is able to report a series of three cases in a tuberculous family. The first patient was a woman aged 55, naturally sound, who developed a general sarcomatosis of the bones; or at least such was the diagnosis at the time. The patient died after seventeen months of illness. Her brother, a few years younger, and himself a practicing physician, was healthy until attacked by a condition diagnosticated malignant lymphoma, which ended his life in three and one-half years. A third member of the same family, male, and still younger, developed multiple lymphoma of all the palpable lymph nodes. Diagnosis was in doubt, as it lay between leucemia and Hodgkin. After death the latter was made plain. The relationship of the disease in the different members of the family was undoubted, showing further that generalized sarcoma may be regarded as an equivalent of pseudoleucemia. A study of the family showed that originally there were ten children, two of whom died in childhood. The others were all raised and were unusually robust. Only one died before middle age (apoplexy). There was notable freedom from scrofula and tuberculosis. The father, paternal grandparents and great-grandparents showed a notable absence of longevity, but seemingly no tuberculosis. The mother and ascendants were unusually vigorous and longlived. Nevertheless, there was a familial taint present, as shown in the collaterals on both sides. There were not a few deaths from consumption. There was also consanguinity in some of the unions. When the entire trees were written out it could be seen that the stock was honeycombed with tuberculosis, expressed in all the usual forms—pulmonary consumption, galloping consumption, bone tuberculosis, and scrofula. This was often marked by the fact that the subjects lived to a good age even while victims of hip disease and quick consumption.

Deutsche medizinische Wochenschrift.

August 29, 1912.

Collargol in Sepsis and Carcinoma.—Kausch sums up several years of personal experience as follows: Intravenous injections of collargol cause the cessation of septic fever with all its accompaniments. This action is so certain that should it fail we are safe to assume the existence of virulent foci of pus. The same efficacy is seen in pyemia when after evacuation or drainage of the pus the fever persists. If exacerbations occur further injections are practised. The usual dose is from 10 to 25 c.c. of the two per cent. solution. In severe cases this dose may be increased to 50 and even 100 c.c. This treatment has been employed in many forms of sepsis and septicopyemia. It has also been practised in a number of cases of inoperable cancer, but the time limit for final results is not yet due. For the present it can only be claimed that a favorable local and constitutional reaction is engendered. Of five cases described in detail all are doing well considering the nature of the symptoms, the patients being in cachexia from the inoperable cancers. Although the general reaction was severe it led to no injurious consequences and after the reaction the general condition seemed notably improved. The inference is perhaps that the factors, whatever they are that make for the cancerous cachexia, are antagonized by the collargol.

Why Is 70 Per Cent. Alcohol so Strongly Bactericidal?—Frey has shown that 70 per cent. alcohol is the optimum for bactericidal purposes. Stronger as well as weaker concentrations are alike inferior. This property seems to be due to the action of alcohol on albumin, for at the said concentration the latter is most completely coagulated. The thirty per cent. of water is naturally responsible for the optimum of coagulability, which is not fixed at 70 per cent., but ranges between 60 per cent. and 70 per cent. The coagulating action would doubtless increase with the alcohol content of a mixture, but another element, the distribution of the alcohol upon the colloid, enters into the results and fixes the optimum limits.

Nature of Chronic Dacryocystitis.—Rhese states that in very many cases this condition is conditioned by ethmoidal disease. The anterior ethmoidal cells have the same significance for the lacrymal sac as the posterior portion of the bone possesses for the orbit. The prognosis for dacryocystitis of this causation is excellent, and the ethmoidal operation will prove curative in very obstinate cases with early formation of fistula. In other diseases of the tear passages of rhinogenous origin, the middle meatus has a greater significance than the inferior meatus. In establishing a diagnosis of rhinogenous affections of this sort the *x*-ray furnishes valuable aid.

Vasodilator and Vasoconstrictor Properties of Blood.—H. A. Stewart and S. C. Harvey state that the blood contains a vasodilator substance specific for the renal vessels. During clotting there is liberated a constrictor substance that acts on the renal vessels and those of the limb. The former substance is a proteid; the latter is not. They both act directly on the muscle coat.—*Journal of Experimental Medicine.*

Insurance Medicine.

SUGGESTIONS TO MEDICAL EXAMINERS.

BY THE INSURANCE EDITOR.

THE URINE.

Technique of Urinalysis.—Avoid mistakes by exercising painstaking care at each step and taking sufficient time, especially if there is the slightest doubt.

Keep all apparatus scrupulously clean, and wash the beakers and tubes thoroughly before and after using for each specimen of urine.

Remove all stains and smears from the test tubes. Nitric acid will remove tenacious stains from the inside of the tubes.

During the process of boiling the tube may become sooty, or cloudy from the salts remaining after the evaporation of moisture from the outer surface of the tube; in either case the tube should be gently cleansed with a damp cloth before inspection of the contents.

Do not employ the same tube for both the albumin and sugar tests, as the reagents employed for detecting sugar often leave deposits on the inside of the tubes which are difficult to remove.

Small amounts of albumin readily escape detection in semi-opaque, dirty tubes.

Turbid urine must be filtered before making the chemical analysis; otherwise traces of albumin will not be discovered. It may be necessary to filter the specimen several times, but if it still remains turbid after this procedure, bacteria or pus is probably present and a fresh specimen should then be obtained. Do not filter with the aid of powdered talc, French chalk, charcoal or any other powder. These insoluble powders often remove the turbidity, but they also remove considerable amounts of albumin and sugar.

Tests should not be made or read by artificial light.

Reaction.—This is ascertained by the litmus paper. Acids turn blue litmus paper red, while alkalies turn red litmus paper blue. Occasionally a urine will be amphoteric, in which case it turns red blue and blue red. This condition is of no significance.

Specific Gravity.—The urinometer must float clear in the urine and not come in contact with the walls of the tube. The limits adopted by most companies are 1,010 and 1,030, and if the specific gravity falls outside of this range the examiner is expected to obtain another specimen and subject it to a complete chemical analysis.

Tests for Albumin.—The use of the albumoscope or horismanscope is not recommended.

Do not use that portion of the urine to which the heat test has been applied, for the cold nitric acid or contact test.

Always hold the tube against a black background by a well-lighted window in order to observe accurately the result of the test in either method.

Having thoroughly cleansed the tube and filtered the urine, if necessary, the following tests are to be used, as they are the most reliable and convenient:

HEAT TEST. A clean test tube is filled two-thirds full of clean urine. If not acid it should be made so by the addition of one or two drops of acetic acid or dilute (10 per cent.) nitric acid. Boil the upper half of the urine for half a minute at least, holding the tube by its lower end and taking care that it does not become sooty. Then hold the tube against a black background by a well-lighted window.

If there is no sign of turbidity in the upper boiled part as compared with the lower cold part, there is no albumin in that specimen.

If there is any turbidity in the upper boiled part, add two or three drops of nitric acid. If the turbidity entirely and promptly clears up, it was probably due to earthly phosphates and it can still be said the urine is free from albumin.

If any turbidity, no matter how slight, remains after the addition of nitric acid, it indicates the presence of albumin or nucleo-proteid, probably the former. To differentiate between these, the examiner must resort to Heller's test.

If the heat test gives absolutely no reaction, it can safely be said that the urine contains no albumin and it will not be necessary to resort to Heller's test.

Some recommend the addition to the urine of one-sixth its volume of a saturated salt solution before adding any acid or applying heat.

HELLER'S TEST. Pour half an inch of pure, colorless nitric acid into the tube. The test tube is then held at an angle of more than 45 degrees while a quantity of clear urine is allowed to flow from a pipette slowly down the side of the tube until an inch of it overlies the acid. If this is carefully done there will be no mixture of the urine and acid. When albumin is present it will be indicated by a sharp, white ring at the line of contact between the acid and the urine.

This white zone may form very slowly when the albumin is present in a small amount, and it is therefore imperative for the tube to be set aside carefully for at least *fifteen minutes* in order to get a positive reaction with traces of albumin.

A diffused ring or cloudiness beginning above the line of contact indicates urates or nucleoproteid, but not albumin. This diffused ring need never be confused with the sharply defined albumin ring at the line of contact.

A positive reaction with both the heat and Heller's test indicates without doubt that albumin is present; it is equally certain that no albumin is present if Heller's test carefully carried out according to the directions gives a negative result, even though a cloudiness remains after application of the heat test.

If the person has been taking any oleoresin, such as cubebs, copaiba, etc., this will also cause a white ring at the junction of the liquid, but it can easily be differentiated from albumin by means of the heat test.

Another method, requiring considerable care to prevent mixture of the urine and acid and not advised for this reason, is the following: Take a perfectly clean, dry test tube and place in it about one inch of urine; allow concentrated nitric acid to flow slowly from a pipette down the side of the inclined test tube. Wait fifteen minutes, then look very closely for a wide band or cloud denoting albumin just above the junction of the acid and the urine.

A Plurality of Examiners.—At the annual meeting of the Proctologic Society, the president, Dr. John L. Jelks, said that attention was now being paid by life insurance examiners to conditions in the rectum. He said he was often consulted by examiners concerning the existence of diseases of special organs or regions and he thought alert medical referees were considering the advisability of subjecting applicants for large policies to a plurality of examiners.

Book Reviews.

FORSCHUNGEN UND ERFAHRUNGEN, 1880-1910. Eine Sammlung ausgewählter Arbeiten von Prof. Dr. Sir FELIX SEMON, K. C. V. O., Fellow of the Royal College of Physicians; Vice-President and Consulting Laryngologist of the International Hospital for the Paralyzed and Epileptic; Physician Extraordinary to His Late Majesty King Edward VII, of Great Britain and Ireland. 2 volumes; price 32 Marks. Berlin: August Hirschwald, 1912.

THESE volumes are dedicated by Sir Felix Semon to his friend, Sir Victor Horsley, F.R.S., "in constant gratitude for his invaluable collaboration in the physiological portion of the work."

In presenting a collection of thirty years' work, the author feels that an explanation for its appearance is necessary, and this is forthcoming when the inaccessibility of some of the original journals of publication is mentioned, as, the Proceedings of the Royal Society of the Academy of Sciences; of the Royal Institution of Great Britain; Virchow's Festschrift; the *Archives of Laryngology*, etc., as also from the fact that the articles have appeared in various languages. The subjects are not arranged in accordance with their time of appearance, but in their relation to each other, so that the first 400 pages are devoted to the writer's work on the physiology, pathology, and history of the study of the laryngeal nerves.

It was especially fortunate that the then comparatively untrodden field of laryngology possessed so steadfast and earnest a worker as Semon, and it is of special interest to note that the result of that work of his in connection with Horsley has so well stood the test of time that the conclusions then drawn have since become firmly established and fixed as laws.

In the second volume, reprinted from the *Internationales Centralblatt für Laryngologie*, he tells the story of the disease of Emperor Frederick, of Germany, in its relations to laryngology. This is remarkably interesting reading and one can feel the extremely delicate position in which the author found himself in describing the bitter controversy which was without doubt the most disagreeable quarrel of modern times among medical men.

Further contributions from the pen of this author are on malignant and benign growths in the larynx as also various septic invasions of the upper air passages. The volume concludes appropriately enough with a chapter on the relation of laryngology and rhinology to allied scientific bodies; for those who have followed Semon's career know how earnestly he has fought for the proper position of laryngology in the scientific world, so that the quotation at the beginning of the first volume, "To live is to battle" seems eminently proper in this connection.

To those interested, this collection of the works of the distinguished author will be of exceeding value, our only regret being that it will be inaccessible to many of our English and American confrères who are not familiar with the German language in which it is printed.

The two volumes are in stately form and a perusal of their contents again giving an indication of the intrepidity possessed by the wielder of this facile and at times trenchant pen, makes us once more regret the loss that laryngology has sustained in his retirement from the field of active work.

PSYCHOTHERAPY, Including the History of the Use of Mental Influence, Directly and Indirectly, in Healing and the Principles for the Application of Energies Derived from the Mind to the Treatment of Disease. By JAMES J. WALSH, M.D., Ph.D.; Dean and Professor of Functional Nervous Diseases and the History of Medicine at Fordham University School of Medicine, and of Physiological Psychology at the Cathedral College, New York; Fellow of New York Academy of Medicine; Member A.M.A., A.A.A.S.; New York State Medical Society, German Society for the History of Medicine and the Physical Sciences, New Orleans Parish Medical Society, St Louis Medical History Club, etc. New York and London: D. Appleton & Company, 1912.

THIS work represents the first ambitious attempt to write a textbook on psychotherapy covering every phase of the subject not only with reference to functional and organic diseases of the nervous system but also with reference to all diseases, including those of nutritional and microbic origin. Psychotherapy is as old as the healing art itself, and whether practised unwittingly as it has been by innumerable physicians, or whether it is deliberately made a part of modern methods of treatment, this form of therapy has demonstrated its value to such an extent as to warrant the presentation of a comprehensive treatise on the subject. The author has demonstrated by his numerous scholarly writings on the history of medicine and his neurological training that he has been eminently equipped to write a volume of this kind. The first part of the work deals with the history of psychotherapy under the following headings: great physicians in psychotherapy; unconscious psychotherapeutics; genuine remedies and suggestive exaggeration, signatures and psychotherapy; pseudoscience and mental healing; quackery and mind cures; nostrums and the healing power of suggestion; amulets, talismans, charms; deterrent therapeutics; influence of the personality in therapeutics; and faith cures. The second part of the work discusses the subject of general psychotherapeutics under the headings of general considerations, the individual patient, the general principles of psychotherapy and adjuvants and disturbing factors. Among the subjects presented in this division are the mutual influence upon each other of body and mind, unconscious cerebration, the daily occupations and diversions of patients, habit, and pain. The next section of the work deals with special psychotherapy or psychotherapy in various disease conditions such as constipation, heart disease, tuberculosis, rheumatism, dysmenorrhea, sexual neuroses, skin diseases, diabetes, paresis, neurasthenia, etc. The concluding part of the volume deals with the disorders of the psyche. Some of the topics discussed in this section are the psychoneuroses, insomnia, disorders of memory, alcoholism, grief, and responsibility and will power. There is a special section on psychotherapy in surgery, and there are appendices on illusions and religion and psychotherapy. In detailing the above topics the reviewer desires to call attention to the extraordinary scope of this method of treatment, which is not confined solely to diseases of nervous or functional origin but penetrates into every domain in medicine; even those diseases that are incurable, such as advanced cancer, deriving some benefit, however slight, from the ministrations of a tactful and sympathetic physician. The author has brought to his task in writing this book a wealth of information which only a ripe practical experience and extensive reading of ancient and modern literatures can provide. Although one may differ with the author in certain of his views, for instance as to the efficacy of faith cures, there can be no question that he has written an eloquent brief for psychotherapy. The general practitioner will undoubtedly find something in this volume that will help him in his daily work.

TASCHENBUCH DER KLINISCHEN HEMATOLOGIE. Von Dr. von DOMARUS, Assistant an der II medizinischen Klinik in München. Mit einem Beitrag: Röntgen behandlung bei Erkrankungen des Blutes und der blutbereitenden Organe, von Prof. Dr. H. RIEDER, und einer farbigen Doppeltafel. Price 4 marks. Leipzig: Georg Thieme, 1912.

IN this very excellent little volume of 200 pages the author has presented the essentials of clinical hematology concisely but with sufficient explicitness for most purposes. The technique of cell counting, hemoglobin determination, and the examination of stained and unstained films is described clearly and with a discrimination in the selection of methods with which the reviewer very heartily agrees. Unlike most German hematologists, Domarus is satisfied with two stains for routine use, the Jenner (which he, of course, calls the May-Grünwald) and the Giemsa, which two he justly says suffice for all ordinary purposes. His discussion of the origin of the blood cells is also especially commendable in its simplicity and he wisely does not align himself with either the followers of Poppenheim who assumes that lymphoblasts and myeloblasts are identical or with those of Naegeli and Schridde, who contend that they are distinct, but states that the question must still be considered an open one. The sections on the clinical manifestations of the various anemias, etc., are equally admirable, and the brief references to therapeutic procedures are interesting as embodying the teaching of the celebrated II medical clinic of Munich. In regard to the application of transfusion to the treatment of severe anemias he is of the opinion that the effect probably does not depend on the amount of blood introduced, but rather on the stimulation of the bone marrow induced. For this purpose small amounts (5 c.c.) taken from the donor with a syringe and injected directly without defibrination into the vein of the recipient may be used. Prof. Rieder contributes a short chapter in which the Röntgen ray treatment of lymphatic and myelogenous leucemia, of pseudoleucemia, Hodgkin's disease, polycythemia with splenic enlargement, and tuberculous lymphoma is advocated. The book is exceedingly satisfactory and deserves the warmest commendation.

Society Reports.

AMERICAN NEUROLOGICAL ASSOCIATION.

Thirty-eighth Annual Meeting, Held at Boston, Mass., May 30-June 1, 1912.

DR. E. W. TAYLOR OF BOSTON, VICE-PRESIDENT, IN THE CHAIR

(Concluded from page 500.)

Friday, May 31—Second Day.

Some Atypical Forms of Tabes and Paresis Considered in the Light of Sero-Diagnosis.—Dr. C. EUGENE RIGGS of St. Paul read this paper reporting four irregular cases of tabes and one of general paralysis. In none of these were the classical, clinical symptoms of tabes or paresis present. Knee-jerks and Argyll-Robertson phenomenon were wanting in all the tabetics. Lightning pains were present in two; lymphocytosis in only two cases. The blood serum gave two negative Wassermanns; the same was true of cerebrospinal fluid. The globulin reaction was positive twice. In the case of paresis the mental symptoms resembled the depressive phase of manic-depressive insanity rather than paresis. All four reactions almost invariably present in paresis (Nonne) were positive. Later dementia seemed imminent, but the patient made an apparent recovery; this was most probably a remission.

Dr. E. D. FISHER of New York said that serodiagnosis was of great value. In the psychopathic wards in Bellevue Hospital, New York, the diagnosis of general paresis was often very difficult to make from a clinical standpoint when it was combined with syphilis and there was a history of alcoholism. It might take several months of observation before a positive diagnosis could be made. It was in just such atypical cases as Dr. Riggs had said that this method of examination was so important.

Dr. RUSSEL of Montreal said that the Wassermann reaction in his experience had not been altogether satisfactory. He had been led to place very little dependence upon the Noguchi globulin reaction. He placed more confidence in the lymphocyte test and was guided in the administration of salvarsan by the findings of this.

Induced Paralysis; Its Therapeutic Application in a Case of Tic.—Dr. SIDNEY I. SCHWAB of St. Louis read this paper, in which he stated that the injection of alcohol in the nerve produced acute paralysis. After a number of months there occurred slow progressive return of function, due to regeneration of nerves temporarily blocked or excluded from activity. Concerning the theory of tic movement the psychogenetic origin must be removed. Nevertheless there were certain cases that were absolutely untouched by any of the well-known methods now in use. It was for this class of cases that the procedures described by Dr. Schwab were devised. The tic movement is so embedded in the patient's consciousness that it makes him unable to carry on his work. The man to whom Dr. Schwab referred was a man of minor intelligence who worked in a bristle factory. He had to tie the bristles in bunches ten hours a day for ten years steadily. The tic movement consisted of extension of the fingers and thumb, and the arm was then thrown clear from the body and grasped with the right hand. Among other forms of treatment the Rolandic area was exposed in 1908, but nothing was found. On the 21st of October, 1909, injection was made into the spinal accessory, median, and ulnar nerves with 80 per cent. alcohol. This produced flaccid paralysis. In May, 1910, the first return in voluntary muscular power was noted. It seemed reasonable to assume that the tic movement would not return even though function should return.

Dr. HUGH T. PATRICK of Chicago said he was very glad indeed to have Dr. Schwab's favorable report. Believing as he did that tic and spasm were so totally distinct and separate, he had never had the courage to inject tic for the reason that tic, if stopped in one place, was very apt to come on in another, as all the patient's own devices for stopping it showed.

Dr. L. PIERCE CLARK of New York stated that two or three years ago he saw a case of tic of the neck and advised the surgeon not to do any operation, but the surgeon went ahead and did the alcohol injection, and, singularly enough, got good results. Dr. Clark believed that these tics are to be judged as mental factors. One should not concern oneself with the particular kind of movements, as the whole individual needs training for giving the proper degree of mental balance.

Preliminary Report Upon a Hitherto Undescribed Type of Familial Palsy.—Dr. L. PIERCE CLARK of New York presented this communication in which he detailed the histories of nine members of a family of nineteen individuals of four generations who presented life-long attacks of motor disability or palsy resembling family periodic palsy. His cases were differentiated from the latter affection in that the disability attacks were unattended by electrical or deep reflex alterations and in that the cranial nerves and some involuntary muscles showed loss of movement. There was an inherent muscular defect akin to pseudomuscular dystrophy in some of the members of the third and fourth generation and severe acetonuria in several children of the fourth generation, the same followed by death in one child. All the individuals afflicted with disability attacks were females excepting one, the great-grandfather with whom the disease apparently originated. One girl of four, of the fourth generation, who had just developed the disease, also suffered from severe acidosis, being the first member to show an association of the two diseases in the same individual. The disability attacks in the several members of the different generations occurred at irregular intervals of days, weeks, or months. The attacks were indifferently mild and severe, occurred more or less abruptly, and affected the finer voluntary movements in the lower extremities chiefly. The author has had several members of the family under observation for a period of several years and was inclined to consider the disorder to be due to an inherent muscle anomaly upon which unknown toxic metabolism was superimposed at the time of actual attacks. Psychic factors of various sorts: fear, mental fatigue, and emotional stress, were also regarded as determinant of the attacks. The author regarded the type as one of the many forms of hereditary familial palsy nearer in kin to the dystrophies than to family periodic palsy.

Dr. DANA of New York said he did not see exactly why Dr. Clark had settled on such a group of cases as being of different type or distinct from the ordinary family periodic paralysis. The description of his cases fitted perfectly with the group that Dr. Dana had studied, except that the attacks of paralysis in Dr. Dana's cases lasted from one to three days. He did not think that the absence of reflexes or electrical reactions was a criterion of any importance. Dr. Dana said he might not have appreciated all the points Dr. Clark had made, but he would say these were simply one of the minor types of the ordinary periodic paralyses.

The Etiological Relation of Syphilis to Aran-Duchenne Muscular Atrophy.—Dr. WILLIAM G. SPILLER of Philadelphia read this paper. He said that comparatively few writers had considered syphilis in the etiology of the various forms of spinal muscular atrophy, and the evidence offered by those who had done so had not been generally accepted. The writer had reexamined for evidence of syphilis ten cases with necropsy, embracing typical clinical types of amyotrophic lateral sclerosis, lateral sclerosis, and progressive spinal muscular atrophy, and had found some lymphocytic infiltration of the pia in most of the cases. He had recently studied two cases of cerebrospinal syphilis and one case of tabes with typical Aran-Duchenne atrophy, *i.e.* atrophy confined to the hands and forearms, and one of each of these types was with necropsy and microscopical examination. In these two cases marked degeneration of the cells of the anterior horns was found. If syphilis of the nervous system were suspected lymphocytic infiltration of the pia should be present in a considerable number of cases, as it was found frequently in tabes. It was not pathognomonic. In some cases thickening of the blood-vessels should be expected, but not as frequently as lymphocytic infiltration. Lymphocytosis of the cerebrospinal fluid was important as an evidence of syphilis.

Dr. MCCARTHY of Philadelphia said that without some other evidence he thought the view proposed by Dr. Spiller should not be accepted.

Dr. STARR of New York said that Erb's statement in regard to the syphilitic causation of locomotor ataxia was substantiated by showing definitely that the percentage of locomotor ataxia in those who had syphilis was far greater than the percentage in other diseases. If Dr. Spiller's statements were to be accepted he should show that a large percentage of patients suffering from amyotrophic lateral sclerosis were the subjects of syphilis. Dr. Starr said he recalled perfectly well three cases treated for some years for amyotropic lateral sclerosis in all of whom a history of syphilis was obtained.

Dr. SOUTHARD of Boston said he was inclined to think that one should not assert lues on the basis of leucocytosis. It was well known that anterior poliomyelitis showed lymphocytosis in a particularly characteristic way. Tuberculosis of the meninges showed it. He had seen cases

of pneumococcal meningitis which showed mononuclear infiltration. We might wake up some day suddenly to find that many things called syphilitic were not syphilitic.

Dr. Israel Strauss of New York said that he thought that what Dr. Southard had said was true. We found leucocytic infiltration in tuberculosis and in other conditions of the nervous system. It was the method by which the nervous system reacted to infectious states in the acute or subacute types. In the chronic states we did not know of anything in the present state of knowledge which gave the lymphocytic infiltration which syphilis did.

Dr. Collins of New York said he ventured to suggest that this paper that Dr. Spiller had presented was an extremely important one, and would mark a very distinctive period in the interpretation of spinal cord diseases. There could be no doubt that what Dr. Southard had said was true, but it did not invalidate the importance of Dr. Spiller's claim and contention. It would permit making an investigation of cases clinically, demonstrating a syphilitic disorder. For instance, we would not be justified in allowing any case of amyotrophic lateral sclerosis to go through our hands without repeated investigation as to whether or not the syphilitic poison existed in the system, and it seemed to Dr. Collins that that was the great application to our problem of the contribution that Dr. Spiller had made.

Dr. Spiller, in closing, said that he had not expected to have his views accepted in large part. It would not have been worth while to have presented the paper if he had expected that. He emphasized that he did not say that every case of amyotrophic lateral sclerosis or chronic bulbar palsy was syphilitic. He wished only to call attention to the possibility of syphilis occurring in a number of such cases and he felt justified in reporting the study.

Acute Infectious Transverse Myelitis Due to the Virus of Poliomyelitis with Complete Recovery.—Dr. B. Sachs of New York presented this communication which consisted of the report of a patient, 18 years old, who presented all the symptoms of a complete acute transverse myelitis. A number of unusual symptoms and the marked tendency to improvement early led to the suspicion that the case was clinically not unlike one of acute poliomyelitis anterior. This suspicion was confirmed by the strictest laboratory proof.

Dr. Theodore Diller of Pittsburg stated that he had seen astonishing recovery in one case of the Landry type in which there was complete paralysis of both arms and legs and in a second case in which there was a transverse myelitis of unknown origin which was not syphilitic in character. He referred to those two cases because they indicated that in the most desperate cases recovery would sometimes occur.

Dr. Graeme M. Hammond of New York said that in an epidemic which occured in Princeton University, 5 young men were taken ill within two or three days. Four of these were undoubtedly cases of poliomyelitis. The fifth one was a case of transverse myelitis. He had not recovered yet, but was recovering. It was a typical case of transverse myelitis occurring in poliomyelitis.

Motion Pictures of Nervous and Mental Diseases.—Dr. Theodore H. Weisenburg of Philadelphia presented this communication, stating that the use of moving pictures in medicine was of comparatively recent origin, but that their use for illustration of scientific subjects was slowly developing and teaching institutions were equipping themselves to utilize them. The pictures offered great advantages for teaching medical students as the teacher had at his command illustrations of certain diseases and the student paid more attention to what he saw illustrated in this manner than when seeing the patient. Also by the photographs it was possible to detect certain phenomena which could not be seen by the naked eye. It was his purpose to show everything that it was possible to show in the realm of nervous and mental symptomatology. It was interesting also that the cases of patients who had since died could be reported and their ailment shown as they suffered in life.

Neurological Economics.—Dr. Charles L. Dana of New York introduced this topic by saying that neurology was a very important branch of medicine and should have for its end not only the teaching of the individual but of the community. For the past year he had been chairman of a committee which had been organizing several subcommittees and which had done considerable work though not ready to report on this yet. Of the special activities in which he had been interested one had been that of expert testimony. A year ago this association passed a series of resolutions in which they tried to formulate certain rules regarding the conduct of experts and expressed hopes regarding the reforming of legal procedures. It was desired to establish a minimum neurological qualification for experts. It was desired to have the payment of experts made by or through the courts and it was desired to abolish the contingent fee. The movement initiated had made progress and should be continued.

Industrial Occupational Neuroses.—Dr. M. Allen Starr of New York presented this part of the symposium. He said there were many dangers from accident in mines from exposure to dust in various factories and from exposure to poisonous fumes. The subject of particular interest to the neurologist included the effects of poisoning by lead, phosphorus, mercury and arsenic. These poisons were employed in a large number of industries, there being 130 industries in which lead entered as a factor and in which workmen were exposed to lead poisoning. There were dangers of plumbism in the manufacture of pottery. In England this had led to the passage of laws for preventing the employment of women in this trade, reducing the percentage of lead in the glaze to 5 per cent. and enforcing methods of cleanliness and ventilation in factories. Dr. Starr favored the passage of laws by the various State Legislatures regulating industries, and believed there was need of education among operatives employed in dangerous trades. This education should be given by the employers by means of notices posted in factories and distributed among the employees and by means of instruction given by the labor union to their members. He also believed that if such information were given to manufacturers and if their attention were called to the importance of the health of their employees, many needed reforms would be voluntarily carried through by them.

Dr. Dana of New York said there were some particular things which the members as individuals might say in regard to the matter. They came in contact a great deal with occupation neuroses. For example, the occupation neuroses, such as the cramps, neuritis, neuralgias, made up about 1 per cent. of the material in his dispensary. It was along those lines that the members as neurologists could do a good deal of work. Then another thing that bore upon this question was the importance of domestic, social, and industrial conditions in connection with the development of psychoneuroses. By the help of social workers and by prying into the environmental and working conditions of the dispensary patients he found that the individual conditions were extraordinarily important in the development of these psychoneuroses.

Dr. Starr of New York said that if every man in the room would take the plans to have in his clinic a card catalogue by means of which every disease that was referable to an occupation should be tabulated, at the end of 2 to 5 years we would have a mass of statistics that would be of great interest and use to neurologists in working on this subject. Our information was indefinite at the present time.

Social Work in Connection with Neurological Dispensaries.—Dr. James J. Putnam of Boston presented this paper. He stated that the general object and character of the social service work at the Massachusetts General Hospital were now so well known that it was unnecessary to dwell upon that aspect of the subject. The plan had been, as regarded that part of the work which related to neurological cases, to spend a considerable amount of time over a small number of persons rather than a little time over a larger number. Two paid workers are now employed, one receiving $1,000, the other $720 a year. In addition, an expert psychologist has given a considerable part of his time to working among chosen cases and studying the mental condition of boys sent from the Juvenile Court. The work of this gentleman has been a valuable addition and he has been remunerated to a certain extent from a special fund. The department has no organic connection with the hospital, but it is hoped that the improvement in standards of work will eventually make itself felt even in the routine work of the hospital. Besides going about among patients and making friends with them, and studying the personal condition of their lives, this department has carried on an occupation class where girls and women are taught pottery work. In general terms it may be said that the chief element of success in the work has been the devotion and intelligence of the social workers.

Social Service and Social Research in Neurological Hospitals and Dispensaries.—Dr. Joseph Collins of New York read this paper. He said that the sick person who goes to a public hospital or dispensary should be so handled that this should not prove to be the first step toward loss of voluntary independence. There should be an actual inspection from a social standpoint of the attitude of each patient toward the payment of fees in order

that it shall not be easier for him to assume a more dependent attitude toward the institution than if he were a private patient, nor easier to cheat the dispensary by fraudulent representations than to cheat the private physician. This relation of the patient to the institution should be under continuous inspection during the entire time of his connection with it. In judging the results of the patient's contact with the institution a criterion should be established by which an estimate can be made of the adjustment of the individual to life in terms of occupation. The new social situation arising from the recognition of the residential status of the patient contains opportunities for social instruction that should be fully utilized. It is vitally important to know what effect the costly processes of curing disease are going to have on the future social relations of the individual. Science and common sense both agree that the individual must be defined in terms of his ability to put forth effort in economical ways toward well-chosen aims. A sound sociology on a sound psychological basis will insist upon studying an individual suffering from disease and resident in a hospital not only in terms of his native energy but of his natural or acquired tendencies in expanding them. When this observation is carried on in connection with actual occupation a situation is created which is favorable for educational purposes and which should be utilized through persuasion, argument, or actual demonstration.

Dr. DANA of New York said his experience has been that no neurological clinic was complete or could be really effective to do good work without having a social service connected with it. Everyone who had tried it would realize that fact. It was not always possible to have one.

Dr. MORTON PRINCE of Boston said that a social service was one of the most important connected with the neurological clinic. After an experience of a great many years he had been impressed more and more with the necessity of some means of looking after the patient not only while he was in the hospital but after he left. A large proportion of the patients who come to the clinic were afflicted with functional disease of one kind or another, which came in a large extent from the inability of the patient to adapt himself to environment.

Retardation and Constitutional Inferiority in Connection with Education and Crime.—Dr. HUGH T. PATRICK of Chicago presented this paper, which consisted of a narrative of the work of Dr. Healy, who had been working with old offenders in the Juvenile Courts of Chicago for about two years. His study of these criminals had been intensive. He goes as far as possible into the questions of heredity and environment, including social influences, family influences and everything else possible. He makes a examination and also to the extent of his ability and the time allowed a psychological examination. He has made a tentative classification based on 800 cases. The largest single causative factor of delinquency recognizable by study of the individual offenders is mental defect. They belong in the class of individuals concerning which society needs the assistance and advice of physicians. Society needs this advice while these offenders are young because a very potential factor in the criminal is the crime habit. It is a tremendous force in criminology and this develops young. One point which Dr. Healy showed in figures and in a perfectly definite way was that a good many of these cases were criminals; they were repeated and chronic offenders because the condition had not been recognized and consequently the child had not been properly directed. That this work of Dr. Healy's has been appreciated was shown by the fact that at the meeting of the Board in Dr. Patrick's office the judge of the Juvenile Court said that he did not know what he would do without Dr. Healy's assistance in his court as these questions are constantly coming up and he would not care to take the responsibility of deciding them. An effort was being made to get a man to do similar work in the court for adult criminals and the money had been provided to pay for such work but they had been unable to find a man to undertake it. Dr. Healy also greatly desired an assistant.

Saturday, June 1—Third Day.

Presentation of Brain Specimens Exhibiting Lesions of Special Interest for Localization of Aphasic Disorders.—Dr. LA SALLE ARCHAMBAULT of Albany read this paper giving a practical demonstration of the lesions found in two cases carefully observed clinically. In the first case there was complete destruction of the posterior third of the left inferior frontal convolution in a right-handed subject who never presented any evidence of aphasia. In the second case an old apoplectic scar occupies the anterior portion of the left middle frontal convolution and a relatively recent hemorrhagic focus destroyed the posterior two-thirds of the left lenticular nucleus, but the left inferior frontal convolution was intact. The patient, who was right-handed, presented well marked, though not absolute, motor aphasia.

Epilepsy in the Adult.—Dr. EDWARD FISHER of New York read this paper, saying that for a long time he had been interested in epilepsy in the adult, especially senile epilepsy. Epilepsy frequently occurs in young adults without any previous history of seizures. In these cases there was no arteriosclerotic basis as there was in the central form. They differ also entirely from the class of epileptics which have their origin in early life. One of the principal causes of epilepsy in the young adult was syphilis. Not that we get necessarily all the symptoms of syphilitic endarteritis or of paresis, although at times there is a difficulty in making a differential diagnosis between these conditions and general paresis. He referred more to the type of young people of 20 to 25 who are actively engaged in college work or in some other form of excessive application in whom the special senses are called upon, especially where there is associated a great deal of anxiety. In the adult cases we do not notice the mental deterioration which is observed in childhood. They are as clear mentally after the attack and resume their vocation with the same mental grasp as before. They do not have either the facial appearance of the epileptic. Therefore, in getting at the pathology of these cases one should not look upon toxins or overstrain as the basic cause, but should regard these as an exciting cause. There must be some fundamental weakness or instability back of the condition. These cases were not easy to treat; they required rest, but did not respond to treatment better than the other forms of epilepsy.

Arteriosclerosis Probably Not an Important Factor in the Etiology or Prognosis of Involution Psychoses.—Dr. G. L. WALTON of Boston read this paper. He stated that arteriosclerosis without gross cerebral lesion should not be too readily accepted as a cause of symptoms. The writer had examined with reference to clinical evidence of this condition 100 cases of marked involution psychosis, choosing the depressed phase of manic-depressive insanity commonly classed as involutional, often with agitation, with self-accusation and with somatic delusions. The same number of control cases have been studied for comparison. The result has shown no greater prevalence of palpable arteries, high blood pressure, apoplectiform attacks or other evidence of arteriosclerosis among the psychoses than among the control cases of the same age and condition. Until, therefore, definite evidence was forthcoming beyond the fact that post-mortem examination sometimes revealed cerebral arteriosclerosis, no reason appeared for assuming its presence, or for regarding it, when found, as other than a coincidence. Furthermore, so large a proportion of these cases fell in the chronic and hopeless class as to render it doubtful if arteriosclerosis should be regarded as having an important bearing on the prognosis.

The Neurological Disturbances of Alzheimer's Disease.—Dr. ALBERT M. BARRETT of Ann Arbor presented this communication which consisted of the report of a woman at the age of 53 who developed a progressive spastic atrophic paralysis, involving the head, trunk and extremities. This was accompanied by profound mental deterioration. Death occurred after two years. The pathological findings were those of marked cerebral atrophy with secondary cord degenerations, the histological process in the brain being the intracellular neuro-fibril degenerations and plaque formation of Alzheimer's disease. The case was unique in the early age of occurrence of this disease and in the severity of the neurological disturbances.

Dr. HENRY M. COTTON of Trenton said he considered Dr. Barrett's communication not only extremely interesting but extremely important from the standpoint of histology. It had been stated at this session that perhaps histology still had a place in psychiatry. Dr. Barrett's paper showed that it not only had a place, but a very important place. This disease of Alzheimer's was an important complex and this case was interesting because of the careful clinical analysis of the symptoms and the neurological examination showing not only the classical findings, but the cord degeneration as well. We should emphasize in a broader sense the progress of the pathological histology as shown by this case.

Dr. COLLINS of New York congratulated Dr. Barrett on the model way in which his case had been studied and reported. It was really a great pleasure to see a new member of the Society handle a subject in the masterly way in which this had been done by Dr. Barrett.

The Metastasis of Hypernephroma in the Nervous System; Jacksonian Epilepsy Caused by Such Lesion.—Dr. JOSEPH COLLINS and Dr. R. G. ARMOUR of New York presented this communication which detailed the case of a man 45 years old who had been in good health and who

developed typical Jacksonian epilepsy, displaying itself by twitching of the left thumb and index finger, paresthesia of the left hand and forearm and followed on five occasions by loss of consciousness and generalized convulsions. Gradually there developed loss of power and of dexterity in the left upper extremity and to a slight degree in the entire left half of the body. The only definite physical signs were loss of sense of position in the left hand and fingers and absence of the left plantar reflex. There was an inconstant astereognosis of the left hand, and a mild increase of the tendon jerks of the left half of the body. A week before his death a slow rhythmical tremor of the left thumb and index finger consisting of adductor movements about one per second developed. When the abdominal cavity was opened a large whitish tumor was found in the right flank, invading the upper pole of the kidney and showing microscopically the structure of adrenal tissue. There was metastasis to various organs including the brain, but in the brain all trace of adrenal tissue was lost.

Case of Confusional Psychosis Following Hysterectomy.—Dr. Richard Dewey of Wauwatosa, Wis., read this paper which consisted of the history of a patient of 47, who after showing climatic changes and anemia, underwent curettage in August, 1909, when she was then found to have multiple uterine fibromyoma (which produced marked autosuggestion of cancer). September, 1909, vaginal hysterectomy. No postoperative physical complications but mental state abnormal. She refused food largely and after 14 days, totally. Mechanical feeding became necessary and had remained so for 2½ years. Delirium continuing at the hospital, she was transferred to a sanatorium 4 months after operation. At this time she was completely disoriented as to time and place, and had constant visual and auditory hallucinations and persecutory ideas. She had no control over her evacuations. Numerous brief periods of partial or complete lucidity ensued—the longest 3 hours. She had frequent motor agitation, but no voluntary or purposive movement. She would not walk or stand, though strong and well-nourished. Indicannria was present at times. Lucid periods often complete as to memory and logical power. Voluntary attention extremely weak. Mental state (during lucid interval) seemed normal except for this and the natural inability to grasp present situation and the retention of persecutory ideas. The therapy had consisted in thyroid feeding, continuous baths and sleeping outdoors. The patient was still in *statu quo*, except that consciousness had widened somewhat.

Dr. F. W. Langdon of Cincinnati said that neurasthenics and psychasthenics were bad subjects and it would be better to postpone operations until the patient's resisting powers were on a higher plane or until they had passed through the impending crisis whether or not this was of an epochal character.

THE AMERICAN DERMATOLOGICAL ASSOCIATION.

Thirty-sixth Annual Meeting, Held at the Barnard Free Skin and Cancer Hospital, St. Louis, Missouri, May 23, 24, and 25, 1912.

The President, Dr. Grover W. Wende of Buffalo, in the Chair.

(*Concluded from page* 501.)

Pellagra.—Dr. Oliver S. Ormsby of Chicago presented sented an abstract of the work done by the Pellagra Commission appointed in 1909 by Governor Charles S. Deenen to investigate the disease as it was exhibited in the State of Illinois. As the result of the investigation of the commission the conclusion reached was that pellagra was a disease which appeared to be due to infection with some living microorganism, possibly of protozoan character. A possible habitat for this parasite in man was in the wall of the intestine. The most plausible view of the mode of entry into the body was by way of the blood stream. The part played by insects was conjectural. The number of cases of known pellagra rendered this disease a decided menace to the public health of the State of Illinois and it seemed important, therefore, that a careful search should be made for cases outside of the state hospitals and that physicians everywhere should be informed concerning the possible development of a disease that had been a national calamity in Italy for one hundred and fifty years.

Acanthosis Nigricans, with Report of a Case.—Dr. Alfred Schalek of Omaha reported this case in detail. The first description of the disease was made simultaneously and independently by Pollitzer and Janovsky in 1890. The disease was of special interest and importance on account of its almost constant association with malignant neoplasms. This complication was usually known at the time of or even before the skin manifestations, but in some instances there was no suspicion of its presence until a tentative diagnosis of the skin changes caused a successful search for it. The pathognomonic cutaneous symptoms, more or less always present, were widespread pigmentation, hypertrophy of the papillary layer of the skin, and hyperkeratosis of the horny layer. Less constant were affections of the mucous membranes and dystrophies of the appendages, the hair and nails.

Seborrhea Capitis.—Dr. George Thomas Jackson and Dr. Charles Wood McMurtry of New York stated that instead of one disease the seborrhea of Hebra, with its oily, dry, and inflammatory forms, we now had four diseases, namely, seborrhea, pityriasis simplex capitis, pityriasis steatodes, and seborrheal dermatitis. Seborrhea was distinguished by simple oiliness of the scalp, by the seborrheal filament, and by the presence of the microbacillus in large numbers on the scalp and in the hair follicles. Pityriasis simplex capitis was distinguished by dryness and excessive branny scaling of the scalp, absolute absence of inflammation, and the presence of immense numbers of the spores of Malasez. Pityriasis steatodes was distinguished by the presence of greasy scales on the scalp and hair, by the absence of all signs of inflammation, and by the presence of the polymorphous coccus with gray colonies. Dermatitis seborrhoica was distinguished by the presence of rather coarse, greasy scales and crusts upon a reddened and inflamed scalp, by its proneness to occur elsewhere than on the scalp, and by the presence of a mixed infection with the spores of Malasez, the polymorphous coccus with gray colonies, and the microbacillus.

Dr. Alexander S. Wolf of St. Louis emphasized the importance of instructing patients to take better care of their scalp from early childhood. It was his custom to impress upon his patients the importance of having an individual brush and comb and seeing that they were kept properly cleaned.

Dr. M. B. Hartzell of Philadelphia asked those members who took such elaborate care of their patients who were suffering from seborrhea of the scalp whether their successes were greater than those who merely advised the use of sulphur preparations, or whether they also failed to cure them.

Dr. George H. Fox of New York said that in these cases he had tried many of the parasitic preparations that had been so highly recommended, and his success with them had been no better than would result from a thorough washing of the scalp, together with remedies directed toward an improvement in the general health of the patient. Among the women who did not believe in frequent washing of the scalp would be found many with magnificent heads of hair, which apparently continued to grow in spite of the parasites that might be present. He believed that baldness, like the color of the hair, ran in certain families and that it was not preventable. The idea that it was due to using the same comb or brush seemed to him perfectly absurd, in view of our everyday experience.

Dr. E. S. Lain of Oklahoma City said he had been making a study of the skin lesions among the American Indians in Oklahoma, and had examined about 4,000 persons, many of them school children, in whom he made a particular note as to the presence or absence of seborrhea. Among the older Indians, who used their fingers or a thorn instead of a comb, seborrhea was practically unknown, while among the Indian school children, who were confined to the schools under strict regulations and were taught to use the common comb and brush, seborrhea of the scalp was present in from 65 to 75 per cent.

Dr. Pollitzer said that, so far as he knew, seborrhea was unknown among the lower animals and did not occur among savages generally. It belonged to civilized life. That seborrhea did not always produce baldness was of course well known. The deleterious effect on the hair and its vitality was due to the seborrheal organism. If there was a vigorous growth of hair this deleterious effect was not sufficient to destroy it; this was commonly the case in women and the same was true of the beard in man. These structures were secondary sexual characters, in the Darwinian sense, and possessed greater vitality than the hair on the head of a man, which was analogous in this respect to the vermiform appendix and of no great importance.

Dr. Jackson, in closing, said he had no doubt regarding the infectious nature of seborrhea, and that the proper care of the hair had much to do with its preservation. After the infection had once extended down to the hair follicles

a cure was difficult, if not impossible, and the best we could do was to keep the scalp in such a condition that when these parasites got on it they would have no chance to grow.

An Inquiry into the Efficiency of Sulphur Lotions.—Dr. O. H. FOERSTER of Milwaukee said that in sulphur we empirically recognized one of our most valuable dermatologic remedies for local use, but concerning its mode of action on the skin opinions to-day were still divided. It was certain that sulphur, as such, in contact with the skin remained practically inert, there being no interchange between sulphur and the keratin of the corneous layer, for both were insoluble. The action of the sulphur must consequently depend upon its conversion into a soluble form or gaseous product. Unna was the first to investigate this question and he concluded that sulphur acted by virtue of the hydrogen sulphide formed. His observations remained current and undisputed until Brisson, in 1900, asserted that the action of sulphur on the skin was due entirely to sulphuric acid formed by oxidation of sulphur. The efficiency of a sulphur preparation, according to Brisson, was therefore directly proportional to the amount of sulphuric acid formed from it by oxidation, while Unna and Golodetz considered its efficiency proportional to the formation of hydrogen sulphide. Further research was required for a definite decision of this question, though it appeared at present that Unna's conclusions were more securely founded. The watery suspensions of sulphur, as ordinarily prescribed and prepared, must be regarded as of little value, for sulphur was insoluble in water, and sulphur, as such, was practically inert. Measured by our theoretical standard, liquor calcis sulphurata was to be regarded as the most efficient sulphur lotion.

A Case of So-Called Prurigo Nodularis.—Dr. JOSEPH ZEISLER of Chicago reported this case and showed the patient. He said the term prurigo nodularis had been selected by Hyde in the last edition of his treatise on skin diseases for a rather unique dermatosis which he described on the basis of but four observations, one of them his own. Of the others, one was published in 1880 by Hardaway in the Archives of Dermatology under the title "A Case of Multiple Tumors of the Skin Accompanied by Intense Pruritus." The other two cases formed the subject of a communication by Schamberg and Hirschler in the *Journal of Cutaneous Diseases*, April, 1906, under the heading "Two Cases of Multiple Tumors of the Skin in Negroes, Associated with Itching." There was a striking similarity in these four cases. All of them concerned women in middle life; in all the lesions varied in size from a small pea to a hazelnut; they were located chiefly on the extremities and gave rise to intense itching. Having once become established they showed little tendency to either further development or involution, and remained thus unchanged for years, uninfluenced by treatment.

Concerning Epithelioma of the Lip.—Dr. WILLIAM ALLEN PUSEY of Chicago, in this paper, limited himself to his own experience, giving the records of 44 cases of epithelioma of the lip seen in private practice and treated with the *x*-rays more than three years previous to January, 1912. In 40 of these cases, all men, the lesion was on the lower lip; four were on the upper lip; of these, three were women and one a man. The youngest patient was 28; the oldest, 90. The cases were for the most part selected cases, *i.e* the lesions were as a rule superficial, not extending deep into the lip, but this statement by no means covered all of the cases, for some were not regarded as favorable and were treated only because an operation was not practicable. The list did not include many cases of extensive carcinoma of the neck following cancer of the lip. In only two cases were glands palpable at the time of beginning treatment, and of course, operation was urged in these cases. One of these was not helped, and presumably died of carcinoma, but the other had been well six years. In another case a gland developed beneath the angle of the jaw after the lesion on the lip had healed: the gland gradually subsided, and the patient, a physician, had been well seven and a half years. The lesions in these cases varied from small, finger-nail size nodular masses or ulcers with nodular borders and indurated bases up to ulcers covering nearly the entire lip or tumors the size of an olive. Of these 44 cases Dr. Pusey said he knew the subsequent history to January, 1912, of all but five, which he would be compelled to deduct from his list, together with one additional case, that patient having died from intestinal obstruction five months after an apparent cure of the lesion on the lip. Of the 38 cases whose subsequent histories were complete, 35 had an epithelioma of the lower lip; three of the upper. Twenty-eight of these patients were living and free from epithelioma of the lip or metastases arising therefrom in January, 1912. Four were well when last heard from, from three to seven years after their treatment. Four had died from other causes. Two were failures; the disease spread to the glands beneath the jaw and caused death. Two of the patients had lived nine years without a recurrence; seven had lived eight years or more; seven had lived seven years or more; five had lived six years or more; two had lived five years or more; five had lived four years or more and eight had lived three years or more. The mean average interval which had elapsed since treatment in the 36 cases was six years. Dr Pusey said he was willing to treat any epithelioma of the skin with the *x*-rays, provided radical treatment did not require the removal of contiguous glands. After an experience of eleven years, and covering the treatment of several hundred epitheliomas with the *x*-rays, he felt more convinced than ever that, used with attention to technique and with proper regard to their therapeutic indications, the *x*-rays was one of the most useful, or the most useful, single agent of treatment in the service of dermatology.

Dr. GEORGE M. MACKEE of New York said his experience in these cases was practically in accord with that of Dr. Pusey. With a more extended experience with this method of treatment he thought the limitations that had been drawn around the *x*-rays as a therapeutic measure were gradually growing less. He had learned a great deal in regard to postoperative *x*-ray work, particularly in the regions of the breast and neck, where the rays would control a certain percentage of inoperable cases of cancer, even when palpable glands were present.

Dr. MARTIN F. ENGMAN of St. Louis said that cancer of the lip was a dangerous disease—the most dangerous of any place on the face—and he had always been under the impression that it was very risky to resort to the *x*-rays in a cancer in that region. Even in cases where the glands were not palpable and where the usual v-shaped incision was made by the surgeon, recurrences frequently took place under the jaw. While he did not wish to be understood as saying that a radical operation should be done in every case of cancer of the lip, yet theoretically it was indicated. We spoke of palpable glands, but that did not mean anything. In such a case you might find many involved glands upon proper exposure, being too small to be felt. There lay the danger. With the *x*-rays we could doubtless eradicate a cancer of the lip, but was it the best procedure?

Dr. L. DUNCAN BULKLEY of New York said he had treated a large number of cases of epithelioma of the face, among them some with the *x*-rays, but not cases of epithelioma of the lip. In the *x*-rays we had an excellent method for treating lesions about the eyes and nose, but when the epithelioma was located on the lip he was inclined to agree with Dr. Engman that not only the cancer itself should be removed, but also the glands and connective tissue underneath the jaw.

Dr. ORMSBY said that, while his results with the *x*-ray treatment were perhaps not as good as Dr. Pusey's, still he was a warm exponent of the treatment. He had been able to keep some of his patients under observation for years, and in addition to the excellent cosmetic results the cures had been permanent. The results in the cases of epithelioma of the lip were very satisfactory, and he felt that for epitheliomata of the skin radiotherapy was the preferable method of treatment, providing, of course, the proper technique was employed.

Dr. PUSEY, in closing, emphasized the fact that he only recommended the treatment of epithelioma of the lip with the *x*-rays in selected cases, and then the selection should be made by an expert. Epithelioma of the lip should not be treated by anybody, whether by the *x*-rays or by surgical measures, unless the operator was an expert. He was simply advocating the proposition that in a considerable number of selected cases of epithelioma of the lower lip the *x*-ray was a perfectly eligible method of treatment, but it was a method which was liable to abuse if it was not carefully restricted to proper cases.

The Classification and Nomenclature of Cutaneous Syphilis.—Dr. GEORGE H. FOX of New York stated that in the diagnosis of syphilis the main point was to recognize the disease. The particular form or variety of eruption was of far less importance, but as this subsidiary diagnosis had often an important bearing upon the stage of the disease, upon the appropriate treatment, and upon the prognosis, it possessed value which was certainly worthy of recognition. Since we were all forced to classify in some manner, and to name the various forms of cutaneous syphilis, was it not possible for us to agree upon the best practical classification and to be in greater accord with one another in the use of names? To further such a desirable end was the aim of this paper. In describing the various syphilides most textbook writers,

even those with a large experience, were sadly hampered by what their predecessors had written. Their respect for authority and tradition was highly commendable, but it surely was unfortunate when it led them to a parrot-like repetition of terms and to the description of eruptions which they themselves had never seen. When we considered the common forms of syphilis, with which we were all so familiar, and omitted the rare, unique, and exceptional cases, seen scarcely once in a lifetime, did it not seem possible and practicable for the members of the American Dermatological Association to agree upon the use of certain terms, not only for our common convenience, but for the sake of our professional brethren who looked to us for guidance, and particularly that large class in which we were all interested—the future students of dermatology? Dr. Fox said that our present syphilitic nomenclature was both careless and confusing, and he emphasized the fact that a wide discrepancy existed between the commonly accepted description of many of the cutaneous manifestations of syphilis, as found in the textbooks, and their actual clinical appearance.

Dr. William Allen Pusey of Chicago said that absurdities in nomenclature were not confined to syphilis and skin diseases. Language was always in the making; names were given things upon the basis of associations that might become absurd to-morrow, and usage so established them that to undertake to change them would be fighting windmills. Dr. Pusey said he simply called attention to this aspect of the subject, although he was in favor of the suggestions made by Dr. Fox.

Dr. M. B. Hartzell of Philadelphia said that because a certain lesion was extremely rare it did not prove that it did not exist, and that was true of the vesicular syphiloderm. Therefore he thought it ought to be mentioned, rare as it was.

Dr Joseph Zeisler was inclined to agree with Dr. Fox that the term vesicular syphilide might well be discarded. In his own experience of thirty years he had never seen it, and while vesicular lesions could doubtless occur in a syphilitic subject they were probably simply a coincidence.

Dr. James M. Winfield of Brooklyn said the term tubercular syphilide gave rise to a great deal of confusion in the mind of the student, who naturally associated the name with tuberculosis of the skin. Referring to the so-called vesicular syphilide, the speaker said he had never seen it.

The Dry Treatment of Certain Moist Dermatoses.—Dr. Charles J. White of Boston said the therapeutic ideas embodied in this paper were not wholly original, as their chief source of inspiration was derived from Dr. M. F. Engman of St. Louis, who advised the liberal use of cornstarch powder and the administration of quinine forced to its uttermost limits in the treatment of certain moist dermatoses. In some of the cases reported by Dr. White this advice was followed literally; in others the internal medication was dropped and the patients improved quite as rapidly without the unpleasant symptoms often associated with the forced ingestion of quinine. The details of the treatment were as follows: During the acute stages of the disease the patient was put to bed and kept there until all or practically all moist surfaces had ceased to appear. If there were many lesions upon the dorsal surface of the body an air mattress was supplied and kept well inflated. All natural functions were carried on in the reclining position, and the patient ate, slept, defecated, urinated, and rested in this recumbent position. The food was restricted to soft solids and the abundant ingestion of water; the air of the apartment was kept as fresh as possible; bathing was not allowed; sleep was encouraged; medicines were administered only when special general symptoms demanded them and the pith of the whole method lay in the external use of a bland, antiseptic, inexpensive powder pushed to its extreme limit. All these qualities were contained in borated talc, which was the material employed in these cases. The application of the powder was made through a sifter, and every lesion on the body was drenched with this powder as often as any moisture showed itself. If the diseases affected the scalp the hair should be sacrificed. The patient should lie naked in the bed and the sheet and blankets should be supported on a frame, so that nothing touched the body but the powder. Dr. White then reported in detail a number of severe cases of pemphigus and dermatitis exfoliativa in which this dry treatment was used with marked success. In three cases of pemphigus two were relieved or cured; one died from an intercurrent disease. In six cases of dermatitis exfoliativa all were relieved or cured. Under the older miscellaneous methods of treatment employed at the Massachusetts General Hospital in eight cases of pemphigus five died and three were relieved or cured. In fifteen cases of dermatitis exfoliativa ten died and five were relieved or cured. Upon comparison Dr. White said these figures spoke for themselves, and he expressed the hope that the dry method might be given a trial when the physician was confronted with the serious problem of caring for those afflicted with these serious and often fatal forms of moist dermatoses.

Dr. S. Pollitzer of New York thought the most essential element of this method of treatment lay in keeping the patient covered with powder, which cooled the skin and exerted a soothing influence on the nerve ends. It contracted the blood-vessels, and acted as a universal antiphlogistic application.

Dr. Martin F. Engman of St. Louis said that one objection to this method of treatment was that it rendered the patient very uncomfortable for the first week, on account of the dryness and cracking of the skin. This could be largely alleviated by giving these patients an occasional colloidal or starch bath, with the addition of a little bicarbonate of sodium. The bath could be repeated every day or every other day, and then, after the patients had patted themselves dry, the powder could be reapplied. The speaker said he was firmly convinced that the dry treatment gave excellent results in some of these cases.

Dr. O. H. Foerster of Milwaukee said he had used this method in a case of generalized exfoliative dermatitis. After the powder had been applied for a short time the patient was very uncomfortable, owing to the marked "splitting" of the skin. The treatment was persisted in for ten weeks, with complete recovery.

Dr. White, in closing, said that crusting in these cases must be guarded against because if one left even a single focus of pus in the body the patient would not get well until this focus was healed. The treatment must be thoroughly carried out in all its details, and this could best be done in a hospital. In his experience these patients were not rendered very uncomfortable by the treatment, and he was opposed to the use of any moisture on the body.

A Recurrent Eczematoid Affection of the Hands.—Dr. S. Pollitzer of New York said that for several years he had been observing a form of dermatitis which was not mentioned in the works on skin diseases and was generally confused with nummular eczema. Yet the disease presented certain features which served, in his opinion, to separate it sharply from eczema and place it, perhaps, in the group of the bullous diseases, making it possibly a form of dermatitis herpetiformis, but of a type so mild and uniform that it deserved special consideration. Briefly, the disease was characterized by the occurrence of pruritic groups of resistant vesicles which entirely and uniformly covered the surface of small, round, or elliptical areas on the back of the hands and the sides and back of the lower portion of the forearms. It remained stationary, without extension or confluence or change of outline for several weeks, and then the lesions dried up, desquamated, and disappeared, to be followed after varying intervals by repeated recurrences of similar character. During the eruption there was a moderate eosinophilia.

Speculations as to the Causation of Eczema.—Dr. James C. Johnston of New York discussed this phase of the subject, and concluded that by a process of exclusion the causation of eczema might be narrowed down to a derangement of the nitrogen metabolism, neither anaphylactic nor a defective synthesis of urea, but occurring where for the moment biochemistry could not demonstrate it. Color was lent to this theory by the appearance in its course of allergic phenomena and urinary evidence of deamidization. Perhaps the fault lay in a failure of protein-splitting in the intestinal wall or the blood stream before the tissues selected their store of amino acid nitrogen.

The External Origin of Eczema, Particularly the Occupational Eczemas, as Based on a Study of 4,142 Cases.—Dr. Frank C. Knowles of Philadelphia read this paper and offered the following conclusions: (1) Fully one-quarter of all cases of eczema were of definite external origin. Almost one-sixth of all cases of this affection were caused by the occupation of the individual. (2) Microorganisms were apparently not the cause of eczema, but probably played a secondary rôle in the affection. (3) The largest number of cases of the so-called occupation eczemas were seen in the workers in the household, and next most frequently in laborers. (4) Practically every occupation and every irritant exclusive of occupation might produce an eczema. (5) The portions of the skin exposed to the irritant determined the site of the outbreak. (6) The eruption not infrequently extended beyond the irritated areas, at times being noted on distant parts of the cutaneous surface. (7) The usual type of eruption noted was the vesicular or the squamous. (8) The eruptions noted in this paper had lasted for weeks, months, or

years, and showed a marked tendency to relapse. (9) It was rather hard to explain the susceptibility of some individuals to certain irritants, while others were not affected, excepting on the theory of a personal idiosyncrasy, an anaphylactic tendency causing sensitization of the skin. (10) As dermatitis and eczema of external origin had the the same clinical and microscopical picture, they should be classed under the heading of dermatitis.

Dr. ZEISLER said that, after listening to these papers, he felt like presenting the etiology of eczema in a rather paradoxical vein, something like this: when we had a case of eczema of which we knew the cause, then it was not eczema; and when we had a case of dermatitis and did not know the cause, then it was eczema. After all, we were forced to agree with the sentiment voiced by Walker that in eczema we were confronted by a disease regarding whose etiology we were absolutely ignorant.

Dr. HARTZELL said that during the past century we had not learned a single fact bearing upon the internal cause of eczema, while, on the other hand, we had learned much about the external causes. He did not wish to be understood as denying the possible origin of this disease; on the contrary, there were certain cases which he thought were of internal origin, because we could exclude external causes, but what the internal factors were he did not know.

Dr. GEORGE T. JACKSON said that in teaching this subject he was accustomed to tell his students that eczema was due to an unknown internal cause plus an external irritant. Most of the so-called trade eczemas were dermatitides, many eczemas, however, were due to some unknown, internal cause, and he had seen cases of what he would term purely nervous eczema.

Dr. RAVOGLI said he had always insisted upon drawing a sharp line between dermatitis and eczema. He regarded a dermatitis as an acute affection, and that eczema began when the dermatitis ceased to be acute.

Dr. GRINDON said he regarded eczema as a peculiar type of inflammation, due to a wide variety of causes and analogous to catarrh of mucous membranes. He did not believe that these eruptions were due solely to an external irritant, because the fact remained that such an external irritant would not produce a lesion in everybody, for the reason that everybody's skin was not sensitized to it. One might handle formalin, for example, for a long time before the skin became sensitized.

Dr. ALFRED SCHALEK of Omaha said we might continue to discuss interminably whether the causes of eczema were internal or external, but the fact remained that whatever the causative factors were they were more or less present universally. In spite of this the majority of people escaped eczema, so that the conclusion was forced upon us that eczematous individuals must have a special vulnerability of the skin which unquestionably was in many cases inherited.

Dr. O. H. FOERSTER of Milwaukee said he was firmly convinced that many cases of so-called eczema were really due to external irritants, regarding the nature of which we were still ignorant.

Dr. HOWARD MORROW of San Francisco said that during the past year he had seen two cases of recurrent eczema developing after burns.

Dr. E. WOOD RUGGLES of Rochester, N. Y., mentioned a dermatitis connected with the photographic industry and due to platinum poisoning.

Report of Four Cases of Keratosis Follicularis (Darier's Disease).—Dr. W. H. MOOK of St. Louis reported these cases in detail and said that the unusual experience of treating three typical cases of keratosis follicularis in the St. Louis Skin and Cancer Hospital at the same time, and a fourth in the private practice of Dr. Martin F. Engman a short time previously, suggested to him that perhaps this disease was not as rare as had been claimed by the various writers on the subject.

Can Psoriasis Be Cured?—Dr. A. RAVOGLI of Cincinnati read a paper on this subject. He said it was unfortunate that so far we had not come to an understanding regarding the nature of the trouble, and that when we were able to establish the cause of psoriasis we would perhaps be able to treat the disease rationally. With the local application of chrysarobin and other irritating remedies the eruption usually disappeared, but only temporarily, and the irritation produced by these applications often gave rise to a dermatitis, in some cases followed by the recurrence of the psoriatic patches much larger and deeper than before. The same was true after *x*-ray exposure; the drying up of the epithelial elements caused temporary improvement, which was usually followed by the appearance of more stubborn lesions. Personally, Dr. Ravogli said, he had practically abandoned the use of chrysarobin, pyrogallol, or tar in these cases, for the reason that they caused too much discomfort to the patient, and he found that in ordinary psoriasis a white precipitate salve gave the best results. He also employed, with good results, subcutaneous injections of a 10 per cent. solution of cacodylic acid, repeating the injection two or three times a week. When the internal use of arsenic had no more effect in psoriasis he turned to potassium iodide. In many cases which had been treated for years with arsenic preparations, chrysarobin, etc., he had obtained brilliant results by giving potassium iodide internally and applying the white precipitate salve locally. Many of his psoriatic patients treated with these remedies had shown no recurrence for years, and had given him the idea that psoriasis was curable.

Granuloma Inguinale Tropicum; Report of Three Cases.—Dr. JOSEPH GRINDON of St. Louis reported three cases of this affection and offered the following conclusions: (1) The disease was a rare one in this country. (2) It was characterized by a striking conformity to type. (3) The adjective *tropicum*, as a part of the title of this disease, was not wholly justified. (4) The disease in this country was not mainly one of women, as Manson said was the case in the tropics. (5) The negro race was especially liable. (6) The question of contagion must remain open for the present. (7) The peculiar bodies described by Donovan and Carter were not constantly present in this disease. (8) Spirochetæ were not constantly present.

Report of a Case of Multiple Lymphoid Tumors of the Skin.—By Dr. JAMES M. WINFIELD of Brooklyn.

Books Received.

The MEDICAL RECORD *is pleased to receive all new publications which may be sent to it, and an acknowledgment will promptly be made of their receipt under this heading, but it must be with the distinct understanding that it is under no obligation to notice or review any publication received by it which in the judgment of its editor will not be of interest to its readers.*

CHRIST AMONG THE CATTLE. By FREDERIC ROWLAND MARVIN. Sixth Edition. 58 pages; cloth; price 50 cents. Sherman, French & Company, Publishers, Boston.

MANUEL PRATIQUE DE KINESITHÉRAPIE. By E. ZANDER. 188 pages; paper; illustrated; price 3 francs. Librairie Felix Alcan, Publishers, Paris.

FEVER NURSING. 7th Edition. By J. C. WILSON, A.M., M.D. 259 pages; illustrated; cloth; price $1.00. J. B. Lippincott Company, Publishers, Philadelphia.

A SYSTEM OF TREATMENT. Edited by ARTHUR LATHAM, M.A., M.D., F.R.C.P., and T. CRISP ENGLISH, M.B., B.S., F.R.C.S. Vol. I. GENERAL MEDICINE AND SURGERY. 1352 pages; illustrated; cloth. Vol. II. GENERAL MEDICINE AND SURGERY. 1335 pages; illustrated; cloth. Vol. III. SPECIAL SUBJECTS. 1194 pages; illustrated; cloth. Vol. IV. OBSTETRICS AND GYNECOLOGY. 883 pages; illustrated; cloth. Price $24.00 net. The Macmillan Company, Publishers, New York.

THE SURGICAL CLINICS OF JOHN B. MURPHY, M.D., AT MERCY HOSPITAL, CHICAGO. Vol. I, No. 2, April, 1912. 157 pages; illustrated; paper; price per year $8.00. W. B. Saunders Company, Publishers, Philadelphia and London.

THE SURGICAL CLINICS OF JOHN B. MURPHY, M.D., AT MERCY HOSPITAL, CHICAGO. Vol. I, No. 3, June, 1912. 174 pages; illustrated; paper; price per year $8.00. W. B. Saunders Company, Publishers, Philadelphia and London.

DIGEST OF COMMENTS ON THE PHARMACOPŒIA OF THE UNITED STATES OF AMERICA (Eighth Decennial Revision) AND ON THE NATIONAL FORMULARY (Third Edition). For the Calendar Year Ending December 31, 1910. By MURRAY GALT MOTTER and MARTIN I. WILBER. 784 pages; paper. Public Health and Marine Hospital Service of the United States, Publishers, Washington.

MONOGRAPHS OF THE ROCKEFELLER INSTITUTE FOR MEDICAL RESEARCH. No. 4. A Clinical Study of Acute Poliomyelitis. By FRANCIS W. PEABODY, M.D., GEORGE DRAPER, M.D., and A. R. DOCHEZ, M.D. 187 pages; illustrated; paper. The Rockefeller Institute for Medical Research, Publishers, New York.

ARCHIVOS BRASILEIROS DE MEDICINA. Second Year. No. 1. By Prof. JULIANO MOREIRA and Prof. A. AUSTREGESILO. 166 pages; illustrated; paper.

ARCHIVOS BRASILEIROS DE MEDICINA. Second Year. Supplement to No. 1. By Prof. JULIANO MOREIRA and Prof. A. AUSTREGESILO. 95 pages; illustrated; paper.

BLOOD PRESSURE TECHNIQUE SIMPLIFIED. By W. H. COWING, M.D. 122 pages; cloth. Taylor Instrument Companies, Publishers, Rochester, N. Y.

Medicolegal Notes.

Evidence of Employment of Physician by County—Physician Cannot Delegate Duties Under Contract.—A physician who had treated members of a poor family unable to pay for further treatment, informed the town member of the board of supervisors, who told him to continue the treatment, and the supervisor would present the physician's bill to the board. The treatment was continued. The town board of health moved to certify the bill to the board of supervisors, which refused payment. This was held to sufficiently show that the person treated was an indigent person. Whether she was or not, the physician was legally employed, and entitled to recover from the county.

It was also held that a physician who has a contract with a health board to treat certain poor persons cannot hire another physician to do the actual work, and then collect from the county for such other physician's services. But where the contracting physician has furnished medicines of an unusual character for an unusual disease, he is entitled to recover therefor, though they were administered by another physician employed by him, who performed the actual treatment.—Chapman v. Board of Supervisors, Michigan Supreme Court, 134 N. W. 1025.

Osteopaths — Licensing — "Practice of Medicine" — Scientific Training—Single Treatment.—A defendant held upon an information charging him with practising medicine for money by treating a named patient for hay fever by osteopathy, without having registered his authority, as required by the Texas statute of 1907, Chap. 123, denied the constitutionality of the act. The United States Supreme Court (Mr. Justice Holmes giving the opinion) upholds its constitutionality. The act requires all unlicensed practitioners to prove their diplomas or exemption, and receive a verification license. Other applicants must pass an examination conditioned, among other things, on their being graduates of "bona fide reputable medical schools." The examinations are to be fair to every school of medicine, without discrimination against any particular system, and the act does not apply to dentists, nurses, masseurs or to United States army and navy surgeons, etc., in the performance of their duties. A person practising medicine within the meaning of the act includes, by section 13, one who treats or offers to treat any mental or physical disease or disorder, or physical deformity or injury, by any system or method, or to effect cures thereof and charge therefor.

Before the passing of the act the defendant had a remunerative practice as an osteopathist. He held a diploma from a chartered school of osteopathy, but it did not appear that he presented this diploma to the board of medical examiners, or attempted to secure a verification license or a license in any form. The board, in passing upon qualifications, does not examine in therapeutics or materia medica, which are not mentioned in the act. On these facts the Supreme Court was of opinion that the defendant had failed to show that the statute inflicted any wrong upon him, contrary to the fourteenth amendment. The court did not consider the definition of practising medicine contained in section 13 of the act as arbitrary or irrational, as contended by the defendant, and followed the Texas court in holding that the defendant was included therein. It presumed, until the Texas court should say otherwise, that the defendant's diploma would not be rejected merely because it came from a school of ostoepathy. Whatever may be the osteopathic dislike of medicines, neither the school nor the defendant suffers a constitutional wrong if his place of tuition is called by the act a medical school for the purpose of showing that it satisfies the statutory requirements. An osteopath professes to help certain ailments by scientific manipulation affecting the nerve centers. It is intelligible, therefore, that the state should require of him a scientific training. He, like others, must begin by a diagnosis. It is no answer to say that in many instances the diagnosis is easy—that a man knows when he has a cold or a toothache. For a general practise science is needed. An osteopath undertakes to be something more than a nurse or a masseur, and the difference rests precisely in a claim to greater science, which the state requires him to prove. The same considerations that justify including him justify excluding the lower grades from the law. It was no answer to say that the defendant was prosecuted for a single case. If the legislature could prohibit a general practice for money except on the condition stated, it could attach the same conditions to a single transaction of a kind not likely to occur otherwise than as an instance of a general practice. The distinction between gratuitous and paid-for services did not render the act invalid. This was sustained in the case of a Maryland statute in Watson v. Maryland, 218 U. S. 173, 30 Supreme Court, 644. Nor was the law made invalid as against the defendant by the fact that he had an established business when the act was passed. Collins v. State of Texas, 32 Supreme Court, 286.

Medical Expert May Base His Opinion of Skill Upon Results of the Treatment.—Action was brought for damages for the alleged negligent and unskillful treatment of a Colle's fracture of the tip of the radius and the ligaments of the wrist joint. This fracture was an aggravated one. The defendant diagnosed the case correctly, and treated the injured wrist by the application of splints and bandages, with the object of effecting a reduction of the fracture and a union of the bones. About six weeks after the accident the defendant determined that a union had taken place, removed the splints and bandages, and ceased treating the plaintiff. At the time of the trial the hand was in an abnormal, deformed position, the plaintiff had little or no use of the hand or fingers, and continued to suffer pain

The result, whether of the fracture, or of the treatment, was admitted, by the defendant, to be bad. The evidence of negligence or unskillfulness was the tesimony of experts, based wholly on the result. The negligence of a physician or surgeon cannot be inferred from a poor result alone. There must be evidence from expert witnesses tending to show improper or unskillful treatment, in order to sustain a charge of malpractice against the physician. But an expert witness may base his opinion that the treatment was improper wholly on the result, and such an opinion is evidence on which the court or jury may find negligence. The inference of negligence, in such a case, is not drawn from the result, but from the evidence of the experts.—Sawyer v Berthold, Minnesota Supreme Court, 134 N. W. 120.

Undue Discrimination Against Expert Evidence in Charge of Jury.—In an insurance case the jury were instructed by the trial judge that it should consider the medical expert testimony which had been introduced as to the result of an autopsy, etc., with great caution; that they should make a painstaking investigation of all the facts, to reach the truth, and must not be confused or misled by such testimony, because while such testimony is sometimes the only means or the best way to reach the truth, yet it is largely a field of speculation, beset with pitfalls and uncertainties, and requires patient and intelligent investigation. On appeal the Tennessee Supreme Court held this instruction to be erroneous, as discriminating too strongly against such evidence. It was, moreover, error to warn the jury that they must not be misled or confused by expert evidence.

In regard to hypothetical questions, an instruction that the jury, in weighing the answers of medical experts to hypothetical questions, must look into all the evidence, and determine whether the facts supposed to exist in the questions asked did actually exist, because, if one fact supposed to be true included in hypothetical questions is really untrue (*i. e.* not supported by the evidence) then the opinion of the expert would be valueless, was held to be proper.—Fisher v. Travelers' Ins. Co., 138 S. W., 316.

Practising Without a License for Jury Where Evidence Does Not Conclusively Show Guilt.—In a trial for practising medicine without a license the testimony of the defendant, when examined as a witness in his own behalf, tended to show that he had not treated or offered to treat any disease of any human being in any way whatever "but that he merely made his medicine or tea from roots and herbs gathered from woods near by, and sold to people who came to his tent for it." As the evidence as a whole did not show guilt it was held that an affirmative charge in favor of the state should not have been given, the question of guilt being then for the jury.—Carter v. State, Alabama Court of Appeals, 57 So., 1022.

Is Chronic Appendicitis an "Illness"?—An application for an accident insurance policy warranted that the applicant had never received indemnity for any accident or "illness" except for a broken ankle. He had, in reality, been operated upon for chronic appendicitis, and had received from another company an indemnity for the time he was away from business on that account. "Illness" has been judicially defined in connection with insurance, as "a disease or ailment of such a character as to affect the general soundness and healthfulness of the system seriously and not the mere temporary indisposition which does not tend to undermine or weaken the constitution of the insured." It was held that the question whether the operation for chronic disposition was an illness falling within this definition was one for the jury.—Miller v. Maryland Casualty Co., C. C. Q., 193 Fed., 343.

Miscellany.

INDIVIDUALISM AND SOCIALISM IN MEDICAL ECONOMICS.

In the latter-day discussions regarding the relationship of the medical profession to the public, there are discernible two contrasting attitudes. In one of these the practitioner is urged to break away from the traditional self-immolation which has been associated with the peculiar humanitarian aspect of his vocation, and to adopt the methods of the modern business man in exacting an adequate fee from those who are able to pay it. This attitude also protests strenuously against the encroachment of public authorities on the domains that should rightly belong to the general practitioner, the over-ambitious exertions of health boards, and the nationalization of contract practice. The protest against the last tendency is seen to-day in the refusal on the part of the organized profession of Great Britain to have anything to do with the new scheme of national insurance, except upon terms that are satisfactory to the practitioners. The other attitude would place all medical practice under the direct control of the government and by eliminating the competitive business aspects of the practice of medicine, would virtually make all physicians employees of the State. The two opposing methods of attacking the economic problems associated with the healing art may be characterized as the individualistic and the socialistic conceptions. The individualist protests against the exploitation of the physician's skill by the general public; the socialist would appropriate by the right of eminent domain the talents of the medical profession. In the two articles abstracted below there are presented the main arguments of the opposing schools of "medical economists."

The Integration of the Medical Profession.—W. F. Campbell states that "social unrest, agitation, and dissatisfaction are the 'growing pains' of the body politic." The criticism of abuses in the medical profession is a sign of progress. These abuses are the secret division of fees; lodge practice; contract practice; and health board, hospital, and dispensary abuses. These are due to structural weaknesses in the profession itself. The vaunted altruism of the physician's calling has been overdone and has pauperized both the community and the profession. The latter itself must be solvent before it can with honor dispense its charities. The medical profession can correct its own abuses. If abuses exist in a dispensary they can be ended if the physicians refuse to attend this dispensary. The term "medical ethics" has provided a phantom bulwark behind which just issues are often evaded. "Medical ethics is only the golden rule crystallized into professional conduct. It does not imply self-immolation, emasculation, or the dethronement of professional dignity." The solution of the economic problems of the medical profession require an efficient organization, whose primary object should be the study of these problems. E. Elliot Harris of New York has promulgated a plan of organization which will be tried out in selected districts, and which if it meets with favor will be extended throughout the State of New York. In this plan it is proposed to establish a society of duly licensed physicians without regard to their designated school of practice, to be known as "The United Medical Societies of the State of New York." The purposes of this society as defined by Dr. Harris are: "(1) The enlightenment and direction of public opinion in regard to all economic matters in which the medical profession is concerned. (2) The maintenance of a high, uniform standard of medical education for all licensed physicians, for the protection of the public health, and for the proper care of the sick and injured. (3) The betterment of the economic conditions of the practising physician. (4) To assist in the enactment and enforcement of the medical and pure food laws. (5) The furtherance of the economic interests of the medical profession of the United States by friendly cooperation between the States." The plan of organization contemplates the establishment of local societies representing senatorial districts, the local societies sending delegates to the general assembly. There will be a central office in New York City in charge of a salaried executive officer whose duty it will be to visit and organize local societies, receive reports, and take under advisement the various medico-economic problems which confront the local societies.—*Long Island Medical Journal*, July, 1912.

What Is the Matter with the Medical Profession?—J. P. Warbasse makes a plea for the nationalization of medical practice on a socialistic basis. He finds that the chief trouble with the medical profession is that the doctor is a private tradesman engaged in a competitive business for profit. Just as the schools, the highways, the water supply, etc., have been removed from the hands of competitive business, so the public health should be organized throughout as a public service. The criminal and the pauper now receive the attention of the State. Why should not this attention be accorded also to the sick man? The latter is a social problem, and should not be left to the mercy of the business methods in medical practice. These methods are steadily on the increase, corresponding to the increasing pinch of economic necessity. "The doctor has his talent to sell. He is in the market. The competition is fierce. Most doctors are capable and able to deliver the goods. But comparatively rarely can they afford to give the time to do the best possible thing for the patient. . . . The general practitioner who neglects the methods of the tradesman, even though he gives to his patients the benefit of surpassing skill and knowledge, is apt to languish for a clientèle. He is surrounded by the competitive system, and unless he conforms to the methods of the warfare about him he must go down." The author cites the example of the Medical Corps of the Army and Navy, in which a high standard of efficiency is maintained. "Soldiers receive the best medical attention, not as a charity, but as a right." On the other hand, the workers who do the work of the world, are called "hands," and are "consumed as so much raw material to be fed to the flames of commerce." The reason for the difference of attitude of the nation toward the soldier and the worker is that the latter has "only just emerged from serfdom, while the soldier has behind him the prestige of many thousand years of fatuous superiority." Quackery is one of the results of the competitive system in medical practice. Moreover, the doctor who is engaged in the competitive struggle for a livelihood is least apt to contribute to the progress of science. Human life and happiness should be objects of solicitude on the part of the State, in whose employ the medical profession should be enlisted "as the great conserver of

the most precious of the nation's natural resources."—*Long Island Medical Journal*, July, 1912.

The Young Physician.—The "Night Call" is the title of a charming bit of fiction by Henry Van Dyke. The chief feature of this story is the pen picture of the young country practitioner, Leroy Carmichael, who came back to his home town to practise medicine after a thorough preparation in a medical school and hospital. He "arrived well accredited, and was received in his first year with many tokens of hospitality in the shape of tea parties and suppers. But the final and esoteric approval of Calvinton was a thing apart from the mere fashionable courtesies and worldly amenities, a thing not to be bestowed without due consideration and satisfactory reasons. Leroy Carmichael failed, somehow or other, to come up to the requirements for a leading physician in such a conservative community. He was brilliant, perhaps, a clever young man; but he lacked poise and gravity. He walked too lightly along the streets, swinging his stick, and greeting his acquaintances blithely, as if he were rather glad to be alive. Now this is a sentiment which Calvinton regards as near akin to vanity, and, therefore, to be discountenanced in your neighbor and concealed in yourself. How can a man be glad that he is alive, and frankly show it, without a touch of conceit and a reprehensible forgetfulness of the presence of original sin even in the best families? The manners of a professional man, above all, should at once express and impose humility. Young Dr. Carmichael had been spoiled by his life in New York. It had made him too gay, light-hearted, almost frivolous. It was possible he might know a good deal about medicine, though doubtless that had been exaggerated; but it was certain that his temperament needed chastening before he could win the kind of confidence that Calvinton had given to the venerable Dr. Coffin, whose face was like a tombstone and whose practice rested upon the two pillars of podophyllin and predestination."

The same story contains another excellent example of the author's knowledge of medicine and of the wonderful gift of word-portraiture in his description of an attack of angina pectoris. The patient, a woman past middle age, is telling the doctor about her sudden illness during the night. "'It was the first time—like a flash of lightning—an ice-cold flame of pain—.' Even as she spoke a swift and dreadful change passed over her face. Her color vanished in a morbid pallor; a cold sweat lay like death-dew on her forehead; her eyes were fixed on some impending horror; her lips, blue and rigid, were strained with an unspeakable, intolerable anguish. Her left arm stiffened as if it were gripped in a vise of pain. Her right hand fluttered over her heart, plucking at an unseen weight. It seemed as if an invisible, silent death wind were quenching the flame of her life. It flickered in an agony of strangulation."—*Harper's Magazine*, August, 1912.

Heine and Homeopathy.—The following anecdote of the German poet is related in Ughettis' "With Physicians and Clients": Returning from a journey to the south of France, Heinrich Heine met a friend, a German violinist, in Lyons, who gave him a large sausage that had been made in Lyons with the request to deliver it to a mutual acquaintance, a homeopathic physician, in Paris. Heine promised to attend to the commission and intrusted the delicacy to the care of his wife, who was traveling with him. But as the postchaise was very slow and he soon became very hungry, on the advice of his wife both tasted of the sausage, which dwindled with every mile. Arriving at Paris, Heine did not dare to send the remainder to the physician, and yet he wished to keep his promise. So he cut off the thinnest possible slice with his razor, wrapped it in a sheet of vellum paper and inclosed it in an envelope, with the following note: "Dear Doctor—From your scientific investigations we learn that the millionth part of a certain substance brings about the greatest results. I beg, therefore, your kind acceptance of the accompanying millionth part of a Lyons sausage, which our friend gave me to deliver to you. If homeopathy is a truth, then this little piece will have the same effect on you as the whole sausage. Your Heinrich Heine."—*Medical Review of Reviews*, August, 1912.

Physical Examination of Motorists.—F. M. Bogan states that in Germany legislation provides for the physical examination of persons applying for motor licenses. This examination is much more rigid than might be expected. Of course, nearly normal vision and hearing are required. Those having squinting or astigmatic eyes, the color blind, and the night blind are rejected. In the case of hearing, the whispered voice must be heard at nine feet. Especial attention is paid to the detection of those suffering from neurasthenia, giddiness, or insanity—these of course being barred. The arm and the leg most used in operating a machine must be normal, and in case the applicant has lost one or more fingers, or has deformities of the hand, he is given an opportunity to demonstrate his fitness or unfitness for driving a car. The provisions of this examination are so eminently sound and practical that the general adoption of regulations along the same lines would, in the author's opinion, very greatly reduce the excessive number of automobile accidents in this country.—*Lippincott's Magazine*, September, 1912.

In the Tool-Box of the Automobile.—Besides the special tools given with each make of car, and usually adapted especially to its particular parts, there are always a few handy things of general usefulness which the motorist can with profit carry. A small pocket electric torch is extremely convenient, for examining the amount of "gas" in the tank at night, for instance, and can be bought for a dollar or less. A small monkey wrench, such as is made for use on bicycles, is often convenient, as it is but half as thick in the jaws as the regular style, and will fit some places which would otherwise take only a thin "spanner." A small funnel, probably of copper, tinned inside, is useful for filling the oil tank. With the equipment of the car comes usually an oil can which is often too large for ordinary use. For "touching up" such places as the spark and throttle levers and oil holes in various places a small oiler such as is used for sewing machines and other light machinery will be found of considerable value. Special benzine cans, approved by the boards of fire underwriters, are sold for the use of tailors, printers, etc. The one-pint size to carry gasoline for cleaning hands, spark-plugs, and anything else will be found of the greatest convenience. It is safe as regards the risks usually incident to gasoline and is most readily accessible. No one who has once carried this accessory will ever dispense with it.

Medical Record

A Weekly Journal of Medicine and Surgery

Vol. 82, No. 13.
Whole No. 2186.

NEW YORK, SEPTEMBER 28, 1912.

$5.00 Per Annum.
Single Copies, 15c.

Original Articles.

THE UNJUSTIFIED PREJUDICE OF TUBERCULOUS PATIENTS AGAINST SANATORIA AND HOSPITALS.

By S. ADOLPHUS KNOPF, M.D.,

NEW YORK.

PROFESSOR OF MEDICINE, DEPARTMENT OF PHTHISIOTHERAPY IN THE POST-GRADUATE MEDICAL SCHOOL AND HOSPITAL, NEW YORK.

ANY physician, be he general practitioner or consultant, who has to deal with tuberculous patients and who considers sanatorium treatment to be indicated in many cases, will be confronted frequently, perhaps in the majority of the cases which come under his observation, with a type of fear or preconceived dislike for institutional treatment, which for lack of a better name we may call sanatoriumphobia or hospitalphobia. This fear of institutional treatment amounts, in some individuals, to a veritable horror. The first thought with which this sanatoriumphobic individual is possessed is the idea that he is sure to meet patients much sicker than he himself who are real consumptives, while he imagines himself to be only slightly tuberculous. Perhaps it is only in the presence of the physician who diagnosed his case that he is willing even to admit that he may be tuberculous. This peculiar state of mind which consists in not wishing to be classified with other tuberculous patients or only with those having weak lungs, is pardonable although characteristic.

It seems that a typical tuberculous patient does not like anything better than to find some physician who, in spite of the positive diagnosis of several others, confirmed by positive sputum tests, will declare that he only has weak lungs. I remember a case referred to me by a most excellent diagnostician for confirmation of diagnosis and advice for treatment. The patient, a few weeks before, had had a profuse hemoptysis. There was not the slightest doubt as to a positive diagnosis. I made arrangements for his reception in a sanatorium, and the young man, who was engaged to be married, promised me faithfully to remain in the sanatorium at least one year, and only to think of marrying after his case would have been declared to be absolutely arrested. Imagine my surprise when, two weeks later, the sanatorium physician sent me a letter which the patient had written him wherein the family physician, another consultant, and myself were denounced in no gentle terms and the arrangements for sanatorium accommodation cancelled; and all this because a life insurance examiner had declared the young man sound and well and had accepted him at a very low risk.

When the patient's fear of reinfection is argued out of him, when he is told that the well equipped sanatorium is the safest place not to contract the disease, that the precautions there preclude a possibility of becoming reinfected, he will bring forth another excuse for not wanting to go to a sanatorium. He will say that he is unable to bear the sight of other patients more ill than himself; he will fear the depressing influence of constant coughing and perhaps even of seeing a patient hopelessly ill or in a dying condition. When the physician will have assured him that there is less coughing in a sanatorium than there is during a grippe epidemic in any street car of an average sized city; that if there are any patients more ill than he, he will not see them; that the sanatorium has only relatively early cases; that the spirit, the mental atmosphere of the sanatorium is one of hope, contentment, and even gayety, the prospective sanatorium candidate will bring forth a third excuse. He will say, "But, Doctor, I shall be stigmatized. If it becomes known that I am tuberculous and an ex-patient of a sanatorium, I will be ostracized. My former employers will not wish to take me back into their office or shop." That there is some justification in this excuse for sanatoriumphobia we must admit, for here we approach the subject of phthisiophobia, which, alas, is still rampant in some sections of the country and among some people who have not informed themselves of the fact that the honest, conscientious consumptive, particularly the one trained in the sanatorium, is not a menace to his fellow-men, and that to the arrested or cured case with absolute freedom from bacilli all avenues to work and society should be open.

The object of my paper to-day, my reason for publishing it, giving it as wide a circulation as possible, and placing it in the hands of sanatorium physicians and others interested in the cause, is to remove this unjustified fear of tuberculous patients who have to enter the sanatorium. I should like to convince the patient that he need not fear being ostracized if he will but do his duty. I cherish also the hope that this modest effort on my part, but above all the valuable contributions to my plea which have come to me from leading sanatorium directors, will convince employers and others that phthisiophobia is unjustifiable and that to exclude the cured and thoroughly arrested case from any employment is cruel, unjust, and inhumane.

Last, but not least, I trust that after reading this little contribution, prospective patients will see that their fears of becoming infected or reinfected in a sanatorium are totally unjustified; that life in a sanatorium is far from depressing; that on the contrary, an atmosphere of hope, cheer, and good comradeship prevails in sanatoria; and that they themselves can contribute to this in no small degree by determining to get well, obeying implicitly the rules of the institution, being of a hopeful and cheerful frame of mind, sympathetic and kind to their fellow patients.

*Read before the Sociological Section of the National Association for the Study and Prevention of Tuberculosis, at its annual meeting in Washington, May 30, 1912.

To have the statements I am going to make as authoritative as possible, I addressed the following questions to a large number of physicians at the head of American and Canadian sanatoria: Has there ever been an authentic case in your institution of a healthy visitor or employee (physician, nurse, or helper) having contracted tuberculosis during his sojourn in the sanatorium, and if so, how many cases have you on record, and covering what period of time? Have you observed among the patients who have come to the sanatorium any who have left the institution shortly after their arrival because they found the association with other patients unpleasant? Do you know of any patients who have suffered from social or business ostracism after having left your sanatorium, either cured or arrested?

With a courtesy characteristic of men working in sanatoria for the tuberculous, they not only sent me answers to all my three questions, but many of my friends among the sanatorium directors have added individual expressions of opinion on the subject under consideration, of incalculable value because they were based upon actual, personal experience, in many instances covering a great many years.

From the oldest and best known institution, founded by our beloved Trudeau 25 years ago, Dr. Lawrason Brown, the resident physician, wrote me the following instructive lines. To question 1, he answered "no"; to question 2, he answered "yes," and added: "We have had a number of patients come to Saranac Lake village, form attachments and then finally on their turn for admission to the institution, get very much displeased with the strict discipline to which we subject them at first and leave because they wanted to arrange their life in a way of which we did not approve. Usually, after the patients have been here a week they are perfectly willing to stay. It is only at first that the trouble arises." To question 3, he answered "yes," and added: "There are a number of patients who have suffered from social and business ostracism, after having left the sanatorium either cured or improved. We have to take this into consideration in writing to our former patients and we make it a rule never to write on our letterheads the name of the institution or the name of Saranac Lake. Several patients have written to us complaining very bitterly that they have lost their places. For this reason we never publish in any paper or in any magazine, the name of any patient who has ever been connected with the institution. There is no doubt there is a general feeling against the tuberculous patient, whether well or not, whether careless or careful. I believe, however, that as knowledge spreads, there will be less trouble but certainly to-day there is a great deal."

Dr. G. Walter Holden of the Agnes Memorial Sanatorium at Denver, Col., answered to question 1, "no"; to question 2, "no"; to question 3, "no," and added: "On the contrary, people owning homes and wishing to take boarders have frequently written or telephoned me that they would be very glad to take patients leaving the sanatorium, as they felt very much safer in so doing than to take health-seekers coming to Colorado and not having had sanatorium training. In health communities, like Denver, certain hotels and boarding houses advertise that they do not accept tuberculous patients. While this is not always borne out by facts, it has a tendency to make tuberculous people more or less dishonest in denying that they have the disease, knowing that they can obtain admittance to these places by stating they have bronchitis or asthma, if they have any suspicious symptoms at all. I am of the opinion that our tuberculosis associations do not go quite far enough in their instructions and statements to the public. A recent example of this that has come to my attention is the case of a young man from New Jersey, who, while an incipient case, was not willing to make the fight to recover his health. The limited statements and injunctions regarding the disease that had come to his notice had made him feel like a leper or outcast. He was swallowing his sputum because he so interpreted a statement on the back of a street car transfer to the effect that spitting was prohibited. A great deal of the literature handed out by health organizations has a tendency to make the afflicted feel that they are more or less ostracized, because of the incomplete knowledge gained, and this interpretation is accepted by most of the general public not familiar with the disease. I also think that those of us who are working with tuberculosis all the time are somewhat inclined to overlook the fact that notwithstanding the wide campaign that is being carried on, the general public is so profoundly ignorant that our technical advice frequently overshoots the mark."

Dr. W. Jarvis Barlow of the Barlow Sanatorium at Los Angeles, Cal., answered to question 1, "no"; to question 2, "no"; to question 3, "no," and added: "We do not know of any case in which a patient after his discharge from the Barlow Sanatorium has suffered any degree of ostracism, either social or business detriment. On the contrary, many instances might be mentioned in which individuals have profited in this respect as a result of previous residence in the sanatorium, *e.g.*, nurses who have been led to the possibility of better employment when they were known to be so-called 'cured cases.' We find that the intelligent public is ready to accept the assurance of physicians that any patient is well and no longer a source of danger to the people about."

Dr. M. J. Brooks of the Brooks Sanatorium at New Canaan, Conn., answered to question 1, "no," and added: "There certainly cannot be a case here of infection between the patients or any of the staff. The discipline would preclude the very thought of such a proposition." To question 2, he answered "no"; to question 3, "no."

Dr. Jas. D. Brooks of The Bungalows, San Angelo, Texas, answered to question 1, "no"; to question 2, "no"; to question 3, "no," and added: "To the best of my knowledge there has been no such instance. With respect to San Angelo and the vicinity quite the contrary is true, a patient discharged from the institution being received universally with greater readiness than people only suspected of having tuberculosis."

Dr. Alexius M. Forster of Cragmor Sanatorium, Colorado Springs, Colo., answered to question 1, "no"; to questions 2 and 3 he answered "yes," and added: "I feel that the second question, as well as the first, still tends to keep many patients out of institutions. The sanatorium is frequently associated in the patient's mind with the poorhouse or the insane asylum. In the East in my work with the poorer classes I frequently had to deal with an unreasoning fear of all institutions, while out here with the well-to-do I often find that they prefer boarding-house life. While the fear of stigma attached to sanatorium life does not altogether account for this attitude, I am sure that it plays quite a part. Some patients often try to keep up the pre-

tence of refusing to admit, even to themselves, that they have tuberculosis, and others, while acknowledging it to themselves, refuse to admit it to others. In considering the subject I am sure it has occurred to you that a great deal of harm results from this attitude. I have known of boarding houses and hotels where sputum cups and all sanitary precautions are tabooed, and where patients in order to gain admission are compelled, not only to lie, but also to disregard all sanitary precautions. On the other hand, familiarity breeds contempt, and in some of our resorts there are many places where sanitary precautions are either very lax or are disregarded simply through carelessness. In regard to the third question, I can recall a number of cases where former patients were refused employment because of the fact that they had had tuberculosis. This, of course, was not because they had been inmates of institutions, but only because their residence in such a place published the fact that they had had the disease. The above applies particularly to women who seek employment in the home and in my experience more rarely affects men. In this connection I should like to call your attention to the policy of certain institutions of refusing to employ persons who have tuberculosis. It has always been my policy to give the preference to those who had the disease, always provided that they were in a condition to work. It is true that such a policy is more expensive and requires a great deal more worry and supervision on the part of those in charge. But I have always felt that since we send our patients out to take their places in the world it is our duty to prove that they can be restored to a condition of economic usefulness, and surely there is no better way of proving this than by force of example. I feel that the wonderful campaign of education carried on by yourself and the other leaders in our work is doing much to get rid of the ignorance and prejudice with which your paper is to deal, but it is only by constant reiteration of the simple truths that the end will be reached."

Dr. Martin F. Sloan of the Eudowood Sanatorium, at Towson, Md., answered to question 1, "no"; to questions 2 and 3 he answered "yes," and added: "We have had during the period of two years at least twenty cases to leave because they were afraid they would develop more trouble than they at that time had. This has been especially true in our advanced wards where the ambulent cases become frightened at the bed cases, though the former might have as much involvement as the latter, even if their symptoms were not as pronounced. Several ex-patients have told me of their difficulty to get suitable lodgings on account of their having been in a sanatorium. One man was forced to leave three different houses after it became known that he had been at Eudowood. Two known cases have had to seek employment elsewhere. On the other hand, however, I have been glad to learn from several business men that they would willingly employ patients, as they felt that they would be a valuable asset among their working men rather than a detriment, as they had had instructions on lines of prophylaxis and sanitation. I might add further that it seems to me that during the last year some of this phthisiophobia has disappeared and this can be attributed, I believe, to the wide publicity that has been given to this sanatorium and the methods pursued here. Of course, I am speaking of conditions as they come to me."

Dr. Theodore B. Sachs of the Edward Sanatorium at Naperville, Ill., answered to question 1, "no"; to question 2, "no," and to question 3, "yes," adding: "Some orphan asylums or homes reluctantly readmit or refuse admission to children discharged from sanatoria; they do not inquire if the case is open or closed; the mere fact of their having been in a sanatorium bars them. We had to do considerable educational work among the managers of such institutions to have them differentiate between communicable and non-communicable cases, 'closed and open cases.' Considerable educational work must be done among employers of labor. This we are trying to do now through the medium of the committee and factories. Much of the unjustified fear is due to the fact that the patient frequently does not know the nature of his ailment; the doctor considers it a good policy to call it 'a cold,' 'bronchitis,' etc. When the sanatorium man examines the patient he is frequently warned not to tell the patient the nature of his trouble. We certainly agree that the patient should know the diagnosis, that the diagnosis should be stated in a kind, encouraging way, and that with the patient knowing the nature of his ailment, his cooperation is more readily secured and the battle is half won."

Dr. David R. Lyman of the Gaylord Farm Sanatorium at Wallingford, Conn., answered to question 1, "no"; to questions 2 and 3 he answered "yes," adding: "Quite a few patients have left on account of incompatability of other patients. Only closest care in placing patients can guard against this. The occasional careless patient (which we meet at times in all sanatoria) makes me quite a little trouble in this way. As a rule the friends and fellow employees of our discharged cases have been most ready to extend full cooperation to these cases after their return to work. In a few cases, however, this ostracism has been carried to the point of absolute cruelty and is by no means a negligible factor. The worst case of this I have known of was incited by the doctor who was the local health officer!"

Dr. Ralph Apted of the Grand Rapids Municipal Sanatorium, Mich., answered to question 1, "no"; to question 2, "no"; to question 3, "no."

Dr. Horace Greeley of the Hill Crest Open Air Sanatorium at Hackensack, N. J., answered to question 1, "no"; to question 2, "no"; to question 3, "no."

Dr. Robert B. Homan of the Homan Sanatorium at El Paso, Texas, answered to question 1, "no"; to question 2, "yes," and added: "I had one patient leave the institution after being here only one night, giving as a reason that she could not stand to be around so many sick people, but she has engaged a room to try again right soon." To the third question he replied "no," adding: "I have never found that the fact that I had suffered with tuberculosis and had spent nine months in a sanatorium has had any effect upon my reception into society or the business world. Of course, this is a health resort town, and a large percentage of our population come here because of the health of some member of the family, and on that account conditions may differ in the East, but I do not believe that the fact that one has had tuberculosis would incline people to refuse to accept them into social or business circles any more than would typhoid or any other serious illness."

Dr. Herbert M. King of the Loomis Sanatorium at Liberty, N. Y., answered to the first question "no"; to question 2, "yes," and added: "Very

rarely some hypersensitive and neurotic patient has left the institution very shortly after admission, ostensibly because of the associations. Such patients are not desirable in any case, and the few who make up the number would probably not benefit by sanatorium residence. It has been my intention to get an expression from several patients who have come into the sanatorium reluctantly and with more or less antipathy, and who have, as is usually the case, been won over to the enthusiastic cooperation in treatment, but I have not as yet had an opportunity to get more than two, which I enclose herewith. One is, as you see, from Miss X, a rather intelligent young woman connected with the Metropolitan Life Insurance Company, who had to be almost coerced into coming. As you see, she is in our intermediate division. The other letter is from Miss Y, whom you know, a sister of Dr. Y. She has just left the sanatorium 'apparently cured'—probably to resume her teaching next fall. She has always been reasonable, and this note of hers, which came unsolicited, gives you an impression of what an intelligent, educated and, at the same time, sensitive Quaker girl thinks of us:

"'My dear Dr. King:—I have been thinking over some of the harsh and unkind thoughts that I had in mind about sanatoriums when I first heard I had to come to Loomis, and thought you would like to know how my opinions have changed. I could almost picture a place where there were so many very sick people; so ill even in their appearance that it would only make me feel worse to have to mingle with them. Instead I found many congenial people, with red, rosy cheeks, and able to do as much, even more than I could myself. I have been here at Loomis just nine weeks and have gained in weight, health and appearance, and in every way have felt the benefits of Loomis. I also realize that the rigid discipline, careful medical attendance, regular meals, exercise and sanitary habits are the cause of my improved health and know that we could never follow the same rules at home, no matter how good our intentions. Trusting that anybody with the same fixed, disagreeable thoughts that I had before entering Loomis will benefit by my experience and find the pleasant surprise that is in store for them to aid in regaining their health,

"'Very sincerely,

"'X.'

"'My dear Dr. King:—Though I thought of no more questions that I wanted to ask you, I intended to try to see you in the evening to bid you good-bye, but it did not come to pass; so I am writing to tell you that my long stay at Loomis has been really a happy one, for the most part at least, and that I shall have many pleasant memories of it, including you and your kindness to me. With many good wishes to you personally, and many thanks for what you and the place have done for me, I am

"'Very sincerely yours,

"'Y.'"

Dr. Estes Nichols of the Maine Sanatorium at Hebron, Maine, answered to question 1, "no," and added: "We never have had any case of infection by visitors or employees during their residence at the sanatorium or any that have developed after leaving the sanatorium, which covers a period of eight years. We have to be on the constant watch, however, in employing help in all departments, because we find that many persons that fear that they have tuberculosis or perhaps have shown some signs, such as loss of weight, cough, expectoration, blood spitting, or a general rundown condition, as they speak of it, are apt to apply to the sanatorium for work. They frequently say that they have never had any trouble, but it only takes a short period of observation to realize that their attention has been drawn to their chest by one of these signs. I have in a number of instances examined the sputum of employees who have been in the sanatorium for less than two weeks and have found abundance of bacilli in it, and when we have accused them of knowing they had some trouble they frankly admit it and throw themselves on our mercy. This is one reason why the management of sanatoria should be very careful in engaging help without knowing whether they are free from tuberculous disease or tendency. We have been convinced to our satisfaction that the sanatorium is a very safe place to be in, and I think that is the experience of every worker." To question 2 he answered "yes," and remarked: "I have occasion to see a great many patients who have failed to come to the sanatorium early enough because of a feeling of danger. This has been confirmed in many instances by the family physician. When the case gets far enough advanced at home, however, they lose their fear, but in most of these instances we are unable to help them on account of this delay. This feeling is one that should be overcome, especially with the medical profession. We have had but two patients who have left the institution shortly after arrival because of this fear. One of these cases was an advanced case, and I think that most of the patients were glad that she did not remain." To question 3 he answered "yes," and added: "I know of occasional instances of patients leaving the sanatorium with the disease arrested and being ostracised, mostly in a social way, but relative to arrested cases it is more apt to be the other extreme. In other words, it is more difficult to hold a patient down for a sufficient length of time because of the friends ridiculing the idea of their having 'real tuberculosis.' With the few cases who go out with the disease progressive there is not enough ostracism in many instances to make the patient careful. Ostracism has one good feature with these persons. It holds them up to a degree of carefulness that convinces their friends there is no danger. Some persons are apt to feel that this is a hardship, but I find in the patient body under treatment ostracism of careless patients by the patient body will have more to do in making that patient more careful than anything else. I do think there is a good deal of needless fear concerning the disease, and sincerely hope that your paper will bring out many of these points."

Dr. Victor F. Cullen of the Maryland Tuberculosis Sanatorium answered to question 1, "no"; to question 2, "yes," and added: "We have had one patient, a far advanced laryngeal case, who thought that there was nothing the matter with her, and she objected to the association of the cases in the pavilion, and went home on this account." To question 3 he answered "yes," and added: "I know of several instances where patients have suffered ostracism because they have been at a sanatorium, although they left arrested and improved. This is mostly among boarding-house keepers, where, although the patient may have been at work elsewhere for one year, they were afraid to take them into their boarding house on account of their having had tuberculosis. I have seen several instances where boarding-house keepers would not

take in patients who had tuberculosis, and who used the proper means of disposal of their sputum and of taking care of themselves; yet these same people would take in an advanced consumptive, as long as he would sit on the porch and cough and expectorate on the lawn."

Dr. John Stewart of the Missouri State Sanatorium at Mount Vernon, Mo., answered to question 1, "no"; to question 2, "yes," and added: "The only cases I know of leaving because of the association with other patients have been neurasthenics of the worst degree, and in fact they have all been worse off than the patients they complained of and we are always pleased to see them go." To question 3 Dr. Stewart replied "no."

Dr. W. B. Kendall of the Muskoka Cottage Sanatorium at Gravenhurst, Canada, answered to question 1, "no"; to question 2, "yes," and added: "We have had one or two neurasthenics who have left the institution because they were not satisfied, but as for what the reason was I could not say; in fact, I feel that these patients should have gone to an asylum in the first place, as we were not prepared or equipped to take care of them. We find occasionally that some patients are naturally homesick for the first few days, when this soon wears off, and I feel that the moral effect of having other patients whose ideal is the same with them, is a great stimulus toward their following the treatment properly and getting good results. I consider this latter point to be one of the many reasons why patients can follow treatment to advantage in an institution rather than in the home." To question 3 Dr. Kendall answered "no."

Dr. E. S. Bullock of the New Mexico Cottage Sanatorium, Silver City, N. Mex., answered to question 1, "no"; to question 2, "no," and added: "Patients sometimes refuse to enter an institution because they think association with other patients would be unpleasant. After entering, however, I have never known one to leave on that account." To question 3 Dr. Bullock answered "yes," and added: "I have heard of many, many instances in which patients have suffered business and social ostracism, relatively or complete, which is the result of the medical profession's activity in promulgating ideas of the contagion of tuberculosis. Modern studies of tuberculosis have substantiated a growing conviction on the part of those most competent to judge that tuberculosis is a universal infection; that the worst thing that can happen to one is to be among the residual 2 per cent. who have not been infected in early life, for when infection occurs, which it is bound to do sooner or later, in the absence of the protective infection enjoyed by most people in early life, the result is a virulent type of tuberculosis which finds its analog in experimental tuberculosis in animals."

Dr. Marion H. Ober of the Portland Open Air Sanatorium at Milwaukie, Ore., answered to question 1, "no," saying "I want to say that for five years now I have been connected with tuberculosis sanatoria in the South, West and here, and have come very closely in touch with the patients both incipient and advanced cases (mostly the latter), and have not as yet become a victim to the disease." To question 2 he answered "no," and added: "No one has ever left on account of unpleasantness on entering the institution, and it is surprising how very quickly they adapt themselves to the open life. Very few patients have returned to their inside occupations after leaving (not that they have left for heaven), but have gone on to the different ranches or into real estate and other occupations that keep them out of doors." To question 3 he answered "no," and added: "If people feared more the crowded churches and theaters and realized the sanitation of the various sanatoria we would have less difficulty in convincing our patients that there was less danger at sanatoria than at their own home."

Dr. F. M. Pottenger of the Pottenger Sanatorium, Monrovia, Cal., answered to question 1, "no"; to question 2, "yes," and added: "I recall only two who felt that they were obliged to leave the institution because they found the association unbearable, but I would like to say that these same two patients found the association at home unbearable and made it unbearable for those around them; in other words, they belong to the discontented class. The general rule is that the fear of the sanatorium being unpleasant and obnoxious nearly always disappears after a day or so in the sanatorium. Some of those who have feared coming the most have been the most ardent supporters of the institution after their arrival." To question 3 Dr. Pottenger answered "yes," saying: "There is a great prejudice among the laymen against the tuberculous patient, and the laymen, unfortunately, do not differentiate between the trained patient and the untrained, neither do they differentiate between the patient who is in the open stage and the one who has secured an apparent cure. The very fact that the patient has been in a sanatorium or has taken treatment from a physician who is a specialist in tuberculosis brands many of them and works injury against them when it comes to their association with the outside world. This is carried on to such an extent that I often find it best, in corresponding with my patients, to use plain envelopes in order to conceal the fact that the person with whom I am corresponding has had anything to do with me. . . . I believe that we can do just as much for the prevention of the disease and just as much for its cure and inject far more humanity into the problem by making greater efforts against the unjustifiable phthisiophobia which now exists. I hope that your paper will have wide circulation and do much good along this line."

Dr. P. H. Bartlett of the Rutland State Sanatorium, Rutland, Mass., answered to question 1, "no"; to question 2, "yes," and added: "There have been a few cases that came to my notice where patients were not satisfied because they were obliged to be in an open ward with others. In most instances, however, these patients became accustomed to the routine and stayed. I believe a few, however left for this reason. In most instances I do not think it was because they were associated with other tuberculous patients in rather close proximity, but because they were nervous and not accustomed to being with so many people during their sleeping hours." To question 3 he answered "yes," and added: "It has happened, not infrequently, that some patients after leaving the sanatorium have reported that they have been troubled about getting employment or that they have had trouble with their fellow employees because they were tuberculous. In all of these instances I have given a certificate stating that I felt that a conscientious, well trained tuberculous patient, although there might possibly be some activity of the disease present, was not a menace to the community, and that I felt that our 'arrested' cases were in no way dangerous."

Dr. Oliver T. Hyde of St. Joseph's Hospital, Silver City, N. Mex., answered to question 1, "no"; to question 2, "no," adding: "The general atmosphere is cheerful and optimistic." To question 3 he answered "yes," and added: "I have noted that some patients, having obtained a partial or complete arrest, and desiring to live in private dwellings in the town, have been discriminated against because of their sanatorium history. This, though, is the result of ignorance. On the other hand, I have found that arrested patients whom I have recommended to responsible business men for positions and in whom it was possible for me to say that the lesion was not active and the sputum was negative were perfectly satisfactory to the employer, and they have obtained positions where in the ordinary course I am quite certain they would not."

Dr. Vincent Y. Bowditch of the Sharon Sanatorium, Sharon Hill, Mass., answered to question 1, "no"; to question 2, "yes," and added: "Homesickness and nervousness due to the mere presence of others, apart from fear of infection, have been occasionally causes for patients leaving. The number of those who have left from mere fear of infection has been very small, so far as we have been able to determine; and while I have had a good many who in applying have expressed this fear, the majority have ceased to harbor such thoughts after intelligent instruction during their stay at the sanatorium." To question 3 Dr. Bowditch answered "yes," and remarked: "I have known of a few such cases among the many hundred who have left the sanatorium, and I believe there is, unfortunately, ground for patients feeling that they may be ostracised if they have been in a sanatorium. To a certain extent, in my opinion, this is inevitable on account of the irrational, cruel and unnecessary attitude, which I deplore and deprecate, taken by some people who deal with former patients, no matter how well they are, who are not only not sources of danger, but who, from their knowledge of how to take care of themselves and others, act as missionaries among those with whom they associate."

Dr. Geo. M. Sternberg of the Starmont Sanatorium, Washington Grove, Md., answered the three questions with "no."

Dr. Lawrence F. Flick of the White Haven Sanatorium, White Haven, Pa., answered to question 1, "no"; to question 2, "no," and added: "So far as I know no one who has entered the sanatorium and has remained long enough to become acquainted has left on account of association with other patients. This is the more remarkable since at White Haven Sanatorium there is no discrimination as to race or color, and we frequently have colored patients side by side in the same ward or in the same room. We also have had Chinese and Japanese mixed in with the other patients." To question 3 Dr. Flick answered "yes," saying: "I have heard of business ostracism after leaving the sanatorium, but I do not know of authentic cases. White Haven Sanatorium has made it a rule to protect the patients as far as possible by guarding their identity and refusing information about them to all inquirers except the family."

To summarize the foregoing answers we may say that to question No. 1, asking whether any healthy individual had ever contracted tuberculosis during his sojourn in the sanatorium, all twenty-five sanatorium directors to whom letters were addressed answered "no." To question 2, asking whether any newly arrived patient had left the institution because he found the association with other patients unpleasant, 13 answered "yes," 12 answered "no." To question 3, asking whether any patients had suffered social or business ostracism after having left the sanatorium, 13 answered "yes," 12 answered "no." The additional remarks of the sanatorium directors, besides their value as answers to my questions, are, of course, highly interesting and instructive, and they speak for themselves. May I now, in conclusion, say a few words regarding my personal experience relating to this topic?

My experience during the relatively short time I served as assistant in a sanatorium, corroborates the negative answers to question No. 1. For my doctorate thesis before the Faculty of Paris, entitled, "Les Sanatoria, Traitement et Prophylaxie de la Phtisie Pulmonaire," published as far back as 1895, I had similar answers from twenty-five of the leading European sanatoria. During the many years that it has been my privilege to be the senior visiting physician to the Riverside Hospital-Sanatorium for Consumptives of the New York City Health Department, where the great majority of patients are in the advanced stages and come mostly from the ignorant and poorer classes, there has never been an authentic case of tuberculosis having been contracted among my assistants and nurses. This result in a hospital for advanced cases is, I believe, even more remarkable. Regarding the matter referred to in question 2, I am willing to make the statement that not only will much depend upon the atmosphere of cheerfulness which the sanatorium director can create by his own personality and his example to his assistants, nurses, helpers and patients, but also upon the physician who sends the patient to the sanatorium. Let the physician impress the patient with the idea that the sanatorium is "eine Heilanstalt"—a healing institution—that he must expect to see sick patients, but that by his own hopefulness, cheerfulness, and determination to get well, and his ready compliance with the sanatorium rules he can be productive of immeasurable good to himself and others. During my stay at Falkenstein as assistant to that immortal teacher and pioneer of the sanatorium treatment, Dr. Dettweiler, I had occasion to witness manifestations of the greatest sympathy, particularly on part of the well-to-do patients toward their financially less fortunate brethren. It was there at that time that a few wealthy patients expressed their gratitude for a complete recovery by presenting Geheimrath Dettweiler with a large sum of money for the purpose of establishing an institution similar to that of Falkenstein for the consumptive poor. This institution, the first in Germany for the tuberculous of limited or of no means, is now located at Ruppertshain, a short distance from the mother institution, and is one of the most flourishing and successful of all the European sanatoria.

Apropos of the antipathy some individuals have to entering a sanatorium let me relate a true story which was communicated to me only last week. A patient whom I had sent to one of our leading sanatoria returned to me completely cured after a prolonged stay at the institution. I mentioned to her the subject of this paper, whereupon she told me the following incident which she had recently witnessed: A young woman in a rather advanced stage of the disease had entered the sanatorium two years before, much against her wishes and inclinations. On her arrival she was sure that she could not stand the environment and was prepared to leave as soon as she was rested sufficiently to take

the homeward journey. But she began to improve, though slowly, and she soon realized that the place was not half as bad as she had imagined it to be. She became one of the most faithful and obedient patients, carrying out with enthusiasm the orders of the physician. It took two years to cure her, and the other day, when her physician at last told her "You are cured; you can go home," she rejoiced, of course, but when the time for her departure came she shed bitter tears over leaving the place where she had been so happy and contented, where she had regained her health, and had made so many friends. My narrator said that the adieus were pathetic in not a few instances, and when recalling her own farewell from the institution, I noticed a moisture in her eyes. I believe all objections to entering and remaining in a sanatorium can be overcome if the physician can be persuasive enough to make the patient perceive that he has now a mission before him not only to help himself but to help others as well, and that by the knowledge and training he will receive in a sanatorium he will become a sanitarian, a hygienist, a factor of real good to his fellowmen, particularly among those to whom he will return after his restoration to health. I really think that I have won over many a patient to the sanatorium idea.

My experience with the more advanced cases coming from the poorer classes has, however, convinced me of one fact which I fear our authorities do not take sufficient cognizance of. If we wish to retain an advanced case in a hospital for isolation we must make the environment of this patient as attractive, as pleasant and as sympathetic as possible. If we fail to do this the advanced case will prefer to do with a little less comfort, in fact even to put up with less good food, a less clean bed, and less pure air, if he is only allowed to die in his home.

And now a last word concerning the social and business ostracism to which discharged patients are alas, so frequently subjected. Wherein lies the remedy for this type of phthisiophobia? I do not quite agree with some of my colleagues who hold the campaigns of our health department responsible for this type of phthisiophobia. In all the health department literature which has come under my observation the statement that the clean, conscientious consumptive is as safe an individual to associate with as any one else has always been emphasized. It is rather that the employers should be convinced that a tuberculous patient, even if his case is not arrested and not completely cured, or when the cure is only an economic one, is best fitted by his training in the sanatorium to become absolutely safe to associate with, if the hygiene in the factory, workshop or office is not so bad as to make everybody sick. We not only need a little more education, but also a little more charity toward our consumptive fellowmen. The tuberculosis problem will not be solved by phthisiophobia but by a humane, just, sympathetic and helpful attitude toward patients within and outside of institutions. Fortunately this world is growing better and I for one at least see brighter and happier prospects for the patients entering and leaving sanatoria. As stated above, when they are rightly taught and rightly trained they are bound to become the most valuable coworkers in our labors, particularly so when they are imbued with the idea that though they may be seemingly disabled, they are still valuable and useful members of society. Let them feel that they may join in what is a sacred mission to all of us, namely, service to men, which in the end is the highest service to God.

THE RELATION OF DIET TO HEART AND BLOOD-VESSEL DISEASE.

By LOUIS FAUGERES BISHOP, A.M., M.D.

NEW YORK.

CLINICAL PROFESSOR OF HEART AND CIRCULATORY DISEASE, FORDHAM UNIVERSITY SCHOOL OF MEDICINE; NEW YORK CITY; PHYSICIAN TO THE LINCOLN HOSPITAL.

Diet is a great though puzzling subject and has a very important bearing upon the treatment of disorders of the heart and blood vessels. The trouble with the question of diet is that on the one hand it is so simple and easy to understand that we overlook it from its very simplicity; and on the other hand, the chemistry of food and nutrition is so complicated and hard to master and there are so many points beyond our present knowledge that we are appalled when we attempt to fathom it.

On the foundation of the ultimate composition of food and on a foundation of practical experience with the feeding of healthy and diseased persons under different conditions, the question is very simple.

So if we are willing to take the ultimate composition of food as our foundation and make the matter of feeding under all conditions a matter of arithmetic, modified by certain common sense principles pertaining to individual experience, the question of the quantitative regulation of food may be made a very simple one indeed. However, one should never undertake the treatment of serious heart disease by a *specific diet* unless the blood can be examined at least twice a month and the weight constantly watched.

In considering food we need take account of only four or five ingredients. We need to take account of the protein, of the carbohydrates, and of the fats. The amount of water in food is a matter of indifference. The amount of salt and ash bears such an indefinite relation to nutrition and health that in a mixed diet we can also generally ignore them. There is no doubt that there are certain numerous food ingredients that are required in small quantities. These are provided for by the incidental articles of food that anyone gets as a matter of occasional indulgence for the sake of variety.

I had a patient a few years ago with a typical attack of scurvy because he was a bartender and got his food from the free lunch counter, which was of course short on vegetables, which we know prevent scurvy.

So a certain amount of variety is necessary in all dietaries.

In heart and blood-vessel disease, particularly in the more advanced stages, diet is more than half of the whole treatment. This is true because cardiovascular disease has its origin more than half the time in errors of diet. There is no doubt that the increase of cardiovascular disease as shown by statistics is, in a great measure, due to the altered dietary of the present generation. Formerly a man who wrested his living from the soil got enough exercise, he was always well supplied with an abundance of vegetable food, and he escaped the consequences of a diet too rich in protein, and the consequences of the suboxidation of his food.

While everyone recognizes the relation of diet to advanced cases of cardiovascular disease which are essentially cases of Bright's disease, the relation of diet to the purely valvular cases is not always so plain. A young man whom I saw recently had a very severe form of chronic rheumatic endocarditis that has resulted in the destruction, in a measure, of

both the aortic and mitral valves. He is a very ambitious young lawyer, and it is particularly unfortunate that he has developed these very severe lesions just as he begins his career. This boy had been under treatment for his heart before he came to me and had not been doing very well. I discovered that in addition to his chronic heart trouble he was suffering from chronic intestinal putrefaction, and that it was the resulting chemical poisoning of his heart muscle that was preventing him from developing a satisfactory degree of compensation. The outcome proved the conclusion, because on a very careful diet this young man has been able to resume his law practice, and his heart, instead of growing worse, is improving.

The relation between the intestinal food activities and the heart muscle is something that is brought to my notice not every day but several times every day, so that I am absolutely convinced of the relationship. The integrity of the heart muscle is more often impaired by the effects of the overingestion of food, or the ingestion of the wrong kind of food element than for any other reason. In private practice this is a common cause of disturbance of the heart muscle. Very often we hear of the death of a prominent man after a big public dinner. The former explanation, and I believe the popular explanation at the present time, is that the man died of an attack of acute indigestion exhausting his strength and leading to his death. I do not believe that the result is so indirect. I believe that these deaths must be laid to the account of acute autointoxication from the rapid disintegration of an excess of protein food.

In my own practice I see a great many examples of acute poisoning of the heart muscle by the products of intestinal putrefaction.

A young man who was under my care last winter developed a mania for eating meat. He would eat his breakfast composed of meat; in the middle of the morning he would go out and get a meat sandwich; he would also have meat for his lunch, in the afternoon, for his dinner, and late at night. He consequently developed an intense autointoxication, and when I first saw him his heart was beating only about forty to the minute and was extremely feeble and irregular. It was necessary to put him in a hospital and treat him heroically or he would have drifted on to a fatal termination.

We learn principles from extreme cases, and we must apply these principles to our milder cases in which the relation of cause and effect is not so apparent.

A young man, otherwise healthy, leading an active life, can consume with impunity an amount of food several times as great as his bodily requirements. Professor Atwater estimated the food intake of some of the students of Wesleyan University, and he found this was something enormous; it was perfectly incomprehensible that the human body could tolerate and dispose of such an excess of food. So the question of food with young people is not so eminently important. However, I recently saw a young man, a Princeton boy, who was very much out of health on account, in a great measure, of eating just about twice as much food as he needed. He had developed some nervous symptoms and weakness of the heart.

When we consider the question of the feeding of heart and blood-vessel patients, the only thing to do is to put the whole question on an arithmetical basis. The arithmetic of food is founded upon definite experience in the feeding of large bodies of men, in the dietetics of institutions, and in individual observation. Diet, twenty-five years ago, was purely a matter of fad. One group of people called themselves "vegetarians," another group took other food and called themselves something else, and so on. There is no reason for these fads because it is not a question of preference for vegetable or animal food, but a matter of the ultimate analysis of food of every kind.

The whole principle of dieting in people with impaired circulation is in regulating the amount of protein and calories so that the patient has what is required, but has nothing in excess of his requirements. The exception to this is where one can trace the cause to a particular proteid food. The few-proteins diet that I have recently advocated offers a good chance that particular unfriendly proteins may be excluded though they may not have been unsuspected of doing harm.

A physician who came under my care several months ago was in the last stages of what is popularly known as Bright's disease. His blood pressure was over 200, he had shortness of breath and hypertrophy of the heart, and he was passing a very large quantity of very light urine; he also had signs of impaired circulation in his central nervous system, represented by mild symptoms pointing to hemiplegia. Altogether he was a most distressing object from the point of view of doing him any good. However I found that his diet was absolutely wrong. He was consuming about 250 grams of protein and 3500 calories. The rule in such cases is to reduce the diet to 50 grams of protein and 2000 calories. This man submitted to this rigid diet and he improved a great deal so that he was able to do his work with some degree of ease, and he managed to pull through the winter all right. Unfortunately he did not adhere to his diet and after neglect of the latter for a few weeks he had an attack of apoplexy which caused interference with locomotion and with the power of speech. Again he went on the diet and again he improved. In a few weeks I saw him again and he had lost ground. As soon as I saw him I said: "You have been neglecting your diet," because I found that his blood pressure was 230, and his whole appearance showed the toxemia of chronic nephritis. He said in reply: "Well, yes, I have been eating meat several times a day," and so on. When he had gone I called up his wife on the telephone and she told me that of late he had not only eaten big meals, but had gone out to get things to eat between meals. It is a very common occurrence that people with the impaired mentality that goes with degeneration of the blood-vessels develop an abnormal appetite, and a great many of these patients, in spite of every intelligent effort exerted in their behalf, simply commit suicide by poisoning themselves with food.

On the other hand, I have seen men just as bad as this patient in the beginning, reduce themselves to a diet of 50 grams of protein a day, and with plenty of outdoor exercise go on for years in a condition of equilibrium and never have apoplexy or any other accident.

The ideal diet or the key to an ideal diet for a patient with heart and blood-vessel disease is bread and butter, with a certain amount of milk to supply the fluid, and enough cheese to make up the protein requirements, without an excess of carbohydrates or heat units. If a man is fed on bread

and butter alone he gets an excess of carbohydrates which burdens his digestion. It leads to an accumulation of weight and other evils, but if given bread and butter in moderation, with cheese to furnish the necessary protein, he gets along perfectly well on this balanced ration, which is a very good ration indeed. On account of the scurvy question it is necessary to add fruits and green things, but the essential elements may be obtained from cheese, milk, and bread and butter.

The main point is the food people consume habitually—what they take one day after another. In a reservoir it is the income and outgo day in and day out that determines the fullness of the reservoir. A thunderstorm may fill it up, or an extra drain may empty it, but it is the everyday thing that counts. It is very hard to induce people to take an average amount of food of the right composition. I have often heard an old Irishman say that "it does a man good to get drunk once in awhile"—that it is good for his health. While I do not like to advocate this rather sweeping theory, however, an occasional food debauch does not affect a sound man very much, but if he is diseased it is apt to be too great a strain on his heart.

The amino acids of protein digestion and their relation to the integrity of the liver furnish the key to some very bad cases in which a mere balancing of ration fails, but the discussion of this subject is beyond the scope of this paper.

54 West Fifty-fifth Street.

VACCINES IN SUPPURATIVE OTITIS MEDIA.*

By ARTHUR C. CHRISTIE,

CAPTAIN, MEDICAL CORPS, U. S. A.

During the past two or three years considerable work has been done by a number of different observers in efforts to determine the effect of vaccines on suppurative disease of the middle ear. The writer was among the first to publish case histories (*Journal American Medical Association*, February 26, 1910) of otitis media patients treated with vaccines, and wishes at this time to give the histories of some instructive cases, and to state his conclusions, after considerable experience, on the use and limitations of autogenous vaccines in suppurative otitis media.

The first point to be insisted upon, and one which has been emphasized by nearly everyone who has written on the subject, is that the vaccine must be so prepared that it contains the causative organisms of the disease. This would seem to be a very self-evident proposition, and yet there are those who declare that vaccines have no value in this condition on the ground that they had taken some pus in a haphazard manner from the external auditory canal, and had treated cases of otitis media successfully with a vaccine made from organisms obtained from it. It should not be forgotten that the external auditory canal usually contains many different germs, and if an attempt is made to cultivate the organisms of an existing otitis media from its contents the culture will nearly always be contaminated with several other varieties, and the causative germ will often be outgrown by some harmless saprophyte. Sometimes the contaminating organism will be a spore-bearing bacillus and it will be impossible to sterilize the vaccine without overheating it. In the writer's work the attempt to obtain the causative organism is made by first thoroughly irrigating the external auditory canal with salt solution, drying it with sterile cotton, and then, under good illumination, taking some of the discharge from the opening in the drum, the patient forcing it out by autoinflation, or Seigel's speculum being used to draw it forth. Even with care, however, it is often necessary to make several attempts before the offending germ is found, and in some cases there is no doubt that it never is obtained.

The following case, which I will report in detail, shows particularly well the importance of making the vaccine from the proper organism. Each c.c. of the vaccines used in the cases reported in this paper contained 250,000,000 organisms.

Case I.—G. C., age 21. Admitted to hospital on December 31, 1911, with measles. January 9, 1912: Has had pain in right ear since yesterday. Right drum is red and bulging. Incision is followed by thin purulent discharge. January 12: Profuse purulent discharge from ear. Fowler's suction douche is used daily, ear thoroughly dried, and sterile wick inserted. January 13: No change. Same treatment. Culture made for vaccine. January 15: Profuse discharge. Same treatment.

January 17: Profuse discharge continues. One-half c.c. vaccine given. The organism is staphylococcus pyogenes aureus in pure culture. January 18: No reaction from vaccine. Profuse discharge from ear. January 21: One c.c. vaccine given. Local treatment continued. January 22: No reaction whatever from vaccine. Profuse discharge from ear. January 24: New culture made for vaccine. In addition to the staphylococcus there is also present a small barred bacillus. A vaccine is made from this organism and mixed in equal quantities with that made from the staphylococcus. January 25: Profuse purulent discharge from ear. One c.c. of the mixture of the two vaccines given. January 26: Slight local reaction from the vaccine. Discharge about the same. Irrigation and inflation. January 27: Discharge markedly less in amount. January 28: Very small amount of discharge from the ear. One c.c. vaccine given. January 29: Pronounced local and general reaction from the vaccine. January 30: Slight discharge from the ear. Local treatment continued. January 31: Small amount of watery discharge. Suction with Seigel's speculum. Inflation through catheter. February 1: No discharge from the ear. One c.c. vaccine given. The drum looks white and edematous. February 2: Pronounced reaction from the vaccine. February 4: No discharge. Drum is still white and swollen. Inflation. February 5: Small amount of purulent discharge. One c.c. vaccine. February 6: Marked reaction from the vaccine. Considerable discharge.

February 8: No discharge. Drop of pus withdrawn with Seigel's speculum. February 10: No discharge. No pus on inflation. February 11: No discharge. One c.c. vaccine given. February 12: No reaction from the vaccine. No discharge. February 15: Perforation is closed and drum looks normal except for retraction. Inflation. February 18: Drum looks about normal; inflates readily. Hears whisper at twenty feet.

It will be noted in the above case that the first culture obtained was the staphylococcus pyogenes aureus, and in view of its well known activities, it was easy to believe that this organism was at the base of the trouble. When, however, its injection

*Read before the Columbus Academy of Medicine, Columbus, O., April 22, 1912.

caused absolutely no reaction, and no change was made in the course of the disease, it was concluded that some other organism must be the cause of the suppurative condition. Another attempt at cultivation revealed a small barred bacillus (unidentified). Injection of a vaccine made from a culture of this organism produced a local reaction and the suppurative condition underwent a marked change.

It may be well at this point to further analyze this case, it being an interesting one, and illustrates several points of importance. It was noted on January 26 that there had been "a slight local reaction"; by this is meant a slight redness at the site of injection, and some little local tenderness. In the writer's opinion this is the reaction always to be sought for after the first injection of vaccine, and with a little experience in preparing and administering vaccines it can nearly always be obtained. This is important because upon this reaction depends the time of administration and the size of the second dose. If nothing more than a local reaction is obtained then the second dose of 1 c.c. is given after an interval of four days. The frequency of subsequent doses must depend entirely upon the reaction obtained and the course of the disease.

It will be noted in this case that on January 29, the day after the initial dose of the effective vaccine, the discharge from the ear was profuse, but on the two succeeding days there was a marked diminution in quantity and change to a more watery character. This could be accounted for by coincidence, especially since the disease had been in progress for two weeks and might well be subsiding under local treatment. This, however, is the typical result obtained in practically all cases of otitis media where the vaccines are effective. There is first an increase in the amount of discharge and soon afterwards a marked diminution in quantity and change in character. The second dose of vaccine was given on January 28, and was followed by a pronounced general reaction; that is, the patient had a feeling of malaise and his temperature arose to 100. All symptoms due to vaccine disappeared in about twelve hours. On February 1 there was no discharge from the ear but the appearance of the drum showed that the disease had not entirely subsided. A third dose of vaccine on this date again produced a marked reaction. It may be stated here that so long as a reaction takes place after the injection of vaccine the disease is probably still active. Altogether this patient received five doses of vaccine and after the fifth had no reaction whatever. This dose was followed within two days by a complete disappearance of the disease, as evidenced by a drum which was normal in appearance except for slight retraction, the perforation having closed, and inflation being easy.

It can be said that this case might have recovered just as soon under local treatment alone. That, of course, is true, but it is equally true that it might not have, for there are many cases that never do recover under local treatment. No one can tell how long it will take to effect a cure in any case of otitis media under any method of treatment. The striking thing about the use of vaccines is not the length of time it takes to effect a cure, but rather the distinct change for the better which takes place after every injection of the vaccine. Even should it take equally long to effect a cure by the use of vaccines they still have an important action in so modifying the course of the disease as to prevent much of the destruction that would otherwise take place in the middle ear. The mere fact that the discharge is lessened in amount and becomes more serous in character points to a diminished activity of the disease. It is true that cases are occasionally encountered in which the vaccines have no appreciable effect. These can be accounted for on the ground that the causative organism was never secured, which is undoubtedly often the case, or that the disease was so active or of such long standing as to have produced necrosis of bone. Even in the latter class of cases a suitable vaccine is often of great benefit in so modifying the course of the disease as to prevent further destruction, and the involvement of neighboring structures.

There are many cases of otitis media which recover in from eight to twenty days under local treatment, especially if incision of the drum is practiced early; and others which recover under no treatment at all; but there are still others which persist in spite of the most painstaking care. It is in this latter class that vaccines find their legitimate field, and in a large per cent. of which they effect a cure. In the writer's work, after the first year or so, when it was largely experimental, vaccines have been used only in those cases which have shown themselves resistant to local treatment. When it becomes evident after ten days to three weeks of local treatment that the case will at least be one of long duration the use of vaccines is begun, the local treatment being continued. They are not to be used to the exclusion of other methods of treatment but only as an adjunct to the proper local measures in resistant or long-standing cases.

The local treatment in all of my cases consists in very early incision of the drum membrane, followed by daily, or more frequent, irrigation with Fowler's suction douche. The canal is thoroughly dried after each irrigation and a gauze wick lightly inserted. When the disease has somewhat subsided the eustachian tube is kept open by inflation through the catheter. Some of the cases which persisted in spite of these measures are given below, and the success of the vaccine may be judged from them.

Case II.—C. B., age 25. Admitted to hospital January 31 with measles. After aching for a few hours during the night, on February 5, the right ear began to discharge. Drum red and thickened, with a perforation considered large enough to afford adequate drainage. Local treatment was continued daily until February 16, and a thick purulent discharge still continuing, the patient was given ½ c.c. of an autogenous vaccine. This was followed on February 17 by a pronounced local reaction. On February 18 the discharge was much less in amount. On February 20 there was no discharge. No further treatment was given until February 26, when the drum looked normal except for retraction. It was inflated through catheter. Patient remained without symptoms until April 1, when he reported with roaring in the right ear. Drum was readily inflated by Politzerization and he experienced no further trouble.

Case III.—B. B., age 27. Patient discharged from hospital on February 1, after an attack of lobar pneumonia. On February 3 he reported at hospital with earache. The right drum was found red and bulging. Incision was followed by a serous discharge. The next morning there was purulent discharge from both ears, the left drum having ruptured during the night, the patient having had no

pain whatever in that ear. Smears show a diplococcus, resembling the pneumococcus, and a small bacillus. Local treatment was continued daily and on February 16, there being a very profuse purulent discharge from both ears, 1 c.c. of a vaccine made from cultures of the above organisms was injected. On February 17 a slight local reaction from the vaccine had taken place and the discharge was watery in character and not nearly so profuse. Local treatment was continued daily. On February 20 there was no discharge from the right ear and a slight watery discharge from the left. Two c.c. vaccine given. Patient not seen again until February 26, when there was no discharge from either ear. Both drums were retracted but readily inflated. No recurrence of the discharge took place.

Case IV.—L. H., age 21. Patient in hospital with measles when he complained of pain in right ear on April 25. On examination the external auditory canal was found full of pus. Daily local treatment was pursued. On May 14 there was still a profuse discharge and ½ c.c. of an autogenous vaccine was injected. A marked local reaction took place. On May 15 there was much soreness along the external auditory canal and at the meatus; this was thought to be a part of the reaction from the vaccine. The discharge on this date was much less in amount. On May 19 there was no discharge, the drum being uniformly red but readily inflated. May 31, the discharge had not recurred and the drum looked normal except for retraction. It was readily inflated and patient could hear a whisper at twenty feet.

Case V.—L. E. H., age 21. Admitted December 4, 1911, with measles. On December 12 the right drum was found red and bulging and was incised. December 13, profuse purulent discharge, accompanied by much pain and tenderness over the mastoid and drooping of the postero-superior wall of the canal. The suction douche and Seigel's speculum were used and on the next day the pain and tenderness over the mastoid had greatly subsided. The profuse discharge continued but the mastoid symptoms gradually disappeared. On December 24 the discharge stopped and the opening in the drum was found nearly closed. Another incision was made and was followed by a very profuse purulent discharge. During the next week the discharge continued in varying amounts. On January 3 there was not quite so much discharge but the case was progressing so slowly that ½ c.c. of an autogenous vaccine was given. This was followed by a slight general reaction. On January 4 the ear was perfectly dry and although the incision was well open nothing could be withdrawn with Seigel's speculum. On January 7 there was no discharge but the drum looked red and thickened and 1 c.c. of the vaccine was given. There was a slight reaction from this. The discharge never recurred. The drum remained retracted and inflation was somewhat difficult on account of the presence of a small amount of adenoid tissue which was removed on January 12. The patient went to duty on January 16 and had no further trouble.

Case VI.—H. S., age 21. Admitted December 13 with appendicitis. Appendix was found gangrenous and a large abscess surrounded it. On December 24 acute follicular tonsillitis began, and the next day the left ear drum was found red and bulging. Incision was followed by a free purulent discharge. On January 4 the discharge was still very profuse and ½ c.c. of a vaccine made from the *Staphylococcus pyogenes albus*, which had been obtained from the patient's ear, was injected. January 5, slight local reaction. Profuse discharge. January 6, almost no discharge. January 7, no discharge, drum readily inflated. One c.c. vaccine given. January 13, drum somewhat retracted but readily inflated. One c.c. was given and there was no reaction whatever. The patient was observed for about a month while convalescing from the appendiceal abscess and no further trouble was experienced with the ear.

Case VII.—S. G., age 20. Admitted to hospital with measles on January 23. February 5, right ear drum red and bulging; incision followed by purulent discharge. Local treatment pursued daily, but on February 23 the discharge continued unabated and ½ c.c. of an autogenous vaccine was given. The culture was *Staphylococcus pyogenes aureus*. Slight local reaction. On February 24 the discharge was about the same in amount but more watery in character. February 25, no change. February 26, discharge distinctly lessened in quantity. February 27, no discharge whatever. One c.c. vaccine given. February 28, marked reaction from the vaccine; slight watery discharge from the ear. February 29, ear perfectly dry. The discharge never recurred and the drum gradually returned to normal.

The next two cases show a very marked action of the vaccine, in that each of them cleared up after one dose, the discharge having continued for about five weeks in the first and three weeks in the second.

Case VIII.—A. B. February 5: Right drum red and bulging. Incision followed by purulent discharge. February 6: Profuse purulent discharge. Local treatment begun and continued daily until March 15, when the discharge still being very profuse 1 c.c. of an autogenous vaccine was injected. March 16: Local reaction from the vaccine. March 18: Very slight discharge from the ear. Local treatment continued. March 19: No. discharge. Perforation in drum is closed. Drum is red and thickened. March 23: Drum normal in color but retracted. Autoinflation easy. There was no recurrence of the disease.

Case IX.—F. K. February 28, 1911. Admitted to hospital with measles. March 13: Right drum red and bulging. Incision followed by purulent discharge. Daily local treatment was continued until April 4, when a culture showed presence of *Staphylococcus pyogenes albus* and a diplococcus. A vaccine was made from these organisms. April 7: Free purulent discharge from ear; ½ c.c. vaccine given. April 8: Local reaction from vaccine. No discharge from ear. April 11: No discharge. The patient made a complete recovery without recurrence of the discharge and without another dose of vaccine.

Case X.—L. H., age 18. Admitted to hospital December 3, 1911, with measles. On December 9 there was spontaneous rupture of the right ear drum, the patient not having complained of any pain in the ear. Daily local treatment was carried out. December 12 there was a very profuse discharge from the ear and considerable pain and tenderness over the mastoid, with drooping of the postero-superior wall of the canal. December 13, discharge about the same but less mastoid tenderness. Complained of pain in other ear and on examination the drum was found red and bulging. Incision was followed by purulent discharge. The

discharge was exceedingly profuse from both ears and continued in spite of careful local treatment. On December 27 both drums were reincised. On January 4, the discharge being just as profuse as at any time during the course of the disease, ½ c.c. of an autogenous vaccine was injected. January 5 marked local reaction from the vaccine. Slight watery discharge from the right ear; that from the left about the same as before. January 6, very small amount of purulent discharge from both ears. January 7, 1 c.c. vaccine given, followed by a slight local reaction. January 13, a slight watery discharge is still present. One c.c. vaccine given. January 17, no discharge from either ear. One c.c. vaccine again given. January 18, slight reaction from the vaccine. No discharge from either ear. No recurrence of the discharge took place. On January 24 the perforations were closed, both drums being retracted but readily inflated. On January 25 autoinflation was easy in both ears and the hearing was 20/20 for the whisper.

Since December 1, 1910, the writer has treated seventy-six cases of acute suppurative otitis media, all of them among soldiers or their families at Columbus Barracks, O. Thirty-nine of these cleared up completely in from one to three weeks under local treatment alone. Three died of bronchopneumonia, this as well as the otitis media being a complication of measles. Two died of meningitis following mastoid disease, both of them being streptococcic infections. The simple mastoid operation was done in ten of these cases, nine of these operations being made necessary because of mastoiditis with urgent symptoms. The tenth one was a case in which the discharge had persisted in spite of every method of treatment, including the use of vaccines, for more than eight weeks, and the simple mastoid operation was done to cure the otorrhea. The large percentage of mastoid operations in this series is accounted for by the fact that most of these cases complicated measles of a very severe type. It is a common observation that otitis media complicating measles is likely to be severe in some epidemics, and is very prone to cause mastoiditis. This has been our experience. Twenty-five of the cases mentioned above were treated with vaccines. In twenty the vaccines were entirely successful. Ten of these are the cases reported in this paper, the course of the disease and the outcome in the other ten being exactly comparable to the cases reported. In two cases the vaccines were of very doubtful value. These cases finally recovered but there was nothing to show that the vaccines had anything to do with the outcome. One case escaped from observation after having shown marked improvement from one dose of vaccine. In the remaining three cases the vaccines were entirely unsuccessful. In one of these the use of vaccines was not begun until the eighth week of the disease, and although at times some improvement took place, a cure was not effected. In the second the suppurative condition subsided but the functional result was so bad as to make it necessary to discharge the man from the service on account of deafness. The third unsuccessful case was the one mentioned above in which it became necessary to do a simple mastoid operation.

In computing the value of the vaccines in this series of cases it should be kept in mind that the twenty-five cases in which they were used were of a severe type, and most of them had persisted after long continued local treatment. It is quite probable that some of them would have finally subsided under local treatment alone, but it is unlikely that the functional results would have been so good. A considerable number of them, however, would have probably gone on in a chronic state, with all of its accompanying dangers. The aim of everyone who is called upon to treat suppurative diseases of the middle ear should be to cure every acute case instead of allowing it to become chronic. It is safe to say that all cases of acute otitis media which do not end fatally are curable, but that a large percentage are not cured is proven by the number of patients with chronic otitis media that every otologist has under his care.

During the year 1911, six men out of every thousand were rejected for the military service at Columbus Barracks, O., because of chronic suppurative otitis media, this being a larger rejection rate than for any other one disease except mitral regurgitation and gonorrhea. This did not represent the entire number rejected for this cause by any means, for a good percentage had already been rejected at the recruiting stations on account of defective hearing or discharge from the ear, and thus never reached the recruit depot at Columbus Barracks. I have made this statement to show how necessary it is to use every means at our command to effect a cure in every case of acute otitis media. A certain number can be cured by local treatment alone. Then a certain number which do not respond to local measures will clear up when the proper vaccine is used. When all medical means are exhausted there still remain a few cases which are curable only by surgical means. These can be cured by the simple mastoid operation, and it is being insisted upon more and more by otologists everywhere that cases of acute otitis media which cannot be cured by other means should have the simple mastoid operation performed.

From my own, and the experience of others, I think it can now be stated that the use of vaccine treatment in acute suppurative otitis media should be confined to those cases which are resistant to local treatment, and then it should be used in addition to, and not to the exclusion of, such treatment. They are undoubtedly a valuable addition to our present means of treating such cases. In addition to these acute cases it is the general opinion of men who have used them that vaccines are of value in most subacute cases. In chronic cases their field of usefulness is much more restricted, depending probably upon two factors, the amount of necrosis and the condition of the circulation in the mastoid. Enough cases have been reported by different observers to show that vaccines are an aid to the treatment of chronic cases even of long standing, but of course the more chronic the disease becomes the more is it likely that operative measures will be necessary to effect a cure.

Even with the above limitations it must be acknowledged that vaccines have a definite place in the treatment of suppurative conditions of the middle ear. The dangers accompanying chronic otitis media are being recognized now as never before, and if the vaccines will prevent a certain number of cases from becoming chronic, and limit the ravages of the disease in those already chronic, then their use is not only justified but becomes highly imperative.

Columbus Barracks, Columbus, O.

GALLSTONES.*

By HAROLD DEWOLF, M.D.,

THE GLEN SPRINGS, WATKINS, N. Y.

THE subject of gallstones, which has been assigned to me, is too large to approach in any but a very imperfect and incomplete way, if one is to keep within the necessary time limit. I have, therefore, divided my paper into the following customary subheads and will touch briefly on the first few, leaving the greater part of my time for the consideration of diagnosis and treatment. The subheads are (1) occurrence; (2) physical and chemical properties; (3) etiological factors; (4) symptomatology; (5) differential diagnosis; (6) complications, and (7) treatment.

Occurrence: The condition is very rare in India and the East generally, according to many writers, this being due, perhaps, to the fact that it is not always recognized, but probably largely to the habits of dress, eating, and living. In Europe and America, on the other hand, gallstones are very frequently met with, by far the greater number of cases being found in the autopsy room, where, strange to relate, the unfortunate patient has probably arrived with some other and more complex diagnosis pinned onto his vestments. To bear this out Riedel and Kehr made a flat statement that 10 per cent. of all persons on whom an autopsy is performed have stones present in the gall-bladder or passages, or have positive evidence of stones having been there. Mayo Robson is both a little more and a little less conservative, although he arrives at practically the same figures, as he puts the number at from 5 per cent. to 12 per cent. Kehr, in order perhaps not to raise the wrath of the medical profession, is kind enough to tell us that 95 per cent. of the cases in which gallstones are found at autopsy presented no symptoms or physical signs of the disease during life. Let us hope he is right, although it seems to be a great opportunity that the surgeons are missing.

Physical and Chemical Properties: In size they vary from that of fine sand to that of a tennis ball. In shape they may be almost anything, depending upon the number present, location, size and many other influences. Generally, however, a single stone is roughly egg-shaped and the smaller ones are much facetted from contact with their fellows. As to the number there may be a single large stone, or the number may go into the hundreds. To quote Robson again, "there have actually been as many as 2000 removed from a single case." The color, too, varies widely and may be anywhere from a pure white to black, the prevailing tint, however, being yellow or brown. Consistence is usually firm and the stone may be easily broken between the fingers, the fractured surfaces appearing crystalline. There is no set rule in this, though, any more than in other characteristics, because stones as hard as uric acid calculi have been found and again as soft as putty, which they may also resemble in other respects. Cholesterin, always crystalline, is the secretion of mucous membranes generally and forms by far the greater part of the stone, but it is usually built around a clump of desquamated epithelial cells, a mucus plug, or a foreign body, and is always held together by a cement-like substance, formed of mucus, and calcium margarate, stearate and palmiate. The biliary salts, sodium glycocholate and sodium taurocholate and the bile pigments are almost always present, to the latter being due the color of the calculus. As we have said, the important ingredient, cholesterin, is formed not from the bile itself and not in the liver, but from mucous membranes. Consequently, an overstimulated membrane will throw out an excess of cholesterin which requires, therefore, an excess of salts to hold it in solution. Lacking the salts, the other material is promptly precipitated and forms our stone. Another extremely interesting fact is that bile itself being an irritant, will, when allowed to act upon healthy tissue, produce a mild grade of inflammation and promote the outpouring of mucus and cholesterin. It will readily be seen then that any inflammatory process in the region of the gall-bladder, even that caused by simple stagnation of bile, as found in the condition known as "torpid liver," will eventually be sufficient cause for the occurrence of biliary calculi. This, however, anticipates our next sub-heading.

Etiological Factors: Someone has said: "Given a female of sedentary habits approaching the age of 60 and we have a fertile field for gallstones." This seems to be a good rule to follow, as 25 per cent. of the cases are 60 years or over, and the condition occurs four or five times as frequently in women as in men. That the ladies should have the advantage, or disadvantage, is not surprising when we stop to consider that pregnancy—and 90 per cent. of women with gallstones have borne children—is a great factor in producing chronic constipation and interfering with the proper outflow of bile. Wearing corsets, especially when accompanied by the pernicious habit of hooking from the top down, "will tend to distort the liver and depress the fundus of the gall-bladder" (Allbutt). It seems hardly necessary to mention again the sedentary life as a causative factor, but its importance may perhaps be impressed upon one's mind by repetition and by the hasty enumeration of the all too frequent events following upon this most common complaint. These are loss of tone in the abdominal muscles with consequent removal of accessory forces needed for defecation; the result is constipation. Next the retained irritant matter sets up a catarrhal inflammation, which sooner or later produces paresis of the intestinal musculature, and of the closely related biliary passages, with the subsequent stagnation of bile and increase in the production of cholesterin. But what of the diet? It surely must have an influence, and it does. Great reduction of nitrogenous food, as found in vegetarian Germany, leads directly to precipitation of cholesterin through the insufficient presence of the bile salts to keep it in solution. Indeed, with all their advances in medicine, the Germans still probably lead the list in the number of gallstone cases, while England, with its heavy meat eaters, is far, far behind. Thudicum has made some very interesting observations in this connection among the lower animals, and he tells us that the condition is never found among the carnivora. It has also been frequently noted that the diabetic on his diet high in proteid rarely develops biliary calculi. Perhaps, though, the enormous quantities of fluid that the diabetic indulges in may be preventive and conversely the small water drinker may become a fit subject. If, now, into this fertile ground we have so carefully prepared a few stray bacteria from the well stocked gut should wander, the picture is completed. In this connection one may say that gall-

*Read before the Schuyler County Medical Society, February 20, 1912.

stones very frequently occur in old typhoid cases, and, according to Robson, in those who have had influenza. However, other organisms are also found, notably the colon bacillus, staphylococcus, streptococcus and *Bacillus subtilis*. Probably then this actual infection of the gall-bladder is the exciting agent in all cases of gallstones.

Symptoms: Here, as in most other conditions, there is no set rule or sequence. There may be no symptoms at all, or merely depression of spirits with gastric discomfort. Again we find recurrent attacks of dyspepsia which resist all treatment and eventually lead us to suspect the presence of a pathological lesion other than one local to the stomach. Lilienthal has apparently been particularly struck by the great number of such cases, which pass through the hands of "stomach specialist" after "stomach specialist" only to eventually come to the surgeon during an acute attack of colic. The same observer makes a special plea for early and accurate diagnosis in such cases and asks that the medical man should always consider the possibility of gall-bladder disease and should not delay too long in seeking operative relief. He says in part: "Indigestion with repeated attacks of pain and belching, or even no pain, but severe discomfort, particularly after eating meat, should, in the absence of emaciation and jaundice, arouse a suspicion of gall-bladder stones of large size." The following case, illustrating the conditions described above, is typical of what one so often meets in private practice and shows clearly the errors to which the medical man is prone.

Mrs. S., 53 years of age, was first seen in October, 1911. The chief complaint was of irregular, severe attacks of pain in the region of stomach, the last one having been two months previously. Family history was negative. Previous illnesses included ordinary exanthemata of childhood; acute rheumatic fever and malaria in early adult life; sciatica; a condition diagnosed as peritonitis (probably appendicitis) at the age of 40; and several attacks of "grippe" and tonsillitis. There were no injuries or operations. Menstruation had ceased normally at 50. Patient had had four normal labors. The habits were good except for obstinate constipation of many years' standing, for which the constant use of pills and enemas was necessary.

There was a history of a sudden intense pain in the epigastrium seventeen years before, the attack lasting for twelve hours and being eventually relieved by morphine. There was no nausea, vomiting, or diarrhea, and no icteroid tint to the skin or sclerae as far as was known. During the following nineteen months the attacks recurred at intervals, sometimes accompanied by a chill, nausea, and vomiting, and then for three years the patient was comparatively free, but during the past ten years the symptoms had returned with greater frequency and violence, a single attack, as described by the patient, consisting of rather sudden, deep-seated pain in the region of stomach, radiating to the back and right breast, and accompanied by enormous quantities of gas in both stomach and intestines. The patient thought that the attacks were brought on by excitement, everexertion, or by eating certain articles of food, chicken being the most frequent offender. She had, therefore, eaten little meat for six months and the attacks had been infrequent, the last one having occurred in August, 1911. Physical examination showed a well-nourished white female adult with a clear, normal complexion. Pupils normal. Sclerae injected. Mucous membranes of fair color, tongue coated and pharynx congested. There were dullness, increased tactile and vocal fremitus, bronchovesicular breathing, and a few clicking râles at the right apex. The lungs were otherwise normal. The heart showed a soft systolic murmur in the pulmonary area and the apex sounds were of poor muscular quality. The abdomen was soft and relaxed, with no areas of tenderness and no masses. The liver and spleen were of normal size and there was no tenderness or sense of resistance in the gall-bladder region. The lower pole of the right kidney was palpable. The lesser curvature of the stomach was made out at the fifth interspace; the greater curvature was 2½ inches above the umbilicus, the vertical diameter being 4 inches. With the patient in the standing position the stomach dropped 1½ inches. The systolic blood pressure registered 144, diastolic 92; the pulse pressure being 52. Pulse was 82, regular, small, and of fair strength.

It will be seen that this case showed nothing referable to the gall-bladder, although the character of the attacks was somewhat of the nature of biliary colic. That the condition did not impress itself upon the minds of the patient's many eminent medical advisers as of an operative nature, even though it had existed without improvement for over fifteen years, conclusively proves that Lilienthal's appeal for surgical relief in such cases is justified. This patient was finally operated upon and a single large stone was removed from the gall-bladder.

These atypical cases are undoubtedly of great value to us as medical men, but we are now particularly interested in the more straightforward symptom-complex which is most often seen. Here a sudden knifelike pain in the right hypochondrium, radiating to the back and shoulder of the same side, with nausea, vomiting, and perhaps collapse is practically pathognomonic of an attempt to pass a stone through the gall-passages. Allbutt and Rolleston's "System of Medicine" gives the following seven symptoms and physical signs associated with stone somewhere in the gall-bladder, or ducts:

(1) Parosysmal pain of lancinating character with dull aching between attacks. (2) Vomiting, which may be paroxysmal or continuous and has been fatal. (3) Collapse, during which death may ensue. (4) Jaundice, which may be persistent or intermittent, depending upon whether the stone permanently obstructs the hepatic or common duct or only interferes at times. (5) Malaria-like attacks of irregular chill, fever and sweat (Charcot's hepatic fever), which may be due to irritation, but are more likely the result of absorption of toxic material. (6) Rigidity of the right rectus with presence of a tender spot between the ninth costal cartilage and umbilicus. (7) A tumor or mass representing the gall-bladder itself, this being seldom found in acute cases. Still another means of diagnosis is the presence of stones in the feces after an acute attack of colic. Osler says the following are characteristic of stone in the common duct: "Jaundice of varying intensity, deepening after each attack, paroxysms of chill, fever, and sweat, pains in the liver region, and gastric disturbances." Time will not permit enlargement upon or elaboration of these symptoms so we will pass rapidly on, simply mentioning the more common complications, a few of the conditions confused with gallstones, and then have a word as to treatment.

Complications: These may be local or general.

The local complications are as follows: In the gall-bladder: empyema, gangrene, rupture, perforation, cancer; in the gall-passages: suppurative cholangitis, rupture or perforation, stricture, cancer; in the liver; abscess; in the pancreas; acute, subacute, or chronic pancreatitis, cancer; in the intestines: ileus with enormous distention due to atony, acute obstruction from paralysis, impacted stone, stricture, perforation; in the peritoneal cavity: acute or general peritonitis, subphrenic abscess, etc. The general complications are hemorrhages from long continued jaundice, septicemia, pyemia, and chronic invalidism.

Differential Diagnosis.—The two conditions most commonly found and perhaps most difficult to differentiate from acute gallstone seizures are appendicular and right renal colic. Either one of these may be impossible of accurate diagnosis during the attack, especially if morphine is given, but there are generally a few well marked points of difference. The location of the pain below the tip of the ninth right rib and its radiation toward the right shoulder, together with the possible history of past attacks followed by jaundice, are frequently sufficient to determine the nature of the attack. In lead colic the cramps are general, there is often a lead line on gums, obstinate constipation is present, and a history of the use of lead in some form may be obtained. Malignant growths involving the biliary passages are perhaps most frequently only differentiated at operation, but the deep seated, boring pain, the persistent increasing jaundice, and emaciation often help to distinguish the condition from calculi. I will only mention in passing chronic pancreatitis, duocenal ulcer, angina pectoris, neuralgia, and hysteria, but they must certainly be borne in mind. Dyspepsia with flatulency has already been considered, so I will not discuss it further.

Treatment: This may be medical or surgical, the former being divided again into preventive and palliative. I say palliative advisedly because there is no curative medical treatment for gallstones known today, although it may be possible by proper measures to prevent the further formation of calculi. The preventive treatment may be summed up in a few words as it really is nothing more than leading a perfectly rational existence, something to which, unfortunately, our elderly female patients are strongly averse; a normal amount of outdoor exercise daily; clothing properly made and loosely worn, especial attention being called again to the habit so common among modern women of wearing tight corsets laced or hooked from the top down; a carefully selected mixed diet consisting largely of proteids, fats, and green vegetables, with carbohydrates cut to a minimum, and fluids, especially water, in sufficient quantities; with the ordinary care that any intelligent individual would give to his personal hygiene, would seem to be sufficient to prevent the formation of gallstones. These rules are so sane and simple that it would appear perfectly natural for any patient to follow them, but our experience teaches us that the human being will at times go out of his or her way to lead what is so obviously an abnormal life. Palliative treatment, or medical measures to combat the actual disease, are really very few, although there have been innumerable remedies used and recommended by the enthusiastic experimenters whose ideas we so frequently find expressed at great length in the medical journals. Of these measures for the possible prevention of further acute attacks there is only one that has thus far stood the test of time. I refer to the administration of large doses of olive oil. The rationale of this line of treatment is not quite clear, but Brockbank gives us a very plausible explanation and is worth quoting as follows: "Another explanation of the reported disappearance of gallstones after large doses of oil may be derived from the action of soap and fats on cholesterin. A digested fat passes into the circulation from the alimentary canal in three forms—as unchanged fat, and as the corresponding fatty acid and soap. All occur normally in the bile, and the amount present in the bile increases with the amount of fat taken in the diet. Oil, fatty acids, and soap all dissolve cholesterin readily and break up a gallstone. If, then, the oil, fatty acid, and soap appear in the bile in increased amount after large doses of oil, it is very probable that the gallstone is attacked by them, especially by the soap, and in time dissolved, or so reduced in bulk as to be enabled to pass out into the duodenum."

Abdominal massage, with the object of expressing a stone into the intestine is still I believe highly recommended by some writers, but the consensus of opinion is that this line of treatment is altogether too painful and dangerous, and the possibility of expressing the stone too remote to make it of any value in at least the majority of cases. For the relief of an acute attack the application of hot fomentations to the gall-bladder region, the administration of belladonna with the coal-tar products, or one of the salicylates, and often codein or morphine, are necessary. Last, and often too late, we have recourse to surgery. This, then, is the only curative measure and consists in removal of the stone or stones by operation. The scope of this paper does not include discussion of the various means of attaining this end, but the principle is the same in any case, that is, permanent relief or cure of the condition.

OBSERVATIONS ON VESICAL CALCULI.*

By L. SEXTON, B.S., M.D.

NEW ORLEANS, LA.

Dr. Ben Johnson of Washington, D. C., 1895, by corresponding with four hundred representative surgeons in the South found reported 1,088 cases of vesical calculi, viz., in Alabama, 10; Arkansas, 11; Florida, 28; Georgia, 90; Kentucky, 56; Louisiana, 19; Mississippi, 6; North Carolina, 126; South Carolina, 66; Tennessee, 128; Texas, 98; Virginia, 430. About 1 per cent. of the autopsies at the Charity Hospital in New Orleans show urinary calculi of some kind, negroes to white about one to five.

The number of cases of urinary calculi in the Charity Hospital in twenty years is given by Dr. H. B. Gessner as 158; whites, 124; colored, 34. During twenty-five years of general practice we have had ten cases of urinary calculi. Some of the points of interest in connection with these cases and their rarity is the excuse for this paper.

It was originally thought by the laity that drinking hard water was the cause of stone in the bladder. In Kentucky, Virginia, and Tennessee, limestone regions, where much of the water comes through lime-bearing strata, being saturated with different lime and alkaline salts, vesical calculi were supposed to be more frequent than in communities where soft

*Read at the annual meeting of the Louisiana State Medical Society, New Orleans, 1912.

water was consumed. It would seem reasonable that the larger ingestion of these salts might tend toward the formation of stone in the bladder, but statistics do not bear this out. It must be remembered that these alkaline waters must run the gantlet of an acid stomach and all the secretions in the body so that the urine secreted from the blood has very little to do with the alkalinity of the water consumed.

Again, in Virginia and Tennessee, where the water is hard, and many tropical countries, as India, where cistern or rain water is largely consumed, or where soft well water is used, there seem to be about as many vesical calculi as in the countries where hard water has to be consumed. In our judgment stone in the bladder has more relation to the meat and rich nitrogenous food which we eat and the alcoholic and malt liquors we drink than to the water we use.

Many cases of stone in the bladder are preceded by nephritic colic, in which the uric acid calculi form in the pelvis of the kidney, descend through the ureter into the bladder, where, as the saying goes, "the rolling stone gathers" the phosphates and urates mixed with mucus from the bladder wall and thus enlarges from the small uric acid crystal to the larger bladder stone.

Causes of stone are also constitutional conditions tending toward lithiasis or oxaluria. They are very common in children during the first ten years of life, and in elderly men. They are very rare from ten to twenty-five, the active age, and in women on account of the large size and shortness of the urethra. They are said to be very common in India and Arabia and in all tropical countries where such a large amount of fluid escapes from the body by perspiration that the urine is not sufficient in amount to dissolve or wash them away while they are small.

Uric acid, the nucleus around which so many stones form, may be found in consequence of the eating of nitrogenous food, the taking of alcoholic drinks, imperfect digestion, torpid liver, deficiency of fresh air, lack of exercise, and any increased metabolism, as in violent exercise or in fever. Under such conditions urea is converted into uric acid or its salts. These conditions are quite common in gouty and rheumatic subjects.

Uric acid calculi are the basis of three-fourths of bladder stones. The amorphous phosphate stone usually follows some infection of the urinary tract or septic condition in the bladder. Uric acid or oxalate calculi cause the least irritation to the bladder wall; they begin in the pelvis of the kidney and enlarge very rapidly after their descent into the bladder by the accumulation of phosphates and mucus which they gather with age. They are the principal stones found in the bladder of men past middle life; particularly if they are large drinkers or eaters, or with gouty and rheumatic tendencies. Uric acid sand, or gravel of a reddish color, stains the vessel in which the urine is permitted to stand, and the uric acid calculus is brown in color, dense, usually of smooth or slightly modular surface; on cross-section it shows rings like the trunk of a tree, the outer lamina being usually made up of phosphatic material.

The mulberry calculus, so called on account of its irregular or modular appearance, is very hard and darker in color than the other stones, owing to its admixture with blood. The urate of ammonium calculus resembles the uric acid, but is lighter in color. Any stone or foreign body in the bladder becomes coated with phosphatic deposit, when the urine is alkaline, as in chronic cystitis. The nucleus of a stone may be a blood clot, some foreign body, renal calculus, or inspissated mucus. The laminated portions of the stone are superimposed layers of oxalate of lime, uric acid, urate of ammonium, or phosphates; all the layers are held together by vesical mucus and phosphatic material, a sort of cement by which the stone is built up or made larger. The number of stones may vary from one to one hundred; when there are many stones they are usually small and facetted.

As said before, gouty or rheumatic subjects, patients with uric acid diathesis, or large meat eaters and beer drinkers, patients with cardiovascular and renal complications are the ones most likely to become afflicted with bladder stones. People of sedentary habits are the sort of subjects who seem to secrete the preponderance of urates and phosphates, the principal salts in the composition of bladder stones. The free drinking of water, milk, or fluids of any kind in younger subjects tends to wash out any of these urinary sediments which accumulate in the most dependent portion of the bladder just as they do in the bottom of a vessel. They are washed out by free urination, but in older or strictured subjects in whom the flow of urine or the outpassing of smaller stones is impeded by an enlarged prostate or a stricture there is a predisposition to the formation of stone in the bladder. The enlarged prostate may hinder the diagnosis of the stone by the stone becoming encysted behind the prostate gland in the trigone of the bladder so that the introduction of an ordinary sound may not come in contact with it. It is therefore necessary that, in examining for stones imbedded in this position a stone searcher with a short sharp curve which can be turned back into this pocket should be used.

The common symptoms of stone in the bladder are too well known to require discussion at any great length here. When a stone is present the walls of the bladder are hypertrophied, its mucous membrane may be ulcerated and inflammation may extend up the ureters to the kidneys, producing nephritis. The urine is ammoniacal and very irritating. There is pain in the head of the penis and frequent urination during the day and night, especially after rough exercise, as riding in a wagon or on horseback. The last few drops of urine are stained with blood, there is a nervous feeling when the bladder is entirely empty, dribbling occurs for a time after urination has ceased, there may be a sudden stoppage to the free flow of urine, and blood, mucus, and albumin are not infrequently found in the urine.

We recently had a case presenting the larger portion of these symptoms which had been treated for stricture and enlarged prostate without the stone being detected. Having the history of getting up at night and the sudden stoppage of urination, we made a careful search, when we discovered the distinct click of the stone on the first examination. A large stone was successfully removed by a suprapubic operation. It is therefore necessary when any of these common bladder symptoms are present to go minutely into the examination with the *x*-ray, a cystoscope, or a stone searcher until we are sure that no calculus is present; as it is rather embarrassing after long treatment for cystitis, enlarged prostate, or some other bladder trouble to have another surgeon find and extract a stone.

Just a word about the method for operation before closing.

Lithotrity is the operation of choice when the stones are under two inches in their long diameter, and are composed of phosphates and urates. The suprapubic operation is to be preferred if the prostate gland is enlarged, if the stone is too hard to crush, when there are multiple and sacculated stones, when cystitis renders it necessary to drain the bladder. We are personally more familiar with and prefer suprapubic operation in which one can actually see the parts instead of working through the perineum in the dark. There should be from four to six ounces of fluid in the bladder when the lithotrite is introduced. The urethra should be dilated as large as possible in order to admit a good-sized instrument, the lithotrite should be kept open after it enters the bladder, as the stone may fall into its grasp at any time, when it can be easily crushed by tightening the screw on the end of the instrument; the blades should be well fenestrated in order to hold and crush the stone when the latter is grasped. A large evacuating catheter should be introduced after the lithotrite has been removed; the evacuator should be filled with boracic acid solution and pumped into and out of the bladder until all fragments have been removed. It becomes necessary to reintroduce the lithotrite in some cases in order to crush the larger fragments of the stone.

The contraindications for litholapaxy have been given as encysted calculus, a stone two inches in diameter, an oxalate of calcium stone which it is impossible to crush, urethral stricture, large prostate, a sacculated or contracted bladder.

Median lithotomy is the operation of choice by some surgeons when cystitis and enlarged prostate are present, requiring removal of the latter and draining. The suprapubic operation is contraindicated in a small contracted septic bladder with diseased walls. Any incision through the perineum is more or less damaging to the sexual function and this, even in old subjects, should be carefully guarded. There are some cases in which an enlarged prostate may be removed together with the stone through the median perineal incision, but in the vast majority of cases the suprapubic incision leaves the parts in better condition and the bladder with less traumatism and the sexual function, if any remains, undisturbed. The prostate is also easily removed through this incision.

In suprapubic operations hemorrhage is much less likely and if drainage is necessary it can be accomplished through a catheter, though not so well as through the perineal route. In some of the cases where there is not any violent cystitis or bladder infection it is possible to close the walls after all the débris has been removed by a Lembert-Czerny suture through muscular coat closing the incision in the bladder just as in any other wounded viscus. It is hardly necessary to remark that bladder asepsis obtained through irrigation with boracic acid should precede any surgical operation on the organ.

The treatment should not stop with removing the stone; a prohibition of malt and alcoholic drinks and nitrogenous food, the free use of alkaline waters, and an abundance of exercise and fresh air should constitute the after-treatment of an operation for stone in the bladder.

In the cases in which the stones (shown at the meeting of the Society) were removed we distended the bladder with ten ounces of boracic acid solution, applied a rubber band around the penis, and inserted a rectal bag or tampon above the sphincter ani. We then made a three-inch longitudinal incision in the hypogastric region ending just over the symphysis pubis; this opened down upon the prevesical connective tissue which we divided, pushing up the peritoneum. We caught the bladder with forceps, inserted two suspension sutures, then divided the bladder wall in the median line, catching the edges of the bladder with forceps on either side. Inserting the index finger, we found the stone in the trigone of the bladder, removing it with the fingers. We irrigated the organ with warm boric acid solution, removing all débris and mucus. We then closed the incision in the bladder wall by Lembert-Czerny sutures, and adjusted the muscles and skin, draining the bladder through a catheter to which was attached a long tube leading to a basin under the bed and the wound by a small gauze drain in its most dependent portion. All the patients made a speedy and uninterrupted recovery.

INTESTINAL OBSTRUCTION, WITH REPORT OF CASES.

By C. P. FARNSWORTH, M.D.,

CHAMBERLAIN, S. D.

Intestinal obstruction, especially the acute form, is one of the most formidable difficulties with which the surgeon is confronted. Appendicitis and its treatment is simple compared with intestinal obstruction. The appendix is easily located and the immense amount of literature concerning the procedures makes it certain as to what should be done. When a case of intestinal obstruction presents itself with a distended abdomen and a rapid pulse and subnormal temperature, the patient being in an almost moribund condition, one wishes in his heart that he were a humble day laborer and that the surgical clearing houses which receive the nice, clean cases and can reject the questionable ones, had these as well. But such cannot be and something must be done at once or our patient will be in his long home before his appointed time.

The treatment of acute obstruction has its difficulties. The older generation of practitioners relied on starvation, opium, and rest—and divine interposition. Some resorted to drastic cathartics and, sad to relate, some still insist on that form of treatment. Modern surgery does not wait for the patient to get well of his own accord if it can persuade either the patient or his family to resort at once to a scientific instead of an empirical procedure.

The evidences of obstruction are absence of fecal discharge, absolute or partial, for the obstruction may not be complete; distention of the abdomen; and pain either at the point of obstruction or more often in the stomach, accompanied by retching and vomiting, the latter being at first usually of a mucobilious nature, but as the gravity of the case increases becoming stercoraceous. The patient finally enters a stage of shock with rapid pulse, subnormal temperature, and distended abdomen if the obstruction is low down; in cases where it is high up the distention may not be great, but there are evidences of severe toxemia.

Purgatives should be strictly avoided in all cases as they only serve to increase the pain and make the obstruction more serious while they do not relieve the condition. Food, likewise, should be withheld from both mouth and rectum. There is little absorption except of fluids in rectal feeding, even when the intestine is normal; when it is congested and distressed there is still less. The fluids of the body may be kept up by proctoclysis or hypodermoclysis, but no other attempt need be made of a nutri-

tional nature. Enemata should be administered, but if after the lower bowel has been washed out several times the fluid comes back unchanged and at the same time the vomiting or pain or distention continues, no relief can be hoped for other than by operation. Delay is dangerous because it lessens the chances for recovery. We should not wait for fecal vomiting but proceed at once to operate. The fatal cases following operation are not due to the operation, but to the delay and to the grave changes in the bowel caused by the long continued obstruction and devitalization of the tissues from the retention of toxins and the distention. This is especially true in those cases in which the obstruction is high up so that partial movements follow the first enema, the patient consequently not believing the physician. In these cases it is well to refuse to attend the case unless the patient consents to surgical interference. Otherwise there is practically no chance of recovery.

The stomach should be washed and the patient should be quickly prepared for laparotomy by shaving the abdomen and painting it with a solution of iodine. The incision, except in cases of appendicitis and hernia, should be made in the median line below the umbilicus and long enough to admit the whole hand. When the peritoneal cavity has been opened and all hemorrhage has been arrested the hand is introduced into the abdomen and the rectum and cecum are examined. In case there is no obstruction here or in the ileum, collapsed coils of intestine should be sought for. These are generally found in the pelvis. If found, they should be run through the fingers quickly till the point of obstruction is reached. Sterile pads of gauze wrung out of hot salt solution should be so placed as to prevent the intestines from escaping from the abdomen. If they cannot be kept in the peritoneal cavity the most distended portion should have the contents drawn off with an Ochsner trocar or incised and the contents allowed to escape. The opening in the bowel should be closed with a Czerny-Lembert suture. When the obstruction is located it must be treated according to the conditions found. The following is a series of cases coming under my care with the procedure in each case:

Case I.—Mr. G., referred to me by Dr. Frederick Treon of Chamberlain, had pain in the abdomen with persistent vomiting of biliary matter. Enemata brought fair bowel movements and lavage relieved the vomiting for a time. The pain continued and the vomiting returned. Enemata gave small movements but the patient was not relieved. We advised operation, but the patient refused for nearly a week. Finally an operation was allowed, but the patient was then almost moribund. The exploring hand showed an obstruction from an internal hernia about 18 inches from the pylorus. The bowel was gangrenous and the gangrenous portion was excised and an end-to-end anastomosis was performed with the Connell suture. The patient died the next day.

Case II.—Mr. D., an old soldier, had had considerable pain occasionally in the left iliac fossa similar to that of appendicitis. This time there was complete obstruction with great pain and vomiting. An immediate operation was advised and accepted. The patient was quickly prepared and the median incision made. The exploring hand traced the collapsed bowel to the left hypochondriac region, where an adherent Meckel's diverticulum was encountered. It was dissected loose and brought up into the wound and excised and the bowel was closed by through-and-through sutures of chromicized catgut. Four hours after the operation the patient had a large bowel movement. A complete and uneventful recovery took place.

Case III.—Mrs. B. was referred to me by Dr. James Miller of Winner, S. D., for pus-tube. The operation for pus-tube was successfully performed, but the tenth day after the operation the patient developed symptoms of obstruction; operation was advised, but the patient demurred. The family was sent for. They naturally were somewhat adverse to operating, but I insisted. A second laparotomy disclosed a knuckle of the ileum attached by an inflammatory process to the posterior abdominal wall over the left sacroiliac synchondrosis. The involvement was so extensive and dense that it was determined to do a side-to-side anastomosis without disturbing the inflamed area. This was done after evacuating the proximal bowel by means of the Ochsner trocar and closing the trocar wound by a purse-string suture. The anastomosis was done with a Connell suture. The recovery was uneventful and the patient was discharged at the end of three weeks and has remained well ever since.

Case IV.—Master N., a child of 10 years, with an acute intestinal obstruction of eleven days' standing. The patient's pulse was 150 to 160; the temperature 95° F. The abdomen was distended to its fullest capacity. The facies was that of rapidly approaching dissolution. The abdomen was opened to the left of the median line and the first loop of bowel which presented itself was brought up and nicked and the contents disposed of in a pus-basin which was filled many times. The opening in the bowel was sutured into the abdominal wound with as little handling of the bowel as was possible. A normal saline infusion was administered and strychnine in 1/60 grain doses given hypodermically every four hours. The patient slowly recovered. Six weeks afterwards a second laparotomy was done and the appendix was found to have a large enterolith in it and was bound down to the posterior abdominal wall in such a way that the ileum was completely closed by the adhesions from the appendix wrapped around it. The appendix was removed, and what we now know to have been a Lane's kink was dissected off and the bowel relieved from adhesions. The artificial anus was closed and the opening in the bowel repaired, when it was found that the lumen was too small. A side-to-side anastomosis was then performed and the abdomen closed. An uninterrupted recovery ensued.

Case V.—Miss S., referred to me by Dr. Wiley of Kimball. Patient had complete obstruction for twenty-six hours from an irreducible strangulated right femoral hernia. An immediate operation was advised. The abdomen was shaved and solution of iodine applied. A curved incision was made above the tumor and on opening the hernial sac a large amount of turbid bloody fluid escaped and disclosed the dark-colored gangrenous bowel. A median abdominal incision was made and the incarcerated bowel was isolated by hot gauze pads. The bowel was delivered and a section of six inches of gangrenous bowel excised. The ends of the bowel were ligated and invaginated by a purse-string suture and a side-to-side anastomosis was performed. The hernial sac was cleansed, ligated, and inverted, and the external femoral ring was closed. The abdomen was closed and recovery ensued.

Case VI.—Mr. D., an elderly man with an old hernia, came to me suffering with an irreducible strangulated hernia, which caused a complete obstruction. The patient was prepared and was on the operating table within a half hour after coming to the sanatorium. A curved incision above the tumor was made and the sac, on being opened, discharged a large quantity of serosanguineous fluid. The constriction was sought and nicked, and the bowel and the included mesentery were treated with hot laparotomy pads till the pinkish color indicated that the bowel was not destroyed. An exploration of the bowel below the sac disclosed a constricting band of adhesions within the abdominal cavity. These were dissected loose. The hernial sac was dissected loose from the cord and also from the internal ring and ligated about two inches out from the internal ring, the sac was inverted and the superficial fascia retracted strongly, and the top or the end of the sac was caught with a round needle passed through the abdominal wall and the sac was securely anchored. This procedure is an additional safeguard against recurrence of the inguinal hernia, as it makes a double layer of peritoneum over the internal ring from the internal abdominal aspect. The canal was closed by the Bassini method. An uninterrupted recovery ensued, the patient leaving for home on the seventeenth day.

Case VII.—Mr. C., a young man referred to me by Dr. F. Treon of Chamberlin, S. D. Patient had been treated about ten days before for a recent strangulated hernia. The strangulated condition had returned and the patient was in intense agony, vomiting and retching. Morphine had been injected, so he was anesthetized, and on failing to reduce the hernia by taxis an operation was advised and a brother, who accompanied him, gave consent. A curved incision above the tumor was made and the sac was opened. A quantity of straw-colored fluid escaped and a very much inflamed bowel was exposed. The constricting bands were nicked, the bowel was treated and the abdomen explored for any constrictions; the appendix was examined and found full of concretions. The incarcerated bowel was returned and the sac and cord were treated as in Case VI. A split-muscle incision was made over the appendix as the mesoappendix was too short to permit the performance of an appendectomy through the hernial opening. I believe it is very important to make an intraabdominal examination when operating in every case of hernia. The appendix was removed, and the stump was ligated and inverted by a purse-string suture. The patient made a splendid recovery.

Case VIII.—Mrs. C. had an intestinal obstruction of three weeks' standing. I called Dr. S. M. Duncan of Chamberlain to see the patient with me. Dr. Wagar of Bijou Hills had attended the case and had had no results from high colonic flushing. I thought that the obstruction must be low down in the bowel, since the patient who had been quite strong was rapidly becoming weak. If the obstruction is high up the symptoms are very much more severe than with a low obstruction. The patient averred she had had no movement for over three weeks. An incision was made in the median line and the sigmoid sought; a tumor was found in it which proved to be a carcinoma completely occluding the lumen of the bowel. The colon and the whole small intestine were loaded with fecal matter. As the patient seemed quite strong the carcinoma was resected and the ends of the bowels were stitched over and invaginated by a purse-string suture, and then a Lembert suture was made with linen and a left inguinal colostomy was performed after the method of Mayo. That night an immense bowel movement was obtained through the colostomy opening and two were obtained on each of the following days. A large amount was also obtained by irrigating the bowel through the colostomy wound. Supporting treatment was given with hypodermoclysis every four hours, but the patient died on the fifth day from exhaustion and toxemia.

This series of eight cases convinced me that an obstruction should be operated on within the first twenty-four hours or as soon as it is evident. Temporizing and hoping and waiting for nature's cure is a relic of the days of miracles when medical science was ignored and the patients were treated by empirical methods. The use of practical surgical measures is the only safe way and should be done early and not, as usual, as a forlorn hope.

Chamberlain Sanitarium.

Lupus Vulgaris and Scrofuloderma Treated by the Pfannenstill Method.—J. H. Sequeira reports the case of a poorly developed girl, aged sixteen, whose father was healthy, but whose mother suffered from phthisis. The girl had always been delicate. She had pneumonia when young, and had had measles fifteen months ago. The lupus started upon the back of each wrist eight years ago, and the lesions had been scraped. They gradually spread after the operation, and eventually reached the elbow and the upper arm. A little later the face was affected. Fifteen months ago she had what was described as being a tuberculous abscess behind the left ear. This was opened. Her hearing became affected, and she was very deaf. Her voice was husky. She came to the London Hospital in January, 1912, with extensive lupus of the nasal cavity and of the pharynx and palate. There was also double epiphora. There was extensive lupus, with some central scarring upon the hands and forearms up to the elbow. In February, 1912, the back of the right hand became much swollen and edematous and a localized purplish-red swelling developed over the back of the right wrist. This was 2 inches in its long diameter and 1½ inches transversely. The swelling evidently fluctuated, and it was opened, and a thin yellowish pus was evacuated. Later a small oval swelling formed along the line of the lymphatics. On February 21 she was admitted to the ward, and the arm was put on a splint. The ulcerated areas in the nose were treated by packing with gauze, which was kept constantly moistened with a solution of peroxide of hydrogen 10 vols. At the same time she was given 30 grains of sodium iodide *per diem* in divided doses. The tampons soaked with the peroxide were kept constantly in position, except when the patient was asleep. Finding so much improvement of the intranasal condition in this as in numerous other cases treated by the Pfannenstill method, the author had the ulcerated areas upon the forearm and wrist dressed in similar fashion, with great benefit. The case illustrated the value of the method, particularly in the treatment of ulcerative lupus of the cavities. The patient had borne the iodide very well, and to make sure that the condition was not complicated by congenital syphilis a Wassermann reaction was performed, with negative result. The patient has gained 7 pounds while in the hospital, and her general health has improved greatly—*Proceedings of the Royal Society of Medicine.*

Deafness Caused by Excessive Tea Drinking.—A. Sharp reports the case of a woman, aged forty, who complained of increasing deafness for about eighteen months. On examination there was found difficulty in locating sound, but no tinnitus; watch and whispered voice were heard about 6 inches from both ears; nose and throat were healthy; tympanic membranes were normal. Tuning fork tests were typical of nerve deafness. Family history was negative. No syphilis. Patient was subject to worry. She found that strong tea cheered her up, and admitted taking it as often as eight or ten times a day. The tea drinking was stopped, and in four weeks the hearing improved to 18 inches for watch and whispered voice. Improvement continued until the hearing was nearly normal. In spite of warning the patient again took to tea drinking and deafness resulted. On again giving up the habit normal hearing returned.—*Proceedings of the Royal Society of Medicine.*

MEDICAL RECORD.

A Weekly Journal of Medicine and Surgery.

THOMAS L. STEDMAN, A.M., M.D., EDITOR.

PUBLISHERS

WM. WOOD & CO., 51 FIFTH AVENUE.

See fourth page following reading matter for Rates of Subscription and Information for Contributors and Subscribers.

New York, September 28, 1912.

THE CONGRESS ON HYGIENE AND DEMOGRAPHY.

No more distinguished assembly ever gathered in this nation's capital than that which met the past week to discuss the great problems of personal and racial hygiene. Most of the subjects on the scientific program had already been presented in the various special journals. Nevertheless the purpose of this congress has been admirably accomplished in bringing into definite focus the latest tendencies in preventive medicine and statistical science. One of the conspicuous results of the preceding congress, held in Berlin five years ago, was the fact that it forced upon the attention of several governments the need of efficient legislation pertaining to industrial hygiene. There is reason to anticipate that even to a greater extent the nations of the world will be impressed by the message of the present congress. No more auspicious time than the present could have been chosen for the proclamation of authority upon such subjects as the plague, cholera, poliomyelitis, child welfare, eugenics, and military and naval hygiene.

It is noteworthy that this epoch-making gathering was really a collection of miniature congresses. What more brilliant galaxy for the discussion of tropical hygiene could have been brought together than Celli, Sergent, Brieger, Mesnil, Novy, Chantemesse, and Nicolle? Those who have been in the forefront in attacking the problems of poliomyelitis were almost all present: Landsteiner, Levaditi, Harbitz, Flexner, Römer, Netter, Petersson, and others. Similarly with other subjects. The directory of the congress looked like a miniature edition of "Die Gelehrte Welt." Another striking aspect of this congress was the extraordinary scope of the discussions which ranged all the way from the control of rabies to the hygiene of the engine-room; from the education of immigrants to the training of health officers; from the causes of mortality in the professions to the statistics of appendicitis in the German navy.

Most conspicuous of all in the affairs of the congress was the sympathetic interest in its organization which has been displayed by the Government of the United States and by its President. It is to this interest and to the care with which the organizers planned the congress that must be attributed its extraordinary success. The medical profession of this country will heartily endorse President Taft's advocacy of increasing the scope and usefulness of the Public Health Service. Truly, in the giant strides of modern sanitation one perceives a growing alliance between it and the State, for in the larger problems of colonization, of engineering, of industry, of commerce, and above all, of human welfare, the counsel of the physician must ultimately be sought.

THE FORCIBLE FEEDING OF SUFFRAGE PRISONERS IN ENGLAND.

A STORY whose recital sounds like a chapter from the annals of Torquemada, but in which one may be tempted to perceive a note of retaliation against the English government for the recent infliction of the National Insurance Law, is set forth in a preliminary report in the *Lancet*, August 24, 1912, by Agnes F. Savill, C. W. Mansell Moullin, and Sir Victor Horsley. This report, which seeks to answer the statement of the Home Secretary that the practice of forcible feeding is unattended by danger or pain, is based upon the written statements of 102 of the suffrage prisoners, of whom 90 were subjected to the operation of forcible feeding, as well as upon the examination of many of these prisoners after their release. It is pointed out that the suffrage prisoners have not hunger-struck in order to shorten their sentences, but only to obtain equality of prison treatment for prisoners convicted of like offences, and for justice in observance by the prison officers of the prison rules. The partial success of the "strike" is indicated by the fact that of the 102 prisoners who joined in this stoic protest 46 were released long before the termination of their sentences because of an alarming impairment of health. The above report in its apparent exaggeration of some of the unpleasant consequences of forced feeding has already elicited many vigorous protests from those who had anything to do with this method of penal administration.

An important item in the arraignment of the Government's method of feeding its belligerent and striking suffragettes is the statement that forcible feeding, even when no resistance is offered by the victim, cannot be performed without risk of mechanical injury to the nose and throat. Then follows an enumeration of the actual injuries that have been recorded: laceration of the nasal mucosa, with severe and recurrent bleeding; the production of an abscess in the nose with severe pain over the frontal region; swelling of the mucous membrane of the nose and pharynx, with pain over the area of distribution of the trigeminal nerve; septic pharyngitis; injuries of the lips, cheeks, and gums; the passage of the esophageal tube into the larynx, and the injection of food into the lung. In a large number of cases violent cardiac palpitation followed the forcible feeding, while giddiness, faintness, and collapse were frequent symptoms. In many cases the officials "*rapidly* poured large quantities of often *cold* liquid" into the inhospitable stomachs of the militant martyrs of womanhood suffrage. In many of the cases vomiting was a necessary consequence, and in most instances the sudden distention of the

stomach caused pain, heartburn, and nausea. The general inanition attending this form of tube feeding formed a contrast to the results of this procedure when used as a form of medical treatment in asylum and hospital practice.

It is stated that the most serious effects of the treatment by forcible feeding fall upon the nervous system. In this connection the words of the report may be quoted: "We are not here concerned to discuss the right or wrong of the political methods of the militant suffragist. We merely point out that on admission the prisoners are in a normal mental condition, which cannot be said of the patients who refuse food in the asylums. . . . In the evidence we have personally examined, and in the certificates afforded us by other physicians, there is certainly no evidence of 'hysteria'—using that much-abused word in the sense of exaggerated or excessive display of emotion." The symptoms that supervened upon the release from prison were chiefly those of acute neurasthenia: inability to concentrate the attention, loss of memory, hypersensitiveness to sounds, great fatigue, and general muscular weakness. In other cases the predominant symptoms were weak pulse, dyspepsia, pruritus, and vasomotor instability. As regards the mental condition during their stay in prison it is stated that "to the physical torture of forcible feeding the prison officials in many cases added the intellectual torture of solitary confinement, and to this was added the mental anguish caused by hearing the cries, choking, and struggles of their friends."

An interesting but grewsome chapter in penology is revealed in this report. Certainly the picture has been painted in lurid colors. Yet Bernard Shaw believes that if the suffragettes persist in their refusal to eat the Government should permit them to starve. The ladies will have their own way, anyhow.

MALIGNANT DISEASE OF THE LUNG.

The difficulties surrounding the diagnosis of pulmonary malignant disease, and the fact that this condition is usually mistaken for pulmonary tuberculosis, pleural effusion, or aneurysm, impart considerable interest to the review of this subject presented by A. A. Stevens in the *American Journal of the Medical Sciences,* August, 1912. It is pointed out that secondary malignant disease of the lung or pleura is not uncommon, arising by metastasis from distant organs, or by direct extension from neighboring structures; on the other hand, primary malignant disease of the lung is rare. The statistics of the Breslau Pathological Institute are cited: Of 9,246 autopsies, in which there were 1,000 cases of malignant disease, Pässler found 16 cases of primary carcinoma and 4 cases of primary sarcoma of the lung. Other observers have found primary sarcoma more common than primary carcinoma. As a rule primary sarcoma is limited to one lung, forming a large, infiltrating mass of variable consistency, and of a grayish color, often mottled with hemorrhagic areas. Remote metastases are rare in this condition, but in primary carcinoma secondary growths are found with great frequency in the various abdominal organs and in the muscles.

The chief symptoms of malignant disease of the lung may be those of a progressive consolidation of the lung, of stenosis of the larger bronchi or trachea, or of pleurisy with effusion. There are present dyspnea and cough, which is especially marked when the larger bronchi are involved, or the mediastinum is invaded and the trachea is compressed. In the majority of cases there occurs expectoration; there may be a "currant-jelly" or "prune-juice" sputum, which, however, is not characteristic; there may be fetid expectoration, and there may even appear in the sputum fragments of tissue which under the microscope may reveal the nature of the growth. In most cases hemoptysis is present. Pain is inconstant, but is quite severe when the pleura is involved or the thoracic nerves are compressed. Enlargement of the supraclavicular and axillary glands is an important symptom in carcinoma, but is exceptional in sarcoma. The cachexia that ultimately develops in most cases of malignant disease of the lung is of importance in differentiating this condition from aneurysm, the diagnosis of which is often extremely obscure.

The physical signs of malignant pulmonary disease, in the absence of pleural effusion, are an irregular area of dullness, and if the bronchi in the affected region are pervious, bronchial breathing and bronchophony. In the majority of cases the occlusion of the bronchi gives rise to enfeeblement or suppression of the breath and voice sounds. There may be bulging of the chest wall over the tumor, and in advanced cases the heart and abdominal organs may be displaced. The symptoms of pleurisy with effusion may dominate the clinical picture; the fluid removed by paracentesis is usually bloody, and examination of its sediment may reveal a large number of cells, which, if exhibiting numerous mitoses and asymmetrical division, favor the diagnosis of malignancy.

This diagnosis is often a matter of great difficulty. The presence of malignant disease in another part of the body furnishes an important clue which, however, is apt to fail in the case of primary sarcoma of the lung. Scraps of tissue in the sputum furnish conclusive evidence. In the case of consolidation of the lung suspicion may be aroused by the unusual location or distribution of the dull areas and the constant presence of blood in the sputum without tubercle bacilli. Of great significance are those physical signs that point to stenosis of the air passages, which condition in tumors developing within the lung does not occur, as a rule, until the disease is far advanced. Other conditions that simulate malignant disease are pulmonary syphiloma, and echinococcus disease, or dermoid cyst of the lung. The only characteristic sign of echinococcus disease, apart from the presence of cysts elsewhere, is the expectoration of hydatid membrane, but the presence of a pronounced eosinophilia and the complement fixation test may afford presumptive evidence of the presence of this condition. The coughing up of hair is the only pathognomonic symptom of intrathoracic dermoid cyst. A mediastinal tumor may also simulate cancer of the lung.

THE EFFECT OF CERTAIN CARDIAC REMEDIES ON ARTERIAL PRESSURE.

Of late years the literature dealing with arterial pressure has been profuse, and in many respects traditional views as to heart action have been revolutionized. It is only within recent years that the discovery has been made. Very little is really known concerning the heart. In the *Medical Press and Circular,* August 21, 1912, there is a paper by James Burnet, of Edinburgh, on the effect of certain cardiac remedies on the arterial pressure from the clinical standpoint. The results of his experiments with digitalis showed that even from the outset of its exhibition digitalis had no effect whatever upon the arterial pressure. The action of digitalis as a diuretic cannot, therefore, be explained as due to a rise in blood pressure. This action must be entirely attributed to improvement in the general circulation, so that any venous stasis in the kidney is relieved and the arterial blood pressure to that organ is reestablished. This probably explains why digitalis never produces diuresis in individuals with a normal and healthy circulating apparatus. The experiments with regard to caffeine were interesting, for the author experimenting on himself found that three grains of the citrate produced no change. With five grains a rise was observed which amounted to only 5 mm. of mercury. This, however, might be almost discarded. Within a quarter of an hour the pressure, which was 120 mm. to start with, rose to 130, and in half-an-hour to 135 mm. The headache from which the investigator was suffering was definitely increased. Not until an hour and ten minutes after the drug had been taken did the pressure return to normal. On another occasion ten grains were taken. In ten minutes there was a rise of 15 mm. in the blood pressure, and in half-an-hour 140 mm. was reached. Only in two hours afterwards was a normal reading obtained. Considerable inconvenience was experienced from the resulting diuresis. Caffeine is often recommended as a remedy in cases of migraine, but Burnet is confident that its use is really far from beneficial and actually aggravates the condition by raising the blood pressure in the cerebrum.

It is noted that strychnine is a most valuable stimulant to the circulation in cases in which the latter threatens to fail, as in pneumonia. Its effects on arterial pressure are very definite, and the opinion is expressed that when the blood pressure has fallen below the normal strychnine is the drug to administer. The belief is expressed that the more we know of the real action of drugs the more limited will be the number of those we employ. Assuredly the effect of drugs on the arterial pressure is a matter of great moment, and if Burnet's observations are confirmed it is probable that much of the older teaching on the subject will be set aside.

The Present Status of Casein-Milk.

Three years have elapsed since Finkelstein and Meyer introduced their method of treating acute and chronic gastrointestinal disturbances in infants by means of "casein-milk," which consists of a watery-suspension of freshly prepared casein mixed with an equal quantity of buttermilk. This method, which appeared to be in direct variance with established teachings, is based upon the theory that the harmful factors in cases of alimentary intoxication in infancy are the carbohydrate and mineral constituents of the milk. At first this theory was received by the pediatric world with considerable scepticism, but this has gradually vanished in the face of the brilliant results which have been achieved by those who have tested this novel method of treatment. In Germany Birk, Bahrdt, Welde, Grosser, Benfey, Beck, and others have testified to the value of casein-milk, while in this country its virtues have been recognized by Chapin, Leopold, Dennett, Heiman, Pisek, and many others who have given it a fair trial. An enthusiastic advocate of casein-milk feeding is Professor J. Cassel of Berlin, who in the *Archiv für Kinderheilkunde,* August 13, 1912, details the results he has obtained with this method in 61 cases. These consisted of cases of acute and of subacute dyspepsia, of gastroenteritis of a pronounced toxic type from the very beginning, and of chronic dyspepsia. As the result of his experience Cassel subscribes to the statement of Finkelstein and Meyer that there is no method of infant feeding that cures even severe cases of the above conditions with as much certainty and as quickly as casein-milk. But he finds that it is not necessary to continue this food for such long periods of four to eight weeks as originally recommended. The expense item is an important consideration which is practically prohibitive in the case of the poor families among which these cases are almost wholly found, and even children's hospitals with a limited endowment feel the financial burden which the wide use of casein-milk entails. Nevertheless the fact that in many cases the use of this milk is necessary only for from a few days to one or two weeks, makes the matter of expense one which can be practically disregarded, particularly in view of the ultimate saving resulting from the rapid recovery of the patient fed upon casein-milk. It is to be hoped that this preparation will find a wider use in general practice. Possibly the municipal milk stations might be induced to supply this preparation, just as the milk laboratories have already done. A dried form of casein-milk is now on the market.

News of the Week.

International Congress for the Study of Infantile Hygiene and Pathology.—The next International Congress for the Study of Infantile Hygiene and Pathology will be held at Paris, October 7, 1912. It is the desire of those having charge of the congress that as many pediatrists as possible of foreign countries may attend. The honorary president of the congress is the minister of public instruction of France.

Middleton Goldsmith Lecture.—Dr. E. F. Bashford, Director of the Imperial Cancer Research Fund of London, England, will deliver the Middleton Goldsmith Lecture of the New York Pathological Society on Wednesday and Friday evenings, October 2 and 4, at 8:30, at the New York Academy of Medicine, 17 West 43d Street. Dr. Bashford will speak on "A Review of Recent Cancer Research." The lectures are open to the public, and a cordial invitation to be present is extended to all those interested.

New Hospital.—The completion of the Italian Hospital, which stands at 83d Street and the East

River, New York, was celebrated on September 20 with suitable exercises. Patients will be admitted on October 15. The building, toward the cost of which the Italian Government gave $60,000, will accommodate one hundred patients, and is a five-story steel and stone structure overlooking the river.

Civil Service Examination.—The United States Civil Service Commission announces an open competitive examination for the position of assistant in experimental therapeutics in the Philippine Service, for men only. There is at present a vacancy in the Bureau of Science, Manila, at a salary of $2,000 per year. Applicants desiring to enter the competition should apply at once to the United States Civil Service Commission, Washington, D. C., for Form B. I. A. 2. The examination is open only to male citizens of the United States between the ages of eighteen and forty, who are graduates in medicine and have had at least one year in addition of postgraduate laboratory research work.

Death Rate in New York.—For the week ending September 14, 1912, the death rate in New York City was 12.62 per thousand of population, with a total of 1,251 deaths, while the rate for the same week of 1911 was 12.65. During the week there were 314 deaths under one year of age and 400 under five years. For the thirty-seven weeks of 1912 so far elapsed the death rate per thousand was 14.51, as compared with 15.72 for the same period of 1911.

Death of Centenarian.—Daisy Paul, believed to be 107 years old and the oldest Indian in Canada, died recently on the St. Mary's Indian Reservation, New Brunswick.

Smallpox in Pennsylvania.—The State Commissioner of Health of Pennsylvania after investigating the cases of smallpox at Pittsburgh and at Carbondale recently, has reached the conclusion that the outbreak may be attributed to the failure of physicians and parents to carry out the laws of the State in regard to vaccination. In Pittsburg alone there had been up to September 17, sixteen deaths of unvaccinated children under seven years of age. On that date there were throughout the State 130 cases of the disease. The source of the infection in Pittsburg has not been traced, the first cases discovered there having been in the crowded tenement districts. The Carbondale outbreak, however, is believed to be traceable to a case from New York State, the spread of the disease being due to a wrong diagnosis. The cases were at first thought to be chickenpox and quarantine was considered unnecessary.

State-Wide Campaign.—With the meeting of the officers of the New York State Department of Health and of certain charity aid associations on September 17, in Albany, the fight against tuberculosis in this State received fresh impetus. Already twenty-one counties in the State have decided to build tuberculosis hospitals, and it is expected that nine others will soon do so. In Westchester County, where $250,000 has been appropriated for a hospital, some opposition has arisen to the site selected—a farm of 277 acres situated near Croton Lake, and in the midst of the watershed supplying New York City. Property owners in the neighborhood have also objected on the ground that the establishment of such a hospital will decrease the value of their holdings.

Brain of Dr. McGee.—Dr. E. A. Spitzka has reported that the brain of Dr. McGee, which was delivered to him, weighed 1,410 grams. In a list of 100 eminent men prepared by Dr. Spitzka the average weight of the brain was 1,469.65, that of Ivan Turgenieff, the Russian novelist, ranking first with a weight of 2,012 grams.

Open Air Schools.—With the opening of the fall school term this year over 200 open air schools and fresh air classes will be in operation all over the United States. The first such school was established in Providence, R. I., in January, 1907; on January 1, 1910, there were only thirteen open air schools in the United States, and a year later only twenty-nine, so that the chief increase has been within a very short time. In Massachusetts there are now eighty-six fresh air schools and classes, Boston alone having over eighty; in New York State, twenty-nine, and in Ohio, twenty-one.

Horse Plague.—Twenty thousand horses, it is reported, have already fallen victims in Kansas and Nebraska to the new scourge, the so-called spinal meningitis. The United States Department of Agriculture has sent twenty experts to the affected districts to study and if possible control the epidemic, which is prevalent in seventy-five of the 105 counties of Kansas.

Destroy Infected Cattle.—Seventy-five head of cattle, all infected with tuberculosis, were ordered killed recently by Dr. W. H. Lowe, inspector of the First District of New Jersey. This is the largest single condemnation of diseased cattle yet made in the State, and is the result of the discovery several months ago of an epidemic of tuberculosis among the cattle in the Preakness Valley, most of which were taken into the State from New York, it is said, in violation of the State laws.

Gifts to Charities.—The New York Society for the Relief of Ruptured and Crippled receives $5,000, and the New York Society for the Relief of the Destitute Blind $10,000 by the will of the late Mrs. H. M. T. Holly of New York.

Dr. Charles J. Kipp of Newark, N. J., by his will gave all his medical books and instruments to the Newark Charitable Eye and Ear Infirmary.

Yale University has received a bequest of $25,000 from the late Dr. Cyprian Brainerd of the class of '50 for the use of the medical department.

Obituary Notes.—Dr. JOHN LAWRENCE HUGHES of Mount Vernon, N. Y., a graduate of the College of Physicians and Surgeons, New York, in 1899, a member of the American Medical Association, the New York State and County Medical Societies, and the Mount Vernon Medical Society, and health officer of Mount Vernon, died in the New Rochelle Hospital on September 20, from injuries received in an automobile accident a few hours before, in the thirty-seventh year of his age.

Dr. WARREN H. HUNTER of Chicago, Ill., a graduate of the Rush Medical College, Chicago, in 1896, chief coroner's physician of Chicago, and a member of the Illinois State and Cook County Medical Societies, died in the West Side Hospital, Chicago, from blood poisoning contracted in the course of his official duties, on September 4, aged 44 years.

Dr. JOHN THOMAS KNOWLES of Springfield, Mo., a graduate of the Memphis Hospital Medical College, Memphis, Tenn., in 1909, and a member of the Missouri State and Greene County Medical Societies, died at his home of typhoid fever on September 1, aged 33 years.

Dr. HAROLD T. PRENTISS of Holyoke, Mass., a graduate of the University of Pennsylvania, Department of Medicine, in 1894, died at his home after a long illness on September 14, aged 43 years.

Correspondence.

THE FIFTEENTH INTERNATIONAL CONGRESS ON HYGIENE AND DEMOGRAPHY.

(Special Report to the MEDICAL RECORD.)

OPENING SESSION—ADDRESS OF PRESIDENT TAFT—RESPONSES FROM FOREIGN DELEGATES—PUBLIC HEALTH ORGANIZATION AND ADMINISTRATION IN ENGLAND—INSTRUCTION IN CHILD HYGIENE—BREATHING EXERCISES IN SCHOOLS—THE HYGIENE OF THE TEACHER—FAVUS IN THE SCHOOLS OF MEXICO—TRANSMISSION OF DISEASES BY BOOKS—SYPHILIS AND GONORRHEA IN CHILDREN—EFFECTS OF TEMPERATURE AND HUMIDITY ON FATIGUE—FATIGUE FACTORS IN OCCUPATIONS—FATIGUE IN INDUSTRIAL WORKERS—FOOD PRESERVATIVES—SEXUAL DISEASES IN THE ARMY—DUST AND FUME IN INDUSTRY—AERIAL AND CONTACT INFECTION—INFECTED ROOMS AND FOMITES—DISINFECTION OF STOOLS—CUBAN HEALTH ADMINISTRATION—CONTROL OF RABIES—MUNICIPAL VENEREAL CLINIC—FOUNDLINGS—INFANT MORTALITY.

WASHINGTON, D. C., September 23 and 24, 1912.

ABOUT three thousand delegates, members, and visitors were present at the opening of the Fifteenth International Congress on Hygiene and Demography which took place in Continental Memorial Hall. The President of the Congress, Dr. Henry P. Walcott of the State Board of Health of Massachusetts, made the opening address. He stated that Massachusetts was the first State to frame a sanitary code and that now forty-eight States have codes which are essentially the same, though differing in detail. He showed how these health boards had gradually developed their functions from those that were merely advisory to such as are actually executive. This process was sometimes slow because the executive power was lodged with the people and it was first necessary to educate the people as a whole. He explained that the reason the enforcement of health laws devolved on the several States was because they had existed individually before the Federal Government and had retained all the functions not transferred to the central authorities. In view of the lack of knowledge in regard to sanitation and the ineffectiveness of early quarantine measures it is not at all surprising that when the Federal Government was organized in 1787 no provision was made for the institution of sanitary measures. Likewise the census was taken merely for finding how many people there were, without any idea of the value of statistics in relation to health and disease. Later, when some of these problems were attacked, it was found convenient to assign this work to the Treasury Department and the Marine Hospital Service. All the political parties were now inviting attention to the need of a separate department which should have charge of all matters pertaining to the public health and should be so designated that all the world may know the work carried on under its direction. He spoke of our victories over cholera and yellow fever, the latter giving us more trouble than any other pestilence and coming as far north as Boston. He also described the brutal force of unscientific quarantine in former times. President Taft then arrived and Dr. Walcott introduced him, saying that this was the first time in the history of the Congress that the ruler of the country in which the meeting was held had been present and willing to assume a share of the responsibility.

President Taft referred to the progress made by the medical profession during the past forty years as being far greater than that made by any other profession and prophesied that if the high aims of investigators and benefactors of humanity should continue during the next century they would discover the fountain of youth so earnestly sought by early discoverers. While he did not wish to be understood as saying that the study of sanitation had its beginning with the Spanish-American War, this event, comparatively insignificant in itself, had made evident the need of sanitation in the tropics. Out of this war came responsibilities in Cuba and the Philippines which necessitated the establishment of governmental institutions in the tropics. In the tropics diseases show themselves on a larger scale and exert an influence on large bodies of men to a more marked degree than in temperate zones; hence the problem of making the tropics habitable presented itself. This problem had been solved not only for government employees who had been sent there but for the entire population and it has been shown that it is possible by proper health methods and proper treatment to revitalize the tropical races and secure to them that physical vigor which will enable them to develop the marvelous resources of the countries in which they live. The problem of enforcing health regulations against the will of an ignorant people required a strong goverment and the raising of sufficient funds by taxation to support an adequate police. With the present tendency to lodge more executive power with the people it remained to be seen how this would work out.

"There is no difficulty in running a government cheaply if you limit its functions to the preservation of peace and the administration of justice; but if you propose to add to these systems of education, good roads, government hygiene, and other improvements, you must look about for sources of revenue which are not always forthcoming and you must educate the people to understand the importance of the hygienic restrictions and of imposing upon themselves the burden of taxation which it is essential for them to carry in order that progress may be made."

In speaking of the success achieved in the prevention of tropical diseases in the Canal Zone, President Taft said that the building of the canal would have been an impossibility but for the solution of problems of hygiene and that it was fitting and proper that the health officer who had made this achievement possible should upon its completion share equally in the honors with the engineer.

With regard to the value of the Congress he said he could not conceive of any organization being more useful, because the comparison and discussion of ideas and theories by men engaged in the same hunt for truth would necessarily give an impetus to hygiene, sanitation, and demography the world over; and again because the Congress was one of those shining instances of world-wide organization in which the interests of humanity occupied the first place, in contrast with the selfishness and conflict of interests typified by our burdensome and ever-increasing preparations for war. Such a Congress having representation from all the world offered to the scientific student who was willing to devote his life to the search for knowledge that would add to the health, comfort, and happiness of his fellow a reward that could not be measured in money, but was to be found in the consciousness of duty well done.

In regard to the creation of a national health department, the President said that we should develop under governmental auspices a department which should support research in hygiene and preventive medicine. Something of this sort might grow out of the present United States Public Health Service, but there was reason to believe that there should be a widening of its scope of duties before it can perform the function that the medical profession of this country has a right to expect from the general government.

Geheimrat Prof. Dr. Max Rubner, Königl. Freidrich Wilhelms Universität, Berlin, Germany, President of the Permanent International Commission of the Congresses of Hygiene and Demography, opened the plenary sessions, giving an address entitled: "A Presentation of the Significance of Hygiene and Demography as Regards the Sanitary Measures Adopted by Nations with Special Reference to International Cooperation, and with a Historical Survey of the Subject." This was followed by reports as follows: For Argentina, Surgeon Dr. Juan G. del Castillo; for Austria, Dr. Arthur Schattenfroh; for Hungary, Prof. Francis Tangl, Court Councillor, Professor at the University of Budapest; for Belgium, M. Velghe, Director General of the Administration of the Service of Health and Hygiene; for Brazil, Dr. Alfredo da Graca Couto, Inspector of the Service of Isolation and Disinfection, Federal Government of Health, Ministry of Justice and Interior; for Chile, Fleet Surgeon, Major Alberto Adriasola; for Denmark, Dr. A. C. J. Bornemann, Chief of the Medical Corps of the Navy Department; for Dominican Republic, M. Francisco J. Peynado, Envoy Extraordinary and Minister Plenipotentiary; for France, M. Emile Kern, Ingénieur Civil, Président de la Société de Médicine Publique et de Génie Sanitaire; for Germany, Dr. Rubner, Geheimer Medizinalrat, Universitätsprofessor, Direktor des Physiologischen Instituts der Universität, Berlin; for Great Britain, Dr. Theodore Thomson, Local Government Board (representing those British Colonies not represented separately); for Canada, Dr. Frederick Montizambert, I.S.O.Edin., F.R.S., D.C.L., Director-General of Public Health; for Greece, Dr. L. L. Caftanzoglu, LL.D., Chargé d'Affaires; for Guatemala, Señor don Joaquin Mendez; for Italy, Prof. L. Pagliani, University of Turin; for Japan, Mr. Seiji Tsukamoto, Councillor of the Department of the Interior; for Norway, Prof. Axel Holst; for Russia, M. Zort, Councillor of the State and Physician of the General Staff of the Chief of Brigade of Ships of the Line of the Baltic Sea Squadron; for Siam, Prof. Paul G. Woolley; there were also reports from the official delegates from Bolivia, Costa Rica, Cuba, Mexico, Netherlands, Spain, Uruguay, and Venezuela.

In the afternoon a reception was given to the visiting members and ladies by President Taft at the White House, after which several of the sections met at their respective meeting places; among these was a joint meeting of the Section on State and Municipal Hygiene and that on the Hygiene of Traffic and Transportation, which was presided over by Dr. Frank F. Weshrook of Minneapolis, President of the Section on State and Municipal Hygiene. The session was given up to a symposium on Public Health Organization and Administration by British and German health officials. Dr. Theodore Thomson, C. M. G. Chief Assistant Medical Officer, Local Government Board, London, read the first paper, on "Public Health Administration in England." The Local Government Board was established in 1871 as a Central Department and stood in advisory relation to 1822 sanitary districts and 62 administrative counties. The head of this Local Government Board ranks equally with the Secretary of State and other cabinet ministers. The inspection of factories rests with the Department of State. There is a separate commission on lunacy. The Board of Education also has a medical department. The lesson that their system of administration seems to show is the possibility of cooperation and its effectiveness between different health agencies. By their system every sanitary district was prepared to care for contagious diseases and provisions were rapidly being made for the care of those afflicted with tuberculosis; where the district was not able to stand the expense help was given from the insurance fund and the exchequer. They also maintained schools for defectives. The careful keeping of statistics was one of the duties of each local officer and he was required to present his report quarterly and annually to the Local Government Board. The housing and Town-planning Act, passed in 1909, had increased the authority of both the local and central health boards in suggesting repairs and regulating new buildings. The Local Government Board prepared model by-laws for the regulation of lodging houses, street planning, building, removal of refuse, etc., which could be used as guides by local authorities.

Dr. Weber of the Imperial Board of Health, Berlin, then spoke of the Public Health Administration for the Empire and Dr. Schneider, of the Royal Prussian Ministry of the Interior, described the health administration in Prussia.

The Section on Hygiene of Infancy and Childhood, which was presided over by Dr. Abraham Jacobi, had a very large attendance. Dr. Mary Sutton Macy of New York read the first paper, on "Instruction in Child Hygiene," in which she especially called attention to the deficiency of the literature on personal hygiene of childhood. She thought sources for instruction in child hygiene should be made available for parents, teachers, and the general public. She showed that there was great need for such instruction and told of the activities in such instruction that have been carried on in New York during the last few years. Dr. Ira S. Wile of New York submitted a plan for teaching school hygiene which can be used in the elementary schools. He believes this is the place to teach the basis of social hygiene, as 94.5 per cent. of school children fail to get above the elementary school. His plan consists of graded syllabic lessons based on a correlation of existent courses in nature study, physiology, hygiene, domestic science, civics, etc., without the introduction of new studies and without any additional cost to the educational authorities. The average child will grasp and appreciate the facts essential to the correct mode of living whereas it lacks the interest necessary to stimulate attention in the present mode of teaching physiology. To understand the dominating rules of life as they apply to the individual and to perceive the relation of these individual rules to the life of the family is far more reasonable to the child mind. Once grasping the relation of personal hygiene to the health of the family a stepping stone is laid to an intelligent conception of the relation of individual hygiene to the health of the community.

Dr. S. Adolphus Knopf of New York made a

plea for breathing exercises in schools and gave a detailed description of a series of exercises which could not help but be of value in the development of the chest of the child or adult. Dr. Knopf also made a plea for more out-door instruction. Whenever the weather permits, singing and recitation should be done out-doors and natural sciences should be taught in the open air. The typical out-door school for summer and winter, conducted under well-known precautions, should be the rule rather than the exception.

"The Hygiene of the Teacher" was the subject presented by Dr. Grace Kimball of Poughkeepsie, N. Y. She called attention to the tendency to consider only the pupil in school construction and appointments. She pointed out the shortsightedness of a policy which did not furnish a proper environment for the teacher and which showed no consideration as to the amount of work required. Overwork and under-pay lessens efficiency and the pupils suffer as well as the teachers. The fundamental responsibility for hygiene and increased efficiency of the teacher rests with society. She should receive such compensation as will relieve her of domestic duties out of school hours.

In discussing this paper a member of the Health Board of Kansas City called attention to a very general omission in our health work, and that is the neglect to require all applicants who wish to teach to submit to a physical examination. It is a menace to the pupils to permit a person to teach who is tuberculous, neurotic, or hysterical. One might even go a step further and require girls to pass a physical examination before being admitted to schools that prepare teachers.

Dr. Manuel Uribe y Troncoso of Mexico City, Mexico, related the history of their struggle with favus in the schools of Mexico. During the school year 1910-1911, 2,784 pupils were separated from the public schools because of favus. About 8.2 per cent. of all pupils were affected by the parasite. The disease was widely disseminated not only in the public schools but in the private schools also. They made use of the *x*-ray treatment, which reduced the duration of treatment to two or three months. There were two special schools in the City of Mexico for pupils affected with favus, and the children thus lost no time from school and were at the same time kept under observation and treatment.

Dr. William R. Reinick discussed the "Transmission of Disease by Books." He showed that books presented favorable conditions for the preservation of bacteria and said that it was impossible to disinfect them, as hot air and steam will not penetrate, but will ruin books. Dust taken from books in Florida which had been untouched for thirty or forty years showed many species of bacilli still living.

"The Occurrence of Syphilis and Gonorrhea in Children by Direct Infection" was the subject of a paper read by Dr. Abraham L. Wolbarst of New York, in which he stated that these diseases occurred much more frequently in children than was supposed. The danger of direct infection of the eyes at birth was, of course, avoidable and unnecessary. He blamed unhygienic conditions and lack of privacy in the homes of the poor as leading to sexual precocity which unscrupulous and ignorant adults were not slow to take advantage of. Uncleanly catheters used in hospitals and uncleanly bathing in institutions were also responsible for infections. Girls were much more frequently infected than boys.

In the Section on Hygiene and Occupation under the presidency of Dr. George M. Kober, professor of hygiene, Georgetown University, Washington, D. C., there was an interesting paper on "The Effects of Temperature and Humidity on Fatigue" by Prof. Frederic S. Lee of New York City. He said that with human beings the relation between temperature, humidity and fatigue was shown most clearly in life in the tropics and in those industrial occupations in which the individual was obliged to labor in a hot atmosphere containing much moisture. Not only are sensations of fatigue there common, but the power of performing work is distinctly lessened and actual fatigue comes on earlier. The evaporation of sweat and the accompanying elimination of bodily heat is lessened by the high external humidity, and the body temperature therefore rises above the normal, and a febrile condition results. He claims that this febrile condition affords the proper chemical conditions for a pronounced susceptibility to fatigue. In the body laboring in an atmosphere of an elevated temperature and charged with much moisture, conditions were found that were needed for the early oncoming of fatigue; there were a store of toxic fatigue substances and tissues possessing an unusually great susceptibility to the action of such substances.

Prof. Shepherd I. Franz of Washington, D. C., considered "Fatigue Factors in Certain Types of Occupations." At present there has been investigated only one part of the general problem, viz.: the fatigue effects that result from continued and rapid work, which was more or less complicated in the nature of the movements required. Special reference was, therefore, given to the matter of speeding up, or the carrying on of operations at greater speed than that which the operator would normally assume.

A paper on "The Study of Fatigue and Its Application to Industrial Workers" was presented by Miss Josephine Goldmark, of the National Consumers' League, New York City. The object of this paper was to point out some hitherto unrecognized or neglected aspects of scientific study which might assist in combating that danger of occupation which was more widespread than all others because it affected the larger number of wage earners. The most hopeful methods of combating over-fatigue and exhaustion in industry were two: legislation prohibiting excessive hours of labor and the education of employers. Neither method was sufficient alone. They needed a new study of undue fatigue in industry. The workday was too long when it went beyond physiological limits, when no adequate margin of rest was allowed for tissue repair. They needed to know what was an adequate margin of rest. They needed, above all, men of the highest professional standing to plan such investigation along broad lines, so as to discount what was transient and temporary and to obtain the underlying facts, for the conservation of health and efficiency.

Dr. Clarence John Blake, professor of otology, Harvard Medical School, Boston, believes that the deleterious effects of unnecessary noise are evinced not only in the changes occurring in the organ of hearing as the result of continued exposure to loud noise, but also in the fatigue effect showing itself generally and evidenced by various forms of disturbance of function of the nervous system. He believes that a great part of the noise incident to the mechanical operation of modern life is avoidable. The suppression of unnecessary noise is, therefore, advisable for economic reasons, both in

the safeguarding of the human machine and in the saving of wasted mechanical energy, of which the noise is an evidence—a saving of waste in two directions.

In the Section on Dietetic Hygiene and Hygienic Physiology, under the presidency of Dr. Russell H. Chittenden, professor of physiological chemistry and director of the Sheffield Scientific School of Yale University, New Haven, Conn., a paper on "The Physiological Significance of Some Substances Used in the Preservation of Foods" was read by Dr. John H. Long, professor of chemistry, Northwestern University Medical School, Chicago. This paper deals with the action on the human organism of a number of substances employed as food preservatives, or otherwise, in the preparation of food. It was shown that a considerable number of substances are added to food largely because of their preservative properties, rather than because of flavors they may impart. Some of the so-called "natural" preservatives come under this head. Modern conditions of living and modern scientific advances have called for the introduction of more efficient bodies, the so-called "chemical" or "artificial" preservatives. Many of these bodies have been condemned, and perhaps properly, but frequently the condemnation is solely on the ground of their origin. This basis of condemnation has no justification in fact, as all preservatives are as truly chemical as are those of recent introduction made by industrial processes. The active principles in cloves, cinnamon, allspice, etc., are true chemical compounds, and in their action on the body and final disposition are much like benzoic acid, now made largely by laboratory processes. A number of important investigations on the physiological action of sodium benzoate have been carried out in the last few years. The effects of large and small amounts of benzoic acid are known, and it has been clearly shown that the use of the small quantities employed in the ordinary protection of the condimental foods is quite unobjectionable. Such small amounts are normally disposed of in the human body without ill effects. The use of copper salts in coloring vegetables he discussed. There is an enormous literature on the subject, especially from France and Germany, where copper has long been used in the canning industries. Several commissions have pronounced in favor of permitting the use of copper salts, although others have opposed it. But all authorities have come to agree that the toxicity of these salts is much less than was at one time assumed. This toxicity depends somewhat on the combinations in which the salts are ingested. The effects of copper as used in young peas or string beans are far less marked than are those of inorganic salts. It is, therefore, not quite justifiable to draw conclusions as to the behavior of copper from experiments with copper sulphate alone. If only very young and fresh vegetables, with plenty of chlorophyll, were treated with copper, and if the amount were strictly limited, there might be but little fault found. But with older vegetables the combination is far less stable and the effects approach those of the inorganic salts. The amounts of copper taken up by the liver and other organs from inorganic salts may be considerable, and such absorption cannot be held free from danger. The use of these salts serves no real good purpose and should be condemned.

In the Section on Military, Naval, and Tropical (Colonial) Hygiene, under the presidency of Medical Director Henry G. Beyer, U. S. Navy, Washington, D. C., in a symposium on "Fighting the Sexual Diseases in the Army," the opening paper was by Oberstabsarzt Professor Dr. von Vagedes of Danzig, Germany, who gave a brief survey of the spread of sexual diseases and the measures which had proven practical and successful, especially in the German army. Statistical facts were given in stereopticon views.

Colonel L. Mervin Maus of the U. S. Medical Corps read a paper on "Venereal Prophylaxis in the Army," giving his reasons for the increase of venereal diseases since 1900. One was the poor character of the recruits. Again there was the undesirable location of the recruiting stations in large cities. A number of men were accepted suffering from chronic gonorrhea. Venereal diseases were a great factor in the non-efficiency of troops and he spoke of their racial and geographical distribution. Semi-prostitutes were large factors in disseminating venereal diseases. Previous to the Spanish-American War venereal diseases were regarded with official indifference. Inspections or forced treatment was not practised before that period. There was a special inspection of troops before embarkation for Cuba, Porto Rico, and the Philippines and a general examination of volunteer regiments before mustering out of the service. There were given health lectures and moral suasion as measures for the prevention of venereal diseases. There was the regulation bi-weekly inspection by a medical officer, as well as the weekly inspection by an instructed non-commissioned officer in the presence of the company commander.

Medical Inspector George A. Lung of the U. S. Navy read a paper on "Venereal Prophylaxis" and called attention to the conditions suggesting need of unusual methods for lessening incidence of venereal diseases in the navy. Major Deane C. Howard of the U. S. Army, believed that venereal diseases in armies not entirely eradicated were yet preventable in great part. Effective measures applicable in the U. S. Army are directed chiefly to the individual soldier. The sources of infection (prostitutes) are beyond military control, and there should be effective regulation and sanitary supervision of prostitution by the civil authorities; this was unlikely because of public sentiment. The valuable measures of prophylaxis applicable in the U. S. Army were as follows: 1. Educational and moral measures, through lectures by medical officers, moral talks by chaplains, informal advice, venereal pamphlets, are desirable but of limited value. 2. Recreative features, athletics, soldiers' clubs, gymnasia, reading rooms and other wholesome amusements in garrison. 3. Physical inspection (bi-monthly) of all soldiers for concealed cases of disease essential. Every known case of disease should be made of record and treated in hospital. When discharged, the case should be kept in semi-quarantine, and under prolonged observation and treatment to prevent re-exposure or relapse. 4. Personal prophylaxis is of greater value than all other preventive measures combined. Fully 80 per cent. of venereal infections are preventable if proper treatment is given within 10 hours following coitus. The treatment should be given by or under the supervision of a trained hospital attendant. The treatment must be made mandatory by military order, which must be strictly enforced by summary punishment for non-compliance. Mandatory individual prophylactic treatment following exposure was initiated at Jefferson Bar-

racks, Missouri, in August, 1911. The treatment consists in (1) thorough cleansing of genitals with 1-5000 mercuric chloride solution; (2) injection of 4 c.c. of 20 per cent. argyrol solution into the anterior urethra; (3) the application of two to four grams 30 per cent. calomel ointment to the entire penis. Accurate record is kept of each treatment in a permanent register.

On the evening of September 23 Sir Thomas Oliver of the College of Medicine, University of Durham, England, addressed the General Session on the subject of "Dust and Fume, Foes of Industrial Life." He said that it was never meant that labor should be anything else than a source of health and wealth to man. Trades should be free from danger. In modern industrial life we are struck with two things: 1. The effect of the occupation upon those who follow it; 2. the influence of industries upon localities. With the rise of industrial prosperity in Germany the death rate from acute pulmonary diseases has increased and the increased mortality rates bear a distinct relation to the size of the town, the density of the population, and the social well-being of the people. Smoke-laden atmosphere predisposes to acute lung diseases and also hastens the course of tuberculosis. The dust of our roads and streets is responsible for the early decay of vegetation and is also harmful to animal life. Dust in coal mining is one of the greatest problems of modern industrial life. This dust is not only prejudicial to health but is a source of explosions. While firedamp was formerly regarded as the cause of explosions there is a growing conviction that dust plays the more important part. Sir Thomas Oliver related the methods that have been used in the endeavor to prevent explosions by sprinkling with stone dust and the use of colloidal substances and said that he believed the laboratory would yet solve the problem. Hitherto men overcome in the mines by the gases evolved from explosives have been supposed to be suffering from the effects of nitrous fumes. The speaker hardly takes that view. In his opinion the symptoms are the result of carbon monoxide poisoning. Occasionally, chronic carbon monoxide poisoning is observed in blast furnace men. The symptoms resemble those met with in general paralysis. Sir Thomas Oliver, after congratulating the United States Government and the American Association for Labor Legislation upon the former having passed into law a bill which deals with the use of white phosphorus in the manufacture of lucifer matches, described the evil effects of the metalloid as shown in the general malaise or constitutional state of ill-health occasionally met with in lucifer matchmakers and known as "phosphorisme." In speaking of the relation of dust to tuberculosis he said: "There is always the possibility of dust, especially in workshops, becoming contaminated by the tubercle bacillus. Apart from such infection there is the harmful influence exercised by dust as dust upon the lungs, whereby they cease to be of a loose, spongy texture and are converted into a hard unyielding mass of almost solid tissue. All this structural change can be brought about by the reaction to the physical effects of dust. Coal miners' phthisis or pulmonary anthracosis, gold miners' phthisis, and the lung affections of the Sicilian miners are in their early stages non-tuberculous affections, but, as the disease progresses and vital resistance diminishes, the lungs subsequently become infected by the tubercle bacillus."

In the Section on the Control of Infectious Diseases, which met for the first time on Tuesday morning under the presidency of Dr. Herman M. Beggs of New York, Dr. Charles V. Chapin of Providence, R. I., read a paper on "Relative Importance of Aerial and Contact Infection in the Dissemination of Contagious Diseases," which was very enthusiastically received. He made the point that infection by air is of minor importance, if not an entirely negligible factor. The existence of carriers and mixed cases affords such ample opportunity for infection by contact that the theory of aerial infection is no longer required by a *priori* reasoning. In proof of this statement he directed attention to experimental and epidemiological evidence. The observations around hospitals and dwellings show that scarlet fever and diphtheria are not carried by the outer air. Bacteriologists tell us that tuberculosis probably is not. Careful analysis shows that there is no validity in the claim of certain English observers that smallpox may be carried a mile or more from a hospital.

With regard to air infection indoors, he said it was theoretically possible that diseases might be transferred through the air of houses and hospital wards, though the virus might be too diluted in the outer air to do any harm. "Malaria and yellow fever, in the absence of mosquitos, are never transferred from bed to bed. Hospital infection rarely occurs in cholera and typhoid fever, and when it does, is traced to contact infection. The bubonic type of plague, Mediterranean fever, cerebrospinal meningitis and poliomyelitis do not spread in hospital wards. Ample epidemiological evidence, as well as experiments by Horrocks, and the work of the English Plague Commission, have demonstrated that Mediterranean fever and bubonic plague are not air-borne. Typhus fever is transferred by biting insects, and the experience of Edinburgh, Liverpool, and Mexico shows that infection by air does not occur in hospitals. Work done in France, England, and the United States has shown that diphtheria and uncomplicated scarlet fever are not air-borne under such conditions. Opinions are divided as to measles. The trend of English opinion is that smallpox and chicken-pox are occasionally air-borne and perhaps also rubella, and whooping-cough. This is probably not the usual mode of infection."

Another prominent feature of this session was a symposium on the Control of Disinfection and the Influence of Infected Rooms and Fomites in the Dissemination of Various Infectious Diseases, in which Dr. Borne, Médecin des Épidémies du Département de la Seine and Dr. Ott, Inspecteur Départmental du Bureau d'Hygiene de la Seine-Inferieure, presented papers and Dr. Alvah Doty of New York sent a communication which was read by the secretary, in which it was stated that money and rags were not so often responsible for the dissemination of contagious diseases as was generally supposed. Contagion might rarely be conveyed by this means, but as a rule, persons and not things were responsible. Transference of disease is usually effected by means of discharges, and if these are properly destroyed and general cleanliness observed we have done all that is required from the standpoint of medical sanitation. He showed the uselessness of many of the methods of disinfection. It has been found in experimenting with the feces of typhoid patients that when these were soaked in dilute carbolic for twenty hours the disinfection

had not penetrated one-eighth of an inch. He concluded that our best disinfectant is heat.

Dr. M. Prausnitz, Hygienisches Institut der Universität Graz, Austria, gave a demonstration of a simple and certain method devised by M. Kaiser for disinfecting stools at the bedside. This is done by estimating approximately the amount of water necessary to cover the stools without actually pouring it on. One-quarter of this volume of quicklime is then added to the stools and then the amount of water needed to cover the stool is added. He claimed that the disinfection took place because of the heat generated, but some of those present thought that quicklime being an exceedingly powerful agent might have something to do with the result.

Dr Liberati, one of the officials of the Cuban Health Department, described the work of that body. He attributed their great success in combating tropical diseases to the organization, harmony, and coordination that existed in the health department. In the struggle with yellow fever they had expended a vast amount of money and labor, but the knowledge gained had been very useful in combating other diseases. Much of their success was due to the thorough system of inspection and the isolation of suspects. He described the method used in fighting the plague in June, 1912. When the commissioner sent to Porto Rico to investigate called attention to the danger from rats and fleas and it was noticed that an unusually large number of rats died about the warehouses, a campaign of extermination was begun and he believed that their energetic action in this respect prevented an epidemic. After comparing the danger from the cutaneous form of plague and the pneumonic form, he said that accurate clinical diagnosis was not possible in many cases and it was important that a bacteriological diagnosis should be made as soon as possible. On this account the microscopical examination of the smear was the method to be preferred, but where this was not satisfactory they had to resort to the inoculation of guinea pigs. In the latter method it required from five to seven days to make the diagnosis. He spoke of the difficulties met with in dealing with rats. It seemed important to subject all rats killed to bacteriological examination, but if this examination was not made very shortly after the death of the rat the result was negative. During the campaign against the rats they had endeavored to have all rats delivered for examinations and deliveries were made three times a day.

In the afternoon Prof. Henry Albert of the University of Iowa read a paper in this section on the "Control of Rabies," which called attention to the need of immediate treatment for this disease, the need of more rigid regulations and united action on the part of states and provinces. "The control of rabies should mean the extirpation of the disease." He made a plea for a united effort on the part of the governments of the United States, Canada, Mexico, and Central America for the complete eradication of the disease from the American Continent and of similar action in other localities.

Another paper of interest was that of Dr. Julius Rosenstein of San Francisco, who described the municipal clinic for venereal diseases in his city and its administration, the method of medical examinations of prostitutes, and the methods of dealing with them. The results from the statistics of 20,000 complete examinations with data on 2,500 individuals showed that good results were secured in consequence of control of morbidity. There were certain features connected with the work in San Francisco which made it more effective than that done in European cities.

Dr. Homer Folks of New York addressed the Section of Child Hygiene on "Foundlings." These he divided into two classes: real foundlings and so-called foundlings, or those taken to institutions by parents who for various reasons desired to be relieved of the responsibility of caring for their offspring. Statistics seemed to indicate that for one real foundling there are 20 so called. There were 2,500 in New York and of these 2,000 had been received in one institution. The real foundlings came into the world mostly healthy and were put under care while still in good condition and their mortality ranked favorably with the mortality of other infants in the same locality, while statistics seemed to show that one-half of all so-called foundlings die. That we should have so many so-called foundlings was wholly unnecessary, indefensible, and shockingly wicked. We should not receive these so-called foundlings into our care at all. Where there were the largest number of so-called foundlings there the largest number of real foundlings were also found and there were no evidences in a study of statistics to indicate that a refusal to accept so-called foundlings had any effect on the number of cases of infanticide or abortion. Abandonment of a child in a railroad station or public place is not essentially different from abandoning it at the doors of an institution. The better method would be to accept no infant unless authorities chosen for the purpose show that the mother is unfit to care for her child.

Dr. Samuel McC. Hamill of Philadelphia described the development of an exhibit which showed the causes of high infant death rate and the means of reducing it. The exhibit first showed the effect of prenatal influences and taught the proper care of the expectant mother and then the various details in the care of the new-born babe. The exhibit was practical and compact and it was possible to get a very comprehensive idea of it in a couple of hours.

In the discussion of these papers special emphasis was laid on the fact that mortality statistics in institutions for infants were not to be relied upon, that a certain number of abandoned infants came into institutions in such an apparently hopeless condition that nothing was done for them, that frequently there were not enough nurses to properly care for the large number of babies. Dr. Jacobi held that the fact that the infants in institutions were mostly artificially fed ran the mortality rates up, as it was well known that only 7 per cent. of breast-fed infants died, while from 19 to 20 per cent. on good artificial feeding died. The question of providing help which would enable mothers to care for their infants was discussed. The desirability of such help in many instances is unquestioned, but the advisability of enacting legislation for this purpose is open to debate. The importance of home life and home care for the child should, however, be emphasized.

Dr. Totten of Syracuse gave statistics in regard to 165 new-born babies in Syracuse, N. Y., during July and August of this year under the "follow up" system. Ninety-seven per cent. of these babies were breast-fed and there had been no mortality.

(To be continued.)

OUR LONDON LETTER.

(From Our Regular Correspondent.)

ASSOCIATION FOR ADVANCEMENT OF SCIENCE, PRESIDENT'S ADDRESS ON ORIGIN OF LIFE.

LONDON, Sept. 6, 1912.

THE British Association for the Advancement of Science, or as we colloquially call it "for short" simply the British Association, opened its annual meeting on Wednesday at Dundee. The President this year is Professor Schäfer and he delivered his address the same evening in the Kinnaird Hall, the total capacity of which is only 1,800, and many members were disappointed at finding it crowded—for more than 2,000 had arrived in the gray stone city. The Lord Provost invited the foreign members, who were more than usually numerous, to meet some of his distinguished fellow citizens in the afternoon, and this innovation in the proceedings was generally approved. He wore his robe of office as did the other officials and the door of the council chamber was guarded by halberdiers as in the olden time. An attempt is being made this year to induce members to appear in their academic gowns, and as the association appeals to the popular imagination as well as to the purely scientific, this may not be unnatural.

Sir Wm. Ramsay, the outgoing President, was unable to be present, as he is president of the International Congress of Applied Chemistry now meeting in New York, and it was his duty to induct his successor. He sent an appropriate message and Sir Archibald Geikie discharged his duty and formally introduced the new President, who then gave his presidential address on the "Origin of Life." The vote of thanks proposed by the Lord Provost having been duly honored and the President having returned thanks the Lord Provost once more rose and expressed the pleasure he had in handing to the President a cheque for £10,000 on behalf of Mr. J. K. Cairds, LL.D., of St. Andrew's, a Dundee manufacturer and a vice-president of the Association, whose munificence to the poor and to medical institutions for their benefit is said to have exceeded in the last 15 years £100,000. In acknowledging the gift the President said it was unique in the history of the Association and would be strictly devoted to advancing science.

To return—the subject of the address is a well-worn one and no new light was shed upon it, though some modern points were re-stated, felicitously enough and many pens are set to work upon it.

Prof. Schäfer attempted no definition of life, a word interesting him as one of those abstract terms which had no direct antithesis. But he declared the problems of life were only problems of matter, apart from which life could not be conceived of in a scientific sense. To enforce this view he referred to spontaneous movements in physical and chemical reactions observed in changes in the surface tension of fluids (oil drops, mercury globules). He held movements ameboid and other as developed by evolution through agencies resembling these. To those who object that such resemblances are superficial and other characteristics are joined with movement (assimilation, dissimilation, etc.), he said such processes also occurred where no one would associate them with life. Division of a cell-nucleus by karyokinesis preliminary to multiplication by division could be imitated with inorganic salt solutions suspending carbon particles. Vitalism as a working hypothesis had been undermined and most of the structure toppled over. "Vital force" was an expression of ignorance. To substitute "neo-vitalism" and "biotic energy" was no advance. "New presbyter, old presbyter writ large." Chemical composition of living matter was not so complex as long supposed. The nucleus of a cell, the quintessence of its life was not very complex and we might therefore hope some day to see its material made synthetically. A few elements combine in a colloidal compound representing the chemical basis of life. When the chemist can build up his colloid he had no doubt it would exhibit phenomena we associate with life. Perhaps the production of living material was not so remote as commonly supposed. Prof. Schäfer spoke of his friend Dr. Charlton Bastian as the only eminent scientist who held to the old creed and he doubted if many were convinced by his numerous experiments. Setting aside as devoid of scientific foundation the idea of immediate supernatural intervention, Prof. Schäfer argued that we must believe living matter owed its origin to causes similar in character to those instrumental in producing all other matter in the universe—*i.e.* evolution. Many biologists, he said, shelved this conclusion by calling in some former condition of the earth when opportunity was favorable to the passing of inanimate into animate material—such opportunities never recurring. But if this happened once it might again and we could not be sure it was not happening now. Prof. Schäfer spoke of parental qualities being transmitted by elements and heredity as possible of solution by chemistry. But cells might cease to be useful and organs, too. Then Nature wanted to get rid of them. He instanced the appendix and Nature's method being too slow surgery was necessary. Here Prof. Schäfer will find plenty of contradiction to his declaration of the uselessness of the appendix.

The President pointed out that plants react to external impressions, but these are only conveyed from cell to cell and having no nervous system plants can never acquire the least glimmer of intelligence, but animals from a slight modification of certain cells proceeded by evolution to a nervous system, culminating by this same evolution in the human intellect. But if the slight change in a few cells did this for animals, and Prof. Schäfer would not be surprised to see them follow on to intelligence, this might even occur in plants, or what becomes of his argument that what happened once may happen again and may even be happening now?

Passing to the end of life Prof. Schäfer said the cells must grow old and eventually cease to function, and when this happens to those essential to life death must result. Here then his vaunted evolution fails—ends seemingly in that death which he has just said "must always remain the universal law." So this word evolution signifies only a process or a series of changes but has no such innate originating power as some biologists have attributed to it; for it only continues for a time, growing old and dying. And that is the explanation of life and all things which these biologists propose as more reasonable than the doctrine of a creative intelligence!

The sectional proceedings began yesterday, most of their presidents giving addresses.

Massage in Wasting Diseases of Children.—J. M. MacPhail states that massage has received a great deal of attention in nervous and in surgical conditions, and that in wasting diseases of children it may effect an improvement when the nursing and natural exercise have been defective.—*British Journal of Children's Diseases.*

Progress of Medical Science.

Boston Medical and Surgical Journal.

September 12, 1912.

1. The Operative Treatment of Gastroenteroptosis. J. Ransohoff.
2. Medical Aspect of Intestinal Adhesion and Ptosis. J. M. Jackson.
3. Dangers Incurred as a Result of the Non-Recognition of Acute Aural Infections with Statistical Data. F. E. Kittredge.
4. Inversion of the Uterus. H. F. Day.

1. **Operative Treatment of Gastroenteroptosis.**—J. M. Ransohoff states that every case of visceral sagging should be studied individually, and should not be treated in a routine way, whether conservatively or by operation. If after the removal of the normal or nearly normal appendix the patient continues to suffer, he should not be lightly classed among the hopeless neurotics. It is probable that the surgeon has overlooked some visceral displacements or adhesions which are the cause of the suffering. A small incision in abdominal work of the kind under consideration has signal disadvantages. The conclusion of the internists based on laboratory findings as, for example, after ingestion of a test meal, cannot be made the basis of the functional capacity of the stomach under everyday conditions. In many seemingly hopeless cases of gastroenteroptosis with marked neurasthenic symptoms operation promises relief. If this is the result of suggestion it is none the less valuable if the relief is permanent. While, of course, internal treatment, abdominal supports, and postural treatment should be tried, operative interference should not be unnecessarily delayed lest the habitus nervosus become too deep-rooted to be eradicated. No gastroptotic patient should be operated on unless some actual functional disturbance can be demonstrated. To relieve this must be the aim of the operation. Given a visceroptosis in which one can demonstrate distinct functional incompetence or deviations the existence of nervous phenomena does not militate against operation but may be the chief reason for performing it.

2. **Medical Aspect of Intestinal Adhesion and Ptoses.**—J. M. Jackson lays particular stress upon colitis as an important symptom of adhesions. He does not believe that there is any such thing as hysterical colitis. In typical cases of stasis one always finds a definite group of symptoms. Following a period of constipation with more or less attendant indigestion, anorexia, hyperacidity, bloating and feeling of pressure, all of which grow steadily more severe, the patient begins to have abdominal pain which may be described as dull and dragging or colicky, or merely a constant sense of discomfort, relieved only by lying down. It is usually worse when standing or walking or riding in a train or automobile. The colicky attacks may come on without apparent reason, and may or may not be accompanied by nausea and occasionally by vomiting, even of the most marked propulsive type. Distention is usually present, and may come on with great suddenness and severity. These attacks are relieved by morphine and belladonna, high enemata and cathartics, and are followed immediately by a copious discharge of mucus—even as much as a quart at one dejection—and in smaller quantities usually for several days. Following this "clearing out" the patient is apparently well for a time varying from days to weeks, when the cycle begins over again. The ptoses of the cecum, transverse colon and sigmoid are all characterized by similar symptoms due to their weight and abnormal positions and to partial obstruction. In prolapse of the cecum a kink is sometimes formed in the ileum near the ileocecal valve. As this dams back the contents of the ileum fermentation takes place there and the entire small intestine may become distended with gas, producing discomfort, distress, or severe pain. In the treatment of this condition licorice powder is of the greatest service, especially in conjunction with a diet largely of vegetables, as is also the use of agar-agar. When colitis is present small doses of salol and castor oil are of the greatest service, and when toxemia exists great help is afforded by the exhibition of calomel once a week. High irrigations; oil, either by mouth or by enema; a coarse diet (vegetables, fruit, bran biscuits, coarse cereals); exercises, and abdominal massage may also be employed to advantage. In the acute attacks, however, simulating intestinal obstruction nothing gives relief except the administration of efficient doses of morphine and belladonna.

3. **Acute Aural Infections.**—F. E. Kittredge notes that the one safe course to pursue to avoid deeply seated aural infections, together with their intracranial complications, is the practice of preventive surgery. A free incision of the drum membrane made as quickly as possible following a diagnosis of probable presence of fluid in the middle ear cavity will in the great majority of cases prevent further difficulty. Spontaneous rupture of the tympanic membrane does not necessarily mean free drainage, and by no means contraindicates further interference by the physician. If pain continues, even to a slight degree, or if there is any rise of temperature it would mean impeded drainage, and there should be no hesitation in freely incising the drum. This procedure is not alone for the purpose of preventing a more dangerous condition, but it hastens convalescence and may prevent a chronic running ear with its attendant discomforts. A clean linear incision heals promptly with no interference of hearing, while a spontaneous rupture through a swollen and ruptured membrane heals by cicatrization if at all and interferes with the normal function of the ear. Dangerously infected mastoids may be present without presenting the usual symptoms as formerly taught. Swelling posterior to the ear is present only late in the course of the disease; marked tenderness usually subsides with acute inflammatory symptoms, and the temperature chart is similar to that of appendicitis, not always a safe guide. The absence of free pus in the mastoid cells does not necessarily mean a case operated upon unwisely, for there may be present in the mastoid antrum and scattered throughout the cellular structure highly infective granulations. This condition is far more dangerous to life in an individual in whom the bone is dense and sclerosed with but very few small cells, than would be the case were a large quantity of free pus present in large pneumatic cells, the outer wall of the mastoid structure being thin. In the latter case the pus might easily rupture through the bony wall externally. In the former condition infection could more readily find its exit internally.

4. **Inversion of the Uterus.**—H. F. Day concludes that inversion of uterus is rare and will be rarer with the decrease of untrained accoucheurs. Acute inversion should be reinverted as soon as possible. Chronic inversion demands operation as soon as the patient's condition warrants it. Thomas' operation is advised if the patient is seen within ten days of occurrence and is not exsanguinated. Spinelli's operation is recommended for later cases of this disease.

New York Medical Journal.

September 14, 1912.

1. The Inheritance of Acquired Characters. J. Wright.
2. Polyneuritis with Radicular and Spinal Cord Involvement. W. M. Leszynsky.
3. Pathological Changes of the Pharyngeal Mucosa an Early Symptom Pathognomonic of Poliomyelitis. M. Neustaedter.
4. The Crotalin Treatment of Epilepsy. R. H. Spangler.
5. Drainage of Acute Infectious Lesions of the Abdominal Cavity. J. W. Kennedy.
6. The Community and Health. M. S. Macy.
7. The Medical Corps and Medical Reserve Corps of the United States Army. A. W. Williams.
8. Some Phenomena of the Modern Practice of Medicine. G. W. McGregor.
9. Rheumatic Fever. A. M. Nodine.

2. **Polyneuritis with Radicular and Spinal Cord Involvement.**—W. M. Leszynsky reports an unusual case

of this condition with complete recovery. There were a slowly progressive development of atrophy and paralysis beginning in the ulnar distribution of the left hand until clawhand resulted; some atrophy in both shoulder girdles; a lesser involvement of the ulnar group in the right hand; vasomotor paresis in both hands; absence of subjective sensory symptoms, and no pupillary disturbance. Several months after the onset the lower extremities became implicated, the paralysis being limited to the peroneal group on both sides. There became evident an area of sensory disturbance over the trunk on the left side affecting all forms of sensibility, and an area of incomplete thermoanesthesia over the inner aspect of the left arm. At the end of a year there was a rapid exacerbation of the symptoms in the lower extremities, at which time there was complete bilateral foot drop, hypotonia, ataxia, absence of all reflexes, and slow urination. This continued for a few months, when rapid improvement began and gradually terminated in complete recovery. It is noted that the left side was principally affected, the sensory symptoms being confined to that side. The duration of the disease was one year and eight months.

3. **Early Pharyngeal Symptoms of Poliomyelitis.**—M. Neustaedter calls attention to the nasopharyngeal symptoms which he believes are invariably present in this disease. Frequently one is told that the patient begins to sneeze, or makes attempts to sneeze and the mother or nurse suggests that the patient is developing measles. Upon inspection, however, there is not a red, sore, and hyperemic throat, but rather an anemic, glistening, edematous condition of the pharyngeal mucosa, with a serous frothy transudate, quite analogous to the edematous swelling of the cord. This condition the author has found to persist in the majority of the cases, even several weeks after the onset of the paralysis. This sign, in his opinion, is pathognomonic of the disease.

4. **The Crotalin Treatment of Epilepsy.**—R. H. Spangler believes that the "venom treatment" is indicated in many of the essential cases of epilepsy. Not only are the virulence and number of the epileptic fits favorably influenced by the crotalin treatment, but the excitability of the nervous system is modified and the general health, mental faculties, and metabolism of the patients are considerably improved. The quality of the blood, and possibly its chemical composition seem to be affected by the injection of the venom. As to the exact effect it has on the coagulability of the blood, further observation is necessary. There is said to be no danger in the use of crotalin as long as the necessary aseptic precautions are taken in its administration, and the treatment is carried out with careful observation of its effect on the patient.

5. **Abdominal Drainage.**—J. W. Kennedy ventures the statement that he is entirely and enthusiastically opposed to the modern methods of treating septic conditions of the abdominal viscera. First, he attacks the Fowler position. He believes he has demonstrated that there is very little absorption of toxins in the already inflamed peritoneum and that the difference of absorption between the upper and lower abdomen must be very small if any. The worst cases, with extensive peritonitis and distention, are put in the Trendelenburg position, so as to give the nerve centers more blood and thus to stimulate the shocked and badly infected patient. The author regards adhesions and inflammatory membranes as a wolf in sheep's clothing, as they quickly become complications which are of more pathological import than the existing peritonitis. These inflammatory walls have little physiological integrity and quickly cause a bowel obstruction or the formation of a distal abscess. The gloved hand is also held responsible for much of the incomplete work of the present hour. The author believes that the greatest calamity which has happened to the surgery of intra-abdominal pus and of those extensively infected areas found in diffuse and general peritonitis has been the abandonment of gauze as a drain and the substitution of tubal drainage. The frailty of the modern toilet has made it necessary to abandon the gauze cofferdam for tubal drainage, as it is impossible to insert a cofferdam until one has removed the pathological lesion and broken all adhesions.

9. **Rheumatism and Oral Sepsis.**—A. M. Nodine reaches the following conclusions: (1) Rheumatic fever is an acute or attenuated general infection accompanied by toxemia, autointoxication, chorea, high blood pressure, anemia, carditis, and arthritis. (2) The microorganism, whose toxin is most concerned in the production of the symptoms of rheumatism, is the *Diplococcus rheumaticus* of the streptococcus family. (3) The portal of entry for the infection is the oral cavity. (4) Oral sepsis plays a direct part in the production of rheumatic fever by supplying the necessary conditions for the absorption from the mouth of the pathogenic agents. (5) The correction of the conditions contributing to oral sepsis exert a positive and favorable influence in preventing and curing rheumatic fever.

Journal of the American Medical Association.

September 14, 1912.

1. The Current Problems of Pharmacology and Therapeutics. T. Sollmann.
2. Present Status of the Laws Relating to Patents and Trade-Marks. M. J. Wilbert.
3. The Relation of the Patent and Trade-Mark Laws to Materia Medica Nomenclature. F. E. Stewart.
4. The Influence of Pathological Conditions on the action of Drugs. G. B. Wallace.
5. Candy Medication. B. Fantus.
6. Practical Application of the Roentgen Ray to the Management of Malignant Growths. C. E. Skinner.
7. Comparative Studies in Cancer and Normal Tissue Ferments. W. W. Hamburger.
8. Acetonuria: Its Relation to Postoperative Vomiting in 700 Cases of Ether Anesthesia. S. A. Chalfant.
9. Treatment of Tubal Pregnancy with Special Reference to Immediate Operation for Rupture, Based on a Study of 200 Operations. L. J. Ladinski.
10. Drainage of the Kidney by Incision for Bacillus Coli Communis Infection in Pregnant and Parturient Patients, with Report of Cases. E. P. Davis.
11. The Occurrence of General Paralysis in Women. G. W. T. Mills.
12. The Diagnosis of Diverticulitis of the Large Bowel. A Clinical Review of Twenty-Seven Cases. H. Z. Giffin.
13. The Treatment of Pulmonary Tuberculosis by Compression of the Lung. M. E. Lapham.
14. Bacteriology of Epidemic Sore Throat. J. Arthur Leutscher.
15. Rheumatism. E. Mungus.
16. Transplantability of Malignant Tumors to the Embryos of a Foreign Species. J. B. Murphy.
17. The Water Purification Works of the Baltimore County Water and Electric Company. S. T. Powell.
18. A New Regulating Dropper for Ether and Chloroform, Usable on Any Container. F. W. Pinneo.
19. Localized Gangrene Following the Use of Quinine and Urea Hydrochloride. H. H. Rightor.

5. **Candy Medication.**—B. Fantus has sought to devise a perfect candy form for as many different important medicaments as possible, and has succeeded in about twenty drugs which are otherwise rather repulsive to the patient. The author finds the tablet the best and most convenient form of administration. He uses cocao butter and powdered sugar thoroughly triturated and compressed with the active ingredients in the tablet machine. The flavor should always be sprayed on the finished tablet with an atomizer. The most tasteless form of quinine is aristochin and the only sufficiently tasteless salicylate is salophen. Sabromin and sajodin are easily put up in the form of palatable tablets especially with the use of cocao. One objection against candy tablets is that children might poison themselves by eating too many at once. This objection can be easily overcome by prescribing only as many as can be taken at one time without danger.

6. **The X-Ray Treatment of Cancer.**—C. E. Skinner remarks that the *x*-ray is capable of exercising a powerfully curative influence over many cases of malignant disease and that its routine addition to extirpative measures will increase the number of curable cancer cases. It is impossible to tell beforehand which cases need röntgeniza-

tion and which do not, or which respond happily and which do not. There is reason to believe that many postoperative recurrences are more resistant to the *x*-ray than the original growth. It is easier for the *x*-ray to influence microscopic foci of malignancy than those of larger size; hence röntgenization should be begun as soon after extirpation as is consistent with the safety of the tissues involved in the operation wound and before recurrence has manifested itself.

7. **Cancer and Normal Tissue Ferments.**—By W. W. Hamburger. (See MEDICAL RECORD, Vol. 81, page 1165.)

8. **Acetonuria and Postoperative Vomiting.**—S. A. Chalfant concludes that vomiting occurs in a large percentage of cases after anesthesia. The liability to vomiting is increased when acetone is found in the urine. Protracted vomiting is best treated by sodium bicarbonate by the bowel and by lavage. The patients need careful watching on account of the liability to acid intoxication. Acetonuria is due to faulty metabolism and is increased by carbohydrate starvation. Acetonuria has no relation to the length of anesthesia. The duration of anesthesia has only a slight influence on vomiting.

9. **Treatment of Tubal Pregnancy.**—L. J. Ladinski pleads for a general recognition by abdominal surgeons of the dictum that hemorrhage into the peritoneal cavity must be sought for and checked as soon as diagnosed; that opening the abdomen of a patient profoundly shocked and anemic for abortion or rupture of a tubal pregnancy does not *per se* offer any graver risk than opening the abdomen for any other intraabdominal condition; and, furthermore, that delay in operating, no matter how slight, means increased risk, greater danger, and probably death to the patient. This plea is based on the study of 200 operative cases. The technique was practically identical in all. The abdominal incision was universally employed, the entire hand being introduced into the abdominal cavity and hemorrhage being checked by firm compression of the outer border of the broad ligament. In cases of extreme collapse, intravenous saline infusion was given simultaneously with the opening of the abdomen. In the 200 operations for tubal pregnancy there were three deaths, one following immediate operation in an unruptured tubal pregnancy, one following the third operation for ruptured tubal pregnancy, and one following the third operation for terminated ruptured tubal pregnancy with infection. In all of the immediate operations for ruptured tubal pregnancy there was no death. The author hopes to see the indication for immediate operation for ruptured tubal pregnancy accepted as the rule, as the fate of the patient depends on the promptness of the operation. He regards the operation as so free from risk that he feels justified in doing conservative surgery on the affected tube, when possible, although he recognizes the fact that the patient is thus subjected to a possible recurrence.

10. **Nephrotomy in Colon Bacillus Infection** of Kidney.—E. P. Davis discusses the treatment of colon bacillus infection of the kidney in pregnant women. A mixed infection with staphylococci and streptococci may co-exist. The symptoms are indefinite pain in the right abdominal and right dorsal region, much resembling that of subacute appendicitis. The pure culture of the colon bacillus can usually be obtained from the urine and blood examination shows a high leucocytosis. In mild cases the disease tends to recover on a milk diet and an abundance of pure water. Rest and free action of the bowels are essential. When infection becomes overwhelming, and is mixed, the kidney may be riddled with abscesses and pyemia and septicemia may follow. The medical treatment depends on a correct diagnosis between this infection and pyelonephritis, which diagnosis may be difficult or impossible. Fortunately the treatment for both conditions, if mild, is the same. If the condition does not yield to medical measures kidney drainage by nephrotomy is advised as safest for both mother and child.

12. **Diverticulitis of the Large Bowel.**—B. H. Z. Giffin. (See MEDICAL RECORD, Vol. 81, page 1165.)

13. **Treatment of Pulmonary Tuberculosis by Compression of the Lung.**—By M. E. Lapham. (See MEDICAL RECORD, Vol. 81, page 1166.)

15. **Rheumatism.**—E. Mingus advances the theory that in many cases of rheumatic fever the initial seat of infection is in the intestinal tract, from which the absorption of bacteria and their toxins occurs; on entering the circulation these cause peripheral symptoms in susceptible tissues. Chronic or recurring attacks are or may be due to the persistence of the bacteria of rheumatic fever in the intestinal tract in an attenuated condition and are aroused to activity by dietetic and hygienic errors of the patient which cause a reduction in metabolic activity and natural resistance.

16. **Transplantability of Malignant Tumors.**—J. B. Murphy describes his investigations which show that mammalian tumor tissue can live and grow actively in the chick embryo, although in the adult chicken it quickly dies and is absorbed. By transfer from one embryo to another the mammalian tissue can be kept growing continuously in the avian host for as long as forty-six days, and probably indefinitely. This proves that the mammalian cells are able to utilize the food supplied by the avian embryo. Whether the phenomenon is dependent solely on this factor, or whether the absence of a defensive mechanism in the embryo plays the more important part is a subject which is being studied and on which a report will be made later.

The Lancet.

September 7, 1912.

1. On the Nature, Origin, and Maintenance of Life. E. A. Schafer.
2. On the Value of a Quantitative Albumin Estimation of the Cerebrospinal Fluid (with Special Reference to the Syndrome of Massive Coagulation and Xanthochromia). J. G. Greenfield.
3. The Quantitative Cutaneous Tuberlin Test (Quanti-Pirquet (q P) for Short). E. C. Morland.
4. The Treatment of Flatfoot. P. B. Roth.
5. Coarctation of the Aorta in an Adult, with Death Due to the Rupture of an Aneurysm in the Neck. F. Parkes Weber and F. W. Price.
6. A Case of Large Caseous Tubercle of the Myocardium. W. J. McKeand.
7. A Case of Very Exuberant Growth of Molluscum Contagiosum. W. Calwell.

1. **The Origin of Life.**—By E. A. Schäfer. (See page 582.)

2. **The Albumin Estimation of the Spinal Fluid.**—J. G. Greenfield calls attention to a condition of the spinal fluid described by the French writers as the "syndrome of massive coagulation and of xanthochromia without cellular elements." This condition was first described in 1909 by Blanchetière and Lejonne in a case of tumor of the spinal dura at the level of the seventh to ninth dorsal segments. Massive coagulation and xanthochromia of the cerebrospinal fluid had been noted by Sicard and Descomps in 1908 as occurring in syphilitic meningitis, associated with a great increase in the lymphatic content. In one of the author's cases the tumor or compression was of a limited nature, but in two other cases the condition of the fluid might have been explained by transudation from a vascular tumor infiltrating the meninges widely. The occurrence of a similar fluid in cases of cerebral tumor, as reported by Quincke and Vincent, indicates that the damming up of the free circulation of the fluid has much to do with the production of an albuminous yellow fluid in the portions of the subarachnoid space shut off from the ventricles, as it is very possible that in these cases the foramen magnum was plugged by the downward pressure on the brain stem forming the so-called "pressure cone." Whether this condition is compatible with life for a period long enough to allow the spinal fluid to undergo such changes is, of course, doubtful, but this hypothesis harmonizes with the other

causes—spinal tumor, syphilitic leptomeningitis, etc. The yellow coloration seemed to be similar to what was found in cases of cortical hemorrhage, but a full chemical examination was not carried out in any of the cases. French writers have examined the fluid in many cases of fracture of the skull, cortical hemorrhage, etc., where this yellow coloration was present. Bard and Sicard consider it to be due to a special decomposition of the hemoglobin of the blood. Gilbert and Hersher, Fuffier and Milian, on the other hand, consider it to be due to a pigment, serochrome, normally present to greater or less extent in the blood.

3. **The Quantitative Cutaneous Tuberculin Test.**—E. C. Morland employs for this test the following dilutions of old tuberculin: 64, 16, 4, and 1 per cent. The most convenient scarifier is the platinum spade used by von Pirquet. The skin of the forearm over the brachioradialis muscle is rubbed with alcohol; the scarifier is held vertically between the thumb and forefinger, and with it four circular holes are drilled in the skin about an inch apart by a rapid twisting movement of the instrument on its long axis. The base of the pits should show vivid pink, but should not actually bleed. The dilutions of tuberculin are made with the usual diluent of ½ per cent. phenol in normal saline. A drop is now applied to each scarification in turn, the weakest dilution distally (nearest the hand), so that a stronger solution shall not be carried by the lymphatics to a proximal spot. The excess of fluid is sopped up with tiny pieces of sterile wool and the moist spots are left to dry for five minutes or so. The sleeve is then gently replaced and the patient is instructed not to wash the forearm until the next day, to avoid rubbing or irritating it, and to present himself for observation after 24 and 48 hours. The diameter of the resulting papules is measured in millimeters after 24 and 48 hours and the measurements are charted. Only the papule is measured, not the surrounding zone (if present) of hyperemia, and the diameter of the scarification is subtracted as irrelevant. The figures are charted as shown in a table and the resulting values of papule-size (5½) and papule-difference (3¼) are looked for in the table, where they are found to correspond to a sensitiveness value of 130 expressed thus: q P = 130. The sensitiveness value is really the inverse of the lowest strength of tuberculin which just gives rise to a reaction. Thus, if 5 per cent. be this strength, 100 ÷ 5 or 20 is the sensitiveness value; or if 1 per cent. tuberculin just gives a reaction, q P = 100. The application of the determination of q P in practice is: (1) in the deciding of the question whether an existent tuberculosis is in such a condition as to require treatment—what may be called the clinical diagnosis of tuberculosis; (2) as a guide to the progress of a case—if favorable, q P soon falls below the crucial limit; (3) in concluding or excluding the presence of tuberculosis in disease or ill-health where the diagnosis is doubtful—*e.g.* in bronchial asthma, bronchiectasis, enlarged glands, etc.; (4) in determining the initial dose of tuberculin for a therapeutic course (where q P is high and the sensitiveness accordingly great, a small dose should be chosen to begin with); and (5) in standardizing any particular preparation of tuberculin and comparing two or more preparations. In drawing a conclusion from the value of q P certain points should be borne in mind: (1) the Pirquet reaction tends to disappear in advanced cases of tuberculosis and in miliary tuberculosis of rapid course; (2) it is constantly absent during the first ten days of measles and in some other transient acute conditions; (3) q P tends to remain high long into convalescence from bone and glandular tuberculosis, and (4) in the negative phase of a tuberculin inoculation q P may be very high, but it is remarkable how rapidly the large papules disappear as the positive phase sets in.

4. **The Treatment of Flatfoot.**—P. B. Roth describes a treatment for this condition in which the use of arch springs or sole plates is dispensed with. The treatment consists of: Attention to footwear, attention to position in standing and walking, and regular daily exercises. (1) *Attention to footwear:* Whether boots or shoes are worn, whether they button or lace, they must be the shape of the feet. If this primary essential is not secured the whole treatment may as well be abandoned. If the degree of flatfoot be anything more than the merest trace, mechanical means are utilized to throw the weight of the body, distributed down the leg, slightly outside the center of the ankle joint. This is effected by thickening the sole and heel of each boot along its inner side by one-fourth, one-third, or one-half inch, the amount depending upon the severity of the case; the worse the case the greater the thickening. The additional leather is in the form of a wedge, with its base to the inside and its apex to the outside of the foot, so that the extra thickness on the inside fades off to nothing on the outside. Not only does it fade away outward toward the outside, but also forward toward the tip of the shoe, from a point situated about an inch behind the tip. (2) *Attention to position in standing and walking.—Standing:* The patient must always stand on both feet, with the toes slightly turned in and the heels slightly turned out. He must never stand with the toes turned out, or on one foot to rest the other. Every now and then he must raise the heels just clear of the ground, that is, stand on the toes sufficiently to bring all the muscles of the foot into action. Whenever the feet begin to ache he should do this. In addition, he should stand with the feet very slightly turned over on their outer border. *Walking:* He must walk with the feet pointing straight forwards—never with the feet turned out. (3) *Regular daily exercises.*—The exercises, to be done the first thing every morning, preferably with the shoes off, are two in number: (*a*) Standing, alternately raising heels and toes. To steady the body, both hands touch the mantelpiece or wall. The heels are slowly raised from the ground and slowly lowered, then the toes are slowy raised and slowly lowered, the exercise thus consisting of four distinct movements. The feet are kept slightly turned in and slightly turned over on their outer border all the time. The exercise is repeated from 50 to 100 times. (*b*) Sitting on one chair, with the foot projecting over the edge of another, the calf of the leg resting on the seat. Keeping the knee still, the foot is slowly circumducted to its full extent in all directions, down, in, up, out, fifty times; then down, out, up, in, fifty times. By means of this treatment it is possible to cure flatfoot without the use of arch supports.

Erythema Nodosum, Associated with Mammary Tuberculosis.—F. Parkes Weber reports the case of a rather delicately built woman, aged forty-seven, who had previously had no serious illnesses, and had apparently enjoyed good health. She was admitted to the hospital April 6, 1912, suffering from a chronic swelling in the right breast of at least two months' duration, which had not caused her much pain. This was excised on April 9, and found to be tuberculous, the microscopical sections containing many characteristic giant cells of the tuberculous type. On admission she was likewise suffering from florid erythema nodosum affecting both legs up to just above the knees, and there was a little pyrexia. The erythema nodosum, which had commenced about March 30, almost completely disappeared by the end of April. The patient had not been taking any drug, such as potassium iodide, which might be supposed to be connected with the onset of the erythema nodosum. There was no history of syphilis. She had had twelve children, nine of whom were still living, and no miscarriages. A good deal of attention had been given, especially on the Continent, to the occasional association of erythema nodosum with tuberculosis, a connection which had been recognized and described by Landouzy in 1907.—*Proceedings of the Royal Society of Medicine.*

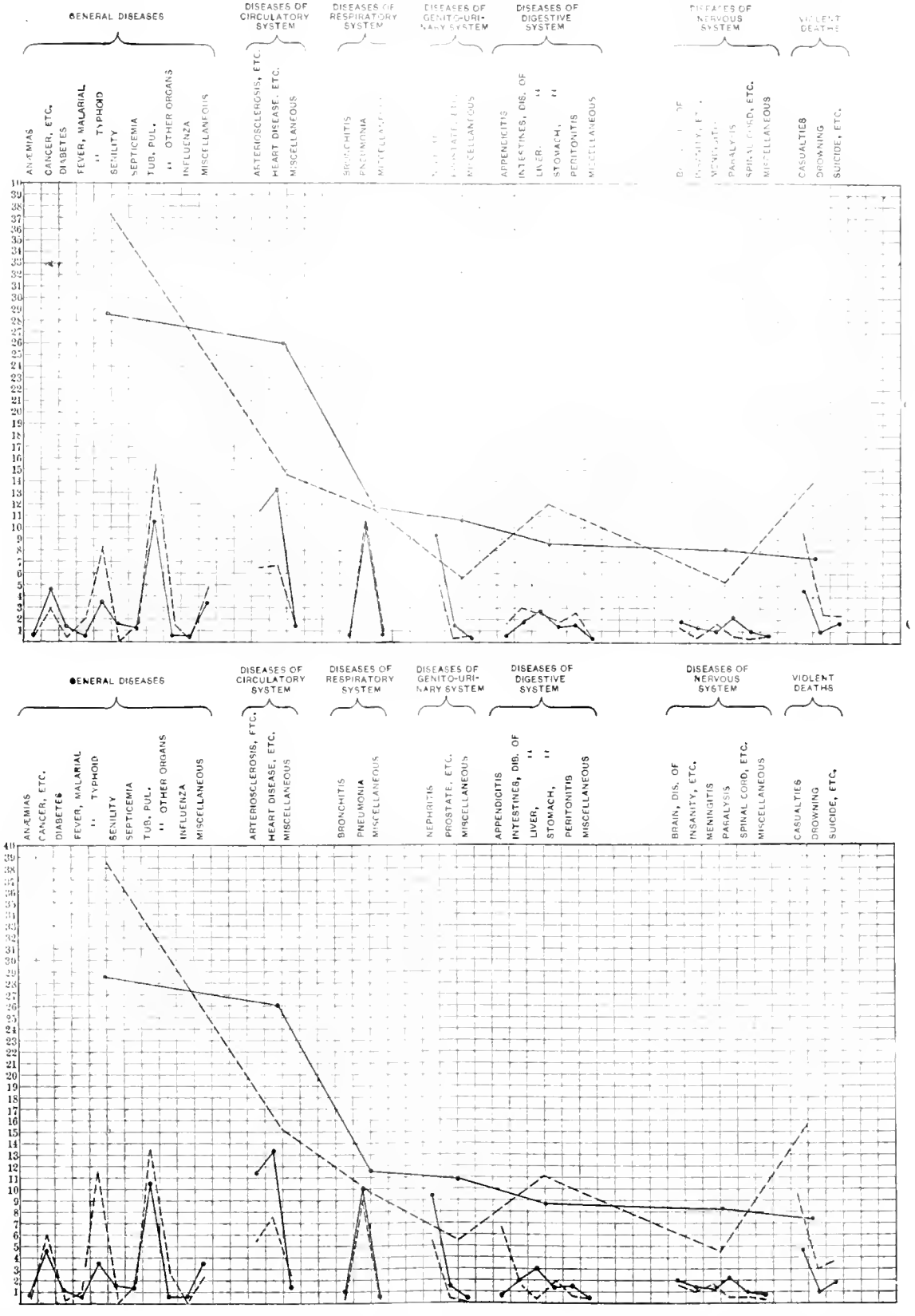
Insurance Medicine.

CAUSES OF DEATH IN THE FIRST FIVE YEARS OF INSURANCE.

To the Editor of the Insurance Department:

Sir:—I have been reading over the Medical Record of May 4, particularly the remarks on "Mortality and Causes of Death in the First Five Years of Insurance." I noticed the conclusions from Florschutz and it has occurred to me that you might be interested in the experience of this company along somewhat similar lines.

The tables differ somewhat and in order that you may read them intelligently you should know how they are built up. In 1910 I went over all the deaths which had occurred in our company since its beginning, making a separate heading for each cause of death which was responsible for half of 1 per cent. or more and bunching the others under a subheading of miscellaneous. The continuous line represents this average, the dotted lines the par-



ticular class under discussion. I am sending two charts, one of all deaths occurring with a duration of five years or less, the other deaths which occurred on policies written between 1904-1910.

The percentages referred to are percentages of the whole. For example, you will notice that during the whole history of the company 10½ per cent. of our deaths has been due to pulmonary tuberculosis. In all of our business with a duration of five years or less 15½ per cent. has been due to tuberculosis, while in our more recent business, 1904-1910, we had 13.75 per cent.

The upper line represents deaths by groups, that is, in the history of the company, 26 per cent. of our business has been due to disease of the circulatory system divided into arteriosclerosis, etc., heart disease, etc., and miscellaneous. On business written 1904-1910 15 per cent. was due to that cause.

E. W. Dwight, M.D.,

Medical Director, New England Mutual Life Insurance Company.

The Relations of the Medical Examiner to the Company.—W. S. Kendrick says that no position requires that its holder be distinguished by a greater number of virtues than that of medical examiner for life insurance. He must, of course, be a graduate physician, licensed by the State; must have had some experience in private practice; finally, his character, financial standing, morality, habits, etc., undergo a close scrutiny before he is considered for appointment. When accepted, his work is carefully scrutinized and graded, and he is promptly dropped if his record proves unsatisfactory to the company's officers. Kendrick says that he, as a medical director, has to deal with two kinds of examiners: those who do good work and those who do not. Many examiners think that the companies themselves make light of the medical examinations and would rather not know too much about an applicant in order not to be compelled to exclude him. Others are quite indifferent to the work, and lose the educational opportunity afforded by the task of finding hidden pathological conditions in supposedly normal individuals.

The object of examination is, of course, to eliminate such persons as have, or are likely to develop, some disease which would render the risk prohibitively hazardous. The part of the examination blank reserved for questions and answers may give a hint of just such condition and should be carefully filled out, the meaning of any obscure questions being explained to the applicant. The medical director considers this part of the blank of as much value as the results of the physical examination, and any further inquiries from him about the matter should be promptly answered. Delay should not be tolerated, for the agent may suffer, because of the activity of other agents or of total change of heart in the applicant.

Of course, physical examination must be honestly made. Kendrick has known of numerous blanks in which such data as uranalysis, weight, height, condition of the heart and lungs were never properly obtained but simply "faked." Of course, some work of this kind may remain undiscovered, but sooner or later the morally deficient examiner gets caught.

Superficial examinations are worse than valueless, for they are responsible for much of the losses sustained by the life insurance companies during the first few policy years. Deaths from tuberculosis and from heart disease within a few months of insurance reach a total which is a reproach to the medical profession. Weight and height must be accurately determined and not guessed at, for it must be remembered that weight alone can disqualify an applicant. The lungs should be carefully examined, the chest being bared and stethoscope being used. Any objections to baring the chest should always be viewed with suspicion. The temperature should be always taken, and the pulse counted. The heart must not be examined with clothing unremoved, and the arteries should be palpated carefully. Blood pressure estimations are invaluable and will soon be required by all companies. Urine for examination should be voided in your presence, for substitution has been practised in too many instances where this precaution was not taken. Uranalysis should be carefully performed. In Kendrick's company, of the cases rejected for abnormalities in the urine, only 10 per cent. were reported unfavorably by the examiner; the rest were excluded because of the findings by the chemist in the home office.—*The Lancet-Clinic*, August 17, 1912.

Refusal of An Injured Person to Submit to Operation as Contributory Culpability.—The Imperial Court has repeatedly ruled that it shall be demanded of an injured person, in order that he may recover, that he make use of all the resources of medical science tendered to him, so far as he is able. This obligation may include operations, not of course according to any standard or precedent, but dependent on the exigencies of his particular case—the character of the injury, the severity and danger of the intervention, etc., and, in general, the outlook for recovery. Thus in a particular case the lower court having decided that an injured man's obligation was to have a joint of a finger amputated, the Imperial Court concurred. The operation would not have been severe or dangerous, and there would have been no impairment of the earning capacity and the complainant could well have afforded the expense of the operation. The urgency for the intervention must also be gathered from the fact that the attending physician refused to continue with the case unless the operation was performed. Hence the lower court ruled that patient's refusal to be operated on amounted to contributory neglect. This decision affects the status of a damage suit although it does not bear on the claim for insurance.—*Zeitschrift für Versicherungsmedizin*, July, 1912.

Insurance Larger by $400,000,000 Than Last Year.—During the year 1911, according to the *Insurance Press*, $502,640,000 was paid out by life insurance companies of the United States and Canada. There was an increase in the life insurance business during the year, a total of $3,000,000,000 in policies having been written and revived by the regular companies, or an excess of about $400,000,000 over the business of 1910. A total of $71,000,000 was paid out in New York State to policy holders, of which the sum of $25,138,562 was distributed in New York City alone. To Brooklyn went $7,954,750; Buffalo $2,215,000; to Rochester $1,094,000, and Albany $1,334,200. In New Jersey the sum of $16,500,000 was paid on policies.

Accidents in the Brewing Industries.—In the German Trade Associations there are 43 accidents for every 1,000 workmen, but in the brewing industries, 109. In the mines in Upper Silesia, there are 90 accidents to the 1,000, as compared with 119 in the breweries in the same district.

Book Reviews.

LATERAL CURVATURE OF THE SPINE AND ROUND SHOULDERS. By ROBERT W. LOVETT, M.D., Assistant Professor of Orthopedic Surgery, Harvard Medical School; Associate Surgeon to the Children's Hospital, Boston; Surgeon to the Infants' Hospital, Peabody Home for Crippled Children and Massachusetts Hospital School, Canton; Member of the American Orthopedic Association; Korrespondierendes Mitglied der Deutschen Gesellschaft für Orthopadische Chirurgie; Socio della Società Italiana di Ortopedia. Second Edition, revised and enlarged, with 171 illustrations. Price, $1.75 net. Philadelphia: P. Blakiston's Son & Co., 1912.

IN this edition of Dr. Lovett's well-known work several parts have been rewritten in order that it might keep pace with the recent progress made in this subject, particularly with reference to etiology and treatment. The author's method of forcible correction of structural scoliosis is presented in satisfying detail. Considerable space is given to the subject of gymnastics and symmetrical exercises in the treatment of functional scoliosis. With regard to the relation of scoliosis to school life the author notes that "it may be assumed as reasonable (1) that bad air, fatigue and school life under poor general conditions, (2) improper school furniture, and (3) twisted writing positions favor bad attitude, and that the more constantly they are in operation the more effective will be their result in producing bad attitude. In the same way unfavorable home conditions in the way of bad food, overwork, and insanitary surroundings depreciate muscular strength and favor bad attitudes." Former views on the subject of the relation of the school to the production of scoliosis have changed. The author agrees with other modern authorities that while on general principles unfavorable school conditions are a competent cause of faulty attitude (false scoliosis) and of slight grades of true scoliosis, these school conditions are not likely to be the cause of moderate and severe scoliosis. Dr. Lovett's book is one of the best on the subject and should be carefully read by all practitioners who treat children.

KRANKHEIT UND SOZIALE LAGE. Bearbeitet von Prof. Dr. ALFR. BLASCHKO, Berlin; Dr. W. FISCHER, Berlin; Schularzt Dr. M. FÜRST, Hamburg; Stadtrat Dr. med. AD. GOTTSTEIN, Charlottenburg; Prof. Dr. FELIX HIRSCHFELD, Berlin; K. Landesgewerbearzt Dr. FRANZ KOELSCH, München; San-Rat Dr. B. LAQUER, Weisbaden; Prof. Dr. R. LENNHOFF, Berlin; Generalarzt a. D. Dr. H. MEISNER, Berlin; Prof. Dr. M. MOSSE, Berlin; Oberarzt Dr. J. REICHE, Hamburg; Dr. WILH. SCHALLMAYER, München; Prof. Dr. H. SILBERGLEIT, Berlin; Hofrat Dr. AD. THEILHABER, München; Dr. G. TUGENDREICH, Berlin; Priv.-Doz. Dr. G. VOSS, Dusseldorf; San.-Rat Dr. W. WEINBERG, Stuttgart; Geh. Med.-Rat. Prof. Dr. E. WERNICKE, Posen; Prof. Dr. FR. WILLIGER, Berlin; Ministerialrat Prof. Dr. FR. ZAHN, München. Herausgegeben von Prof. Dr. M. MOSSE, Berlin, und Dr. med. G. TUGENDREICH, Berlin. Lieferung. Price 6 Marks. Munich: J. F. Lehmann's Verlag, 1912.

DISEASE and social condition are two concepts that modern studies have brought into close association. In no country has more attention been given to this subject than in Germany, in which, with its highly organized statistical bureaus and its numerous insurance offices under the auspices of the state, the opportunities for gathering data on the social aspects of disease are particularly good. The work under review will consist of three parts, of which the first has been issued. The contents of this part consists of the following: An introduction, by the editors, who survey the entire subject in its larger and historical aspects; "The Principles of Morbidity and Mortality Statistics," by Professor H. Silbergleit, director of the statistical bureau of Berlin; "The Home in Relation to Disease and Mortality," by E. Wernicke; "The Influence of Nutrition on Disease and Mortality," by F. Hirschfeld, and "Occupatiton in Relation to Disease and Mortality," by F. Koelsch. It is hardly necessary to point out that these articles have been written with the thoroughness characteristic of German authors. The writers have drawn upon a vast fund of information gathered in different parts of the world. A comprehensive bibliography accompanies each article.

BABY'S TEETH TO THE TWELFTH YEAR. By ALBERT WESTLAKE, DD.S. New York and London: Mitchell Kennerley, 1912.

THIS is a small book written in the form of a friendly talk that may be read in less than an hour. One of the important parts emphasized is the prevention of dental decay in the offspring by judicious care of the mother before the child is born, particularly with reference to a suitable dietary and the elimination of wastes. The domains of medicine and dentistry overlap each other, and the successful and conscientious dentist should possess a good deal of medical knowledge. Without disparaging the extent of the author's medical lore, one may point out one of his few inaccuracies when he treads outside of his own technical sphere. He states: "five months before the child is born a most important development of its bowels —that of the large intestine, the colon, and the rectum— is taking place as the little body is forming." Now many physicians will agree with the author when he recommends that the infant's anal sphincters when tight should be regularly stretched by the insertion of soap, cotton tampons, or a vaseline catheter. There are many useful recommendations regarding the proper care of the teeth; thus, the tooth brush should be properly disinfected before and after use, and should be replaced by a new one at the end of two weeks. Recently a dental authority in England has advocated the use of a fresh tooth brush every day! Modern science is apparently not in sympathy with latter-day efforts to reduce the cost of living. In the page in the back of this book headed "diary for record" there is a line for the physician's autograph and one for the nurse's autograph, but there is none for the dentist's autograph. Why this omission?

THE HEALTHY BABY. The Care and Feeding of Infants in Sickness and in Health. By ROGER H. DENNETT, M.D., Instructor in Diseases of Children in the New York Post-Graduate Medical School; Assistant Attending Physician to the Babies' Wards in the New York Post-Graduate Hospital; Chief of Clinic in the Post-Graduate Dispensary for Children; Fellow of the New York Academy of Medicine. Price $1.00 net. New York: The Macmillan Company, 1912.

THE household book on the care of the baby has become a national institution. The physician in giving his instructions to the anxious mother is frequently confronted with what Dr. —— says in his book, sometimes to the discomfiture of the medical adviser, who may not have noticed the open book upon the dressing-table. No two of these books are alike; some of them differ widely in the views expressed, but most of them serve a useful purpose. Those that attempt to explain too much, that go deeply into the pathology and symptomatology of early life, are, however, apt to do more harm than good. Dr. Dennett has avoided this danger. His book is well written and may be easily understood by the average mother. Particularly worthy of mention is the simple method recommended for the artificial feeding of healthy infants. This method consists in the use of whole milk, diluted with water, and with the addition of malt sugar. One may not altogether agree with the statement that "there are no dangers in giving antitoxin in its present-day perfection, no matter how delicate the child may be." With this as possibly the only exception, the views expressed by the author are sound and practical. The typography with its marginal headings is an excellent feature. The book may be recommended as one that the physician may safely put into the mother's hands without fear that it will usurp his function.

TRANSACTIONS OF THE AMERICAN PEDIATRIC SOCIETY. Twenty-third Session, held at the Lake Mohonk Mountain House, Lake Mohonk, N. Y., May 31 to June 2, 1911. Edited by LINNAEUS EDFORD LA FÉTRA, M.D. Volume XXIII. Chicago: American Medical Association Press, 1912.

AMONG the many valuable articles that form part of this volume may be mentioned the following: "The Fundamental Requirements of an Infant's Nutrition," by John Howland; "Ward Problems," by Francis Huber; "The Treatment of Sepsis in Scarlatina with Antistreptococcus Serum," by Matthias Nicoll; "The Treatment of Pertussis with Vaccine," by Edwin E. Graham; a series of articles on various phases of poliomyelitis, by R. W. Lovett, Henry Koplik, John Lovett Morse, Simon Flexner, and J. H. Mason Knox; "The Use of Malt Sugar and High Percentages of Casein in Infant Feeding," by John Lovett Morse; and "Albumin Milk as Contrasted with Other Milk Mixtures in the Treatment of the Diarrheas of Children," by Henry Heimann. The article on "Muscular Hypertrophy of the Pylorus in Infancy," by Henry L. K. Shaw and Thomas Ordway, with its series of excellent photographs and photomicrographs, is a model of its kind as a clinical and pathological study. This volume is a tribute to the high plane which has been reached by pediatrics in America.

PELLAGRA: HISTORY, DISTRIBUTION, DIAGNOSIS, PROGNOSIS, TREATMENT, ETIOLOGY. By STEWART R. ROBERTS, S.M., M.D., Associate Professor of the Principles and Practice of Medicine, Atlanta College of Physicians and Surgeons, Atlanta, Ga.; Physician to the Wesley Memorial Hospital; formerly Professor of Biology in Emory College. With 80 special engravings and colored frontispiece. Price $2.50. St. Louis: C. V. Mosby Company, 1912.

THE marked increase in the number of cases of pellagra in this as well as other countries has caused an increased interest in this disease, and especially in its etiology. Pellagra was first discovered and reported in America in 1864 by Dr. John T. Gray, of Utica, N. Y. A second case was reported orally at the same time by Tyler of Somerville, Mass. It is probable that the number of cases of pellagra in the United States has been increasing since 1890, and that the disease has existed in the United States since 1880. A map showing the distribution of pellagra in the United States shows its predominance in the Southern States—sporadic elsewhere. Figures given show that pellagra has originated and prevailed in 33 out of 49 States, including the District of Columbia. It is probable that there are 10,000 cases of pellagra in the United States at the present time. One of the striking features of the disease is that it affects women more than men. Probably a majority of the American pellagrins do not work in the fields, but practically all American pellagrins live in a rural area. The cause of pellagra is unknown and the nature of the disease is in doubt. The chapter on etiology is especially interesting and discouraging. He states as follows: "The history of pellagra in other countries for the past two centuries warrants the belief that the United States is facing a long period during which the disease will prevail and in which many thousand human beings will become its victims. Little children will yield themselves to its insinuating and mysterious grasp; strong men will become weak and no longer able to render service as citizens; its mark will be left on the offspring of pellagrin mothers; and especially through the Southern States its ravages and its memory will exist side by side in every rural community. It has already fastened itself on the spinal cord, and its poisons flow in the blood of probably as many as ten thousand human beings in the States to-day. American medicine has given to the race the serum for the treatment of meningitis and has discovered the insect carrier of yellow fever. There is reason to believe American physicians will finally settle the problem of the cause of pellagra by the discovery and the proof of the toxin or the parasite which causes the disease. The corn theory is a century old and unproved—the infection theory of Sambon is new and unproved. Until the cause is definitely known the wisdom of prophylactic measures is in doubt, and the hope of more satisfactory methods of treatment is delayed. In the language of the European physicians pellagra has appeared in America and no doubt in America the true cause of the disease will be discovered. The book is of peculiar interest in connection with the rapid spread of the disease in this country and, in connection with the excellent work of Dr. Niles on the same subject, recently noticed in these columns, should be read by all interested in the disease, especially practitioners living in the Southern States.

ORAL SURGERY. A Text-Book on General Surgery and Medicine as Applied to Dentistry. By STEWART LEROY MCCURDY, Professor of Anatomy and Oral Surgery, School of Dentistry, University of Pittsburgh; Chairman of Section in Stomatology, American Medical Association (1910, 1911, 1912); Orthopedic Surgeon, Presbyterian and Columbia Hospitals, etc., Pittsburgh; Author of "Manual of Orthopedic Surgery," "Anatomy in Abstract," "Emergencies in Abstract," "Arthrosteopedic Surgery." With 228 illustrations. New York and London: D. Appleton and Company, 1912.

IN turning the pages of this book one is particularly impressed with its completeness. Within the limits of one volume the entire subject of oral surgery is presented succinctly and at the same time with sufficient attention to detail. The book is intended primarily for the dental student. It is divided into two parts: the first, including the principles of general medicine and surgery, intended for the junior student; and the second part, for the senior student, including oral surgery proper. The large number of illustrations, including those of *x*-ray photographs, are particularly helpful in a work of this kind. The author has omitted nothing that may be of service to the dentist from the viewpoint of general pathology. The rarer conditions, such as acromegaly and leontiasis ossea are given ample attention, while the important subjects such as syphilis, tuberculosis and malignant disease are presented in fullest detail. The book may be recommended without reserve.

ANLEITUNG ZUR FUNKTIONSPRÜFUNG DES OHRES. Von Dr. A. SONNTAG und Dr. H. J. WOLFF in Berlin. Mit einem Vorwort von Prof. Dr. G. BRÜHL. Pp. 69. Preis, marks 2.60. Berlin: Verlag von S. Karger, 1912.

THIS paper-covered monograph on functional testing of the ear is a brief résumé of practically all the methods used at this time in the diagnosis of middle- and inner-ear disease. A companion brochure on the diagnosis of intracranial complications of aural disease would be very welcome. There is need of emphasizing the value of exact functional tests; for carelessness in this matter often makes the preoperative diagnosis nearly a matter of pure guesswork. The paragraphs on the pointing reaction (Zeigeversuch) and on the differentiation of labyrinthine is well worthy of a careful perusal.
affections are somewhat inadequate, but the little booklet

STOMATOLOGY IN GENERAL PRACTICE. A Text-Book of Diseases of the Teeth and Mouth for Students and Practitioners. By H. P. PICKERILL, M.D., Ch.B., M.D.S. (Birm), L.D.S. (Eng.). Hon. Stomatologist to the General Hospital, Dunedin; Professor of Dentistry and Director of the Dental School in the University of Otago. London: Henry Frowde, Oxford University Press, Hodder & Stoughton, 1912.

THE increasing recognition of the importance of stomatology in general medicine as well as in dentistry accounts for the large number of volumes that have recently appeared dealing with this subject. One of the best of these is the present volume which throws a beam of light across the "somewhat ill-defined territory lying between medicine and dentistry, which to many practitioners is to a certain extent a *terra incognita*." The book correlates, amplifies and elucidates much of the information given in works on medicine, surgery, and dental surgery. The author emphasizes the importance of the general practitioner recognizing the part played by chronic infections of the teeth in the causation of secondary systemic and local disorders. Diseases of the mucous membrane and of the jaws are described from an etiological point of view and the treatment is indicated. The subject of the treatment of fractures of the jaws is covered in admirable and satisfying detail. The pathology and preventive and remedial treatment of dental disease are discussed in detail. The effects of systemic diseases upon the oral tissues, and the effects of oral sepsis upon systemic conditions are presented in accordance with the latest teachings on these subjects. The illustrations are especially helpful and are of a high order of artistic merit. The paper, typography, and binding are in keeping with the high standard established by the Oxford University Press.

LABORATORY METHODS. With Special Reference to the Needs of the General Practitioner. By B. G. R. WILLIAMS, M.D. Member of Illinois State Medical Society, American Medical Association, etc., assisted by E. G. C. WILLIAMS, M.D., formerly Pathologist of Northern Michigan Hospital for the Insane, Traverse City, Michigan; with an Introduction by VICTOR C. VAUGHAN, M.D., LL.D., Professor of Hygiene and Physiological Chemistry, and Dean of the Department of Medicine and Surgery, University of Michigan, Ann Arbor, Michigan. Illustrated with forty-three engravings. Price $2.00 net. St. Louis: C. V. Mosby Company, 1912.

A UNIQUE field is apparently occupied by this book. It should prove exceedingly useful to the general practitioner who in most instances has been weaned from doing his own laboratory work owing to its supposed difficulties and complexities. In this volume there are presented in simplified form all the important methods of laboratory diagnosis. These simplified methods apply as well to apparatus as to technique. It is shown how five dollars or less will buy everything necessary for a physician's bacteriological laboratory, excepting the microscope. One of the interesting features of this book is the series of photographic illustrations showing the apparatus assembled for different kinds of laboratory work, as for bacteriological, blood, urinary analyses, etc. The chapter on detection of the common poisons is a valuable addition to this work, as is also the chapter discussing the relative merits of the diazo and Widal reactions. Other excellent chapters are those entitled "Every Day Stool Tests," "The Technique of Private Post-mortems," and "To Find the *Treponema pallidum* in Six Minutes." The book may be recommended to the general practitioner as a safe guide, and of even greater practical value than many of the larger works on laboratory diagnosis.

Society Reports.

AMERICAN GYNECOLOGICAL SOCIETY.

Thirty-Seventh Annual Meeting, Held at Baltimore, Maryland, May 28, 29, and 30, 1912.

THE PRESIDENT, DR. HOWARD A. KELLY OF BALTIMORE IN THE CHAIR.

THE Society met in the Assembly Hall of the Medical and Chirurgical Faculty Building, and after an address of welcome by Dr. William E. Moseley, of Baltimore, which was responded to by Dr. Brooks H. Wells, of New York, the reading of papers was begun.

Menstruation without Ovaries.—Dr. PALMER FINDLEY of Omaha, Neb., reported a case in which both ovaries had been removed and the menstrual periods proceeded to recur at regular twenty-eight-day periods for one year and a half, at which time he opened the abdominal cavity and resected an adherent omentum from the fundus of the uterus and broke up numerous pelvic adhesions. He was then unable to find any trace of ovarian tissue. Seven months had intervened since this operation, and the patient continued to menstruate at regular intervals of twenty-eight days and in the usual amount. The findings in this case were almost identical with those in the case reported by Dr. George Gellhorn in 1907. The difference in the two cases was that the menstrual periods ceased to recur after Dr. Gellhorn excised the adherent omentum; while in the author's case the menstrual periods persisted. Gellhorn believed that the ovaries were not essential to menstruation and emphasized the important factor of added blood supply to adhesions to the uterus and the cyclic influence in determining the persistence of menstruation after the removal of both anatomical ovaries.

Dr. J. CLARENCE WEBSTER of Chicago thought that all had had the experience of hemorrhage occurring after the removal of the ovaries; that they had even had the experience of hemorrhage occurring from the cervix after the removal of the body of the uterus. He believed that a considerable percentage of these cases in which the hemorrhage was irregular might be explained either by the vascular degenerations in the uterine or ovarian arteries or in both, or in varicose veins of the broad ligaments. He could only recall one case in his experience where a regular flow suggestive of menstruation occurred after castration. He did not believe that Gellhorn's suggestion of adhesions was explanatory in such cases. He thought the retention after the operation either of portions of the main ovary of the stump, or what was more likely, where good surgery was carried out, the existence of small portions (perhaps not even macroscopic) in the broad ligaments.

Dr. HENRY T. BYFORD of Chicago emphasized the importance of the testimony of the patients. He recalled a patient in whom he removed the uterus and ovaries, and the woman said she continued to menstruate, but upon careful examination he found it was not exactly every month that this discharge began. The woman would have a little discharge between times. He told her to lie down a good deal, and if the discharge continued she was to return to see him. She would have a discharge of blood at one time at the end of three and a half weeks, at another time at the end of four weeks, and she was told to pay little or no attention to the little flow between times. There were a great many cases that were not menstrual in type, that is, they had not the menstrual periodicity. With regard to adhesions, he found in nearly all of his cases there were adhesions. He thought these adhesions could produce a discharge of blood. All had had cases of adhesions in which the chief symptom was hemorrhage. There was nothing more established in his mind than that adhesions interfered with the circulation by increasing it or damming it up, thus producing a bloody flow from the uterus, but this was not strictly menstruation.

Dr. J. M. BALDY of Philadelphia said he would like to emphasize not only the statement of the patient, but the statement of the doctor as to what was menstruation. The statement of the patient as regards menstruation was unreliable. He called attention to the statement, for instance, of a notable New York surgeon who transplanted ovarian tissue and called the discharge that followed menstruation. It was a mere show of blood which disappeared in a short time. It was not menstruation at all in the strict sense in which menstruation was recognized. When these patients told the gynecologist how long they menstruated, or how long they had stopped menstruating, it was found they all stopped for an unlimited length of time. He had never known a case go more than a year and a half at the outside; in a few cases the patients might have gone longer than that. They were not cases in which there were adhesions, and there was no considerable portion of ovarian tissue left to account for the continued menstruation, if it were a real menstruation in the individual case.

Dr. FRANK T. ANDREWS of Chicago said that four girls were referred to him by a physician from Wichita, Kan., who had operated on one girl after marriage for a large ovarian tumor, he removing her ovaries. Another girl after some years of treatment he had likewise operated upon and removed her ovaries, and she had a normal change of life, with a normal result in that case, namely, stoppage of the flow. Then the family moved to Chicago and here were two girls suffering so severely with dysmenorrhea that, after caring for them and striving to avoid operation for several years, after having the best advice he could get from his gynecological and neurological friends, he decided to operate on one of them. Finally he did so and she made a normal recovery. The first one operated on improved very much for about nine months, but she kept on flowing apparently normally. The operation consisted in removing one ovary, leaving one ovary, and removing both tubes. After the dysmenorrhea returned, upon examination he found she had developed a year and a half after the first operation an ovarian tumor in the remaining ovary. He operated and removed that, and in carefully looking over the field he discovered there was a little stump he had not taken out on one side for some reason. He had not cut in and taken the whole tube out from the cornu of the uterus. So he removed that. The other one was thoroughly removed. He removed the tumor and she continued to menstruate. About three or four years later he removed the bulk of the uterus, leaving the cervix. The woman still continued to menstruate, and for somewhere in the neighborhood of four years, from that time until now, this woman went through exactly the same nervous disturbances every month that she used to go through while menstruating, but she had ceased to flow.

Dr. EDWARD P. DAVIS of Philadelphia pointed out that recent studies to settle the vexed question of the time of labor threw light upon the subject under discussion. It was found that the physiological life of woman consisted in periods of accumulation of blood terminating in increased pulse tension and in hemorrhage; that this condition was independent of the presence of genital organs, that is, the genital organs might be removed and this established physiological habit of woman still continued. In some cases the persistence of this discharge and increased pulse tension were the result of disorder of the ductless glands, and some cases were improved by the administration of thyroid extract or pituitrin or adrenalin. He thought this would explain some of the cases in the discussion where the absence of genital organs by operation had been followed by continued hemorrhage. The hemorrhage would occur from a physiological standpoint in any organ lined by mucous surface and richly supplied by subjacent capillaries, and in the absence of uterine mucosa hemorrhage was seen that was familiar also from the nasal cavity, sometimes from the gastric mucosa, and sometimes from the intestine, and rarely in the hemorrhages underneath the skin which had, when complicated by hysteria, given rise to those interesting cases of alleged bloody sweat and supernatal manifestations.

Dr. CLEMENT CLEVELAND of New York City said he was reminded of a case he had some years ago where it was reported that both ovaries had been removed, and still the woman menstruated. It was a case in the Woman's Hospital in New York and his confrère, who had done the operation, had died in the meantime. The patient, therefore, came into his service, and he looked up the history. There was a miscarriage at the fourth month. The history showed that both ovaries had been entirely removed. He had very little faith in the functional activity of supernumerary ovaries, and he came to the conclusion that in most cases the discharge was due to a small portion of the ovary having been left behind. He was very positive it was in his case.

Dr. SETH C. GORDON of Portland, Maine, said he had reported two cases where pregnancy took place after as careful a removal of both ovaries as possible. One of these cases occurred in the practice of Dr. Chadwick, of Boston, who had assured him that he was certain he removed every particle of the ovary, and Dr. Gordon felt just as certain that he did likewise in his case, and yet both women bore one child each about a year and a half after the operation. He removed the ovaries of a young woman and she still continued to menstruate. Two years after-

wards he removed the uterus supravaginally and she still continued to menstruate. Two years later he removed the cervix and that stopped the menstruation, but menstruation was absolutely regular during the time that the cervix remained. So he believed that a physiological congestion actually occurred and that accounted for the regular menstrual period.

Chronic Cystitis of the Trigone and the Vesical Neck.—Dr. Edgar Garceau of Boston said that this condition was frequently incorrectly diagnosed as irritable bladder, or a neurosis of the bladder, etc. He referred to the significance of vesical psychoses. Neurasthenia was the consequence of obscure cystitis and not the cause of vesical symptoms. A clear urine with a red trigone might be symptomatic of severe cystitis. The absence of pus and blood did not exclude subepithelial cystitis. The cystoscopic appearances were referred to. There were two varieties of cystitis; one in which there was nothing to be seen but a red trigone, and this he called subepithelial cystitis, and the other in which there were marked pathological changes. Chronic cystitis of the trigone and vesical neck was always ushered in by frequent micturition. The writer was sure from long observation of these cases that the disease often started as a simple hyperemia of the trigone of the bladder, which had taken its origin in consequence of hyperemia of the pelvis which was due to some pelvic disease, and that the first symptoms were those usually experienced with vesical hyperemia. Perhaps the most serious feature of the disease was its long duration which entailed a severe degree of neurasthenia and reduced the patient to a pitiable state. In the cases in which the disease was submucous in character without superficial lesions, local treatment was not only of no avail, but harmful. A vaginal cystotomy must be performed and the top layer of the trigone dissected or curetted off through the diseased tissue.

The Use of the Continuous Fixed Laparotomy Sponge.—Dr. W. Francis B. Wakefield of San Francisco stated that as the matter of sponges was usually handled in the average operating room, it was quite remarkable that loose sponges were not closed up in the abdominal cavity oftener than they were. A sufficient number of surgeons throughout the country had used the continuous laparotomy sponge a sufficient length of time to prove conclusively that abdominal operations could be efficiently performed without the use of the dangerous loose sponge. This being so, it followed logically that as time went on and the knowledge of this fact became more widespread, surgeons would find it increasingly difficult to obtain, in courts of law, extenuation for having left a sponge in the abdominal cavity.

Dr. George Gray Ward of New York City said that for the past five years he had abandoned the use of separate sponges and had been using a continuous sponge in the form of a roller bandage, about three yards long and six inches wide, folded in four or five thicknesses of gauze. In his service no loose sponges were used in the abdomen. This roller bandage was unrolled as it was required, and the ends of it were tucked underneath the flanks, held back by the intestines and clamped to the laparotomy sheet.

Dr. I. S. Stone of Washington, D. C., stated that there were quite a number of cases on record where foreign bodies had been left in the abdominal cavity after operation, and why was it not proper for an individual, who trusted the surgeon to operate upon him or her, to grant the surgeon a carte blanche to do what was best and the patient accept the responsibility. It was about time for surgeons to take a stand with regard to operating upon free patients and doing free work in hospitals, and then possibly be sued for twenty or fifty thousand dollars, if they were worth that much, as a result. The profession had done very little to protect itself against suits of this character. It would seem to him that surgeons were at the mercy of the public, and especially of that class anxious to make the surgeon pay who had a good income.

Dr. John F. Thomson of Portland, Me., said the essential thing was the count of whatever was used in the form of sponges. This was applied at his private hospital in Portland to everything practically which possibly went through the abdominal incision in the operating room, the sponges being counted by two nurses, and counted before and after operation. Sponges might by accident be left, and he insisted on the count as being essential.

Dr. J. Wesley Boyer of Washington, D. C., said the plan he followed was to have a tape attached to each sponge that went into the abdominal cavity. If one used five or six sponges in the abdomen with a tape on each, he knew how many were put in and he knew when they came out. He would rather trust his own count than be responsible for the count of one or two nurses.

Dr. Brooks H. Wells of New York City stated that even the tape might go astray. In the only case he recalled in which a sponge was left inside the abdomen, the sponges were carefully counted before and after operation by a nurse, and they were all supposed to have tapes sewed on them with a weight on the end of the tapes. The patient, however, made a very good convalescence, but about eight or ten days thereafter she was brought into the clinic room and a sponge was removed from the culdesac.

Dr. George H. Noble of Atlanta, Georgia, said that sometimes in appendicitis cases he used a long strip of gauze, but when it came to the sponges he used one at a time, taking it out as soon as he put it in. There was a string attached to the sponge. This was the safest plan to follow in using sponges in the abdominal cavity.

Dr. Benjamin R. Schenck of Detroit, stated that the method they had followed at the Harper Hospital was to use large abdominal towels, using no sponges at all in abdominal operations. Some operators used gauze strips that were introduced into the abdomen, and these were numbered from one to eight, and the nurse must find every number.

Dr. Charles E. Thomson of Scranton, Pa., by invitation, mentioned a case in which, according to the records, no sponge had been used. There was no occasion to use one as it was a simple exploration, and yet a sponge was found later in the abdomen.

Dr. Frank T. Andrews of Chicago said he used small sponges which were carefully counted and carefully labeled with red marks. Sometimes he used a six-foot strip with a nickel ring attached to the end of a two-foot tape.

Dr. Brooke M. Anspach of Philadelphia had followed Dr. Clark's custom in the University Hospital, that is, to do all isolating by means of gauze taken from a long roll, using two or three thicknesses. The roll was probably four or five feet long, so that there was only one piece used to pack off the intestines and isolate the operative area. Twelve sponges were used for exposed bleeding points, and these were carefully counted, but as soon as bleeding ceased they were removed.

Gymnastic and Other Mechanical Means in the Treatment of Visceral Prolapse and Its Complications.—Dr. Franklin H. Martin of Chicago said that the treatment was based on the systematic reversal of the processes which caused or aggravated ptosis, including: (*a*) the placing of the patient regularly and at short intervals in the Trendelenburg position; (*b*) systematic, active, or passive exercise of the muscles of the abdomen, back, and chest, which were at fault as a result of ptosis, while the patient occupied the Trendelenburg position; (*c*) the prescribing and adjusting of properly designed temporary abdominal supports or corsets while the patient was in the perpendicular position; (*d*) proper instruction to the patient as to how to overcome the vicious habit of incorrect body attitudes often found in this condition, including exercise in the open air, diet, etc.

Dr. W. Francis B. Wakefield of San Francisco said he had been using a course of treatment for the last few years almost identical with that described by the essayist, and the results had been extremely satisfactory. Surgeons were shortsighted if they allowed some of these women, who advertised physical culture treatment in the popular lay journals, to treat this class of cases. One could take an intelligent nurse and train her to understand the principles of the application of such treatment and to make use of it intelligently, and it was better to take the necessary pains to do this and take these cases out of the hands of those outside of the profession and resort to a means of cure that would be very useful in the profession.

Dr. Charles P. Noble of Philadelphia said that these enteroptotic patients were part dead when they were going around. Their vitality was low. The treatment recommended by Dr. Martin gave them exercise and enabled them to eat more, and therefore, they developed more energy and were better. What they needed was rest. They should be fed abundant and wholesome food.

Dr. Clement Cleveland of New York City said the posture the essayist spoke about was not the Trendelenburg, but merely an inclined posture with the head downward. The Trendelenburg posture required relaxation not only of the abdominal muscles, but of the psoas muscles. In order to get this it was necessary to flex the thighs upon the pelvis with easy lifting, and the only table which did this was named after the speaker, it having been in existence for years.

Dr. Richard R. Smith of Grand Rapids said that when these women came to the gynecologist they came in a great majority of cases in a state of fatigue. A woman who was enteroptotic and in a state of equilibrium, who was leading a life within her strength, did not suffer at

all, but went about and did her work, and took her part in society with other women. She had a certain amount of vitality, but she gave out more easily. Then she consulted a gynecologist. The keynote was that she needed rest, both physical and mental. She needed to improve her nutrition, which meant better food, fresh air, or whatever other means might be employed.

Dr. WILLIAM S. STONE of New York City said there were two specific details that had given him great satisfaction in connection with the treatment of these cases. He had found walking was one of the best forms of exercise. If the principles were carried out, it meant exercise and rest. A specific way of doing this was to tell the patients to take a walk and walk a little farther than they wanted to, and they should take the walk at such time that when they reached home, without doing any work, physical or mental, they were to lie down on the bed or sofa for the same length of time that was consumed in taking the walk. They should be trained to carry out regular exercises, which should be immediately followed after they get home by rest. In addition to that he relied in helping the circulation upon a good, brisk, careful rub.

Dr. MARTIN, in closing the discussion, said the treatment he had outlined was developed in connection with the treatment of surgical cases, in the treatment of kinks of the ileum, in the transverse colon, and in conditions that were operated for by Lane and for which he gained a considerable reputation. The treatment would relieve the Lane kink that was produced by ptosis. There was no question about this.

The Torsion of Tubal Enlargements with Reference Especially to Pyosalpinx.—Dr. BROOKE M. ANSPACH of Philadelphia reported the case of a woman, twenty-six years of age, who entered the hospital with the clinical symptoms of acute appendicitis. Operation revealed torsion of the right tube and ovary. The tube was distended and filled with pus. The ovary was closely applied to the tube. The mass was purplish black in color and almost entirely free from adhesions. Tuberculosis was suspected as the underlying cause of the pyosalpinx, but the histological examination did not confirm the opinion. Two years later the patient returned for another operation and the left tube was found to be tuberculous. It was considerably enlarged and evidently represented the condition of the right tube before torsion had occurred. Histological examination showed typical miliary tubercles. The author then took up the subject of torsion of tubal enlargement in general and analyzed ninety-five cases which he collected from the literature. The variety of tuberculous enlargement which most frequently underwent torsion was a hydrosalpinx. Ectopic pregnancy and cysts originating in the tube itself and malignant tumors were other causes. There were twelve cases of twisted pyosalpinx reported in the literature. A considerable portion of these were proved to be tuberculous, and it was likely that tuberculosis was the cause of at least half of the reported cases.

The Influence of Myomata on the Blood Supply of the Uterus.—Dr. JOHN A. SAMPSON of Albany, N. Y., stated that in fifty-two specimens colored injection masses were used, and in ninety-eight either the arterial or venous system was injected with a mass impervious to the x-ray. Stereoscopic radiographs were of great value in this work. All specimens were studied with a knowledge of the age of the patient, and before the menopause the exact stage of the menstrual cycle. The arterial and venous supply of the uterus and of myomata had been described in a previous paper. The influence of these tumors on the circulation of the uterus was of much greater clinical importance than the blood supply of the tumors themselves. Menstruation was found to be due to a venous flow and depended upon changes in the walls of the venous plexus of the endometrium, permitting the blood to escape. There were not any valves in the uterine veins, so that the amount of blood lost was regulated in a large measure by the efficiency of the uterus to hold it back, and especially its muscular efficiency. Large subserous myomata were very vascular and caused an hypertrophy of the uterine artery from which its nutrient vessels arose, and thus more blood was carried to the uterus and tumor; the excess over the normal was diverted to the tumor. The chief arterial and venous changes were in the peripheral zone of the uterus, and menstruation was usually not altered. Small intramural myomata were less vascular than the myometrium, and usually did not alter menstruation, but might possibly sometimes cause uterine insufficiency with its accompanying menorrhagia or metrorrhagia. Large intramural myomata were more vascular than the myometrium, but less vascular (venous). Submucous myomata represented a later stage of the intramural variety, and the veins over the surface of these were more apt to be affected than in the intramural variety. Adenomyomata did not necessarily disturb menstruation, and the endometrium over them was usually atrophied.

Relation of Thyroidism to the Toxemia of Pregnancy.—Dr. GEORGE GRAY WARD of New York City summarized the present status of the toxemias of pregnancy of this type as follows: (1) That these cases may be classified into two groups: (*a*) Cases having no Graves' disease, but without sufficient thyroid secretion to promote the increased metabolism in the liver made necessary by the pregnancy, and probably due to the failure of the thyroid to hypertrophy. (*b*) Cases associated with Graves' disease, which condition usually caused serious disturbance in the metabolism. (2) Toxemias of the first group were frequently benefited by the administration of thyroid substance in the form of either dry extract or a serum. (3) In toxemias of the second group it was essential to determine whether the Graves' disease was in a condition of hyperthyroidism or hypothyroidism. In the former rest, applications of ice, milk diet, and sedatives should be employed, and if these measures failed an antiserum, such as the cytotoxic serum of Beebe and Rogers, should be administered. If the latter, thyroid substance should be given in the form of the dry extract, or, what was more efficient, if possible to obtain, a saline extract prepared from normal human glands, for hypodermic administration. (4) Reliance should be placed upon nitrogen partition of the urine as a guide to the severity of the toxemia rather than on the blood pressure. (5) Induction of labor was very slow and uncertain in these cases, and where the history of former labors was that of dystocia elective cesarean section was probably the safest method of delivery for both mother and child.

Treatment of Acute and Fulminant Toxemia.—Dr. EDWARD P. DAVIS of Philadelphia said that each case of toxemia of pregnancy must be studied by a thorough physical examination, and that undue importance could not be assigned to any one symptom. One fact stood out preeminently in all fatal cases of toxemia of pregnancy, and that was the disorganized state of the blood, the minute hemorrhages in the liver and other organs, and in those patients in whom fulminant toxemia lasted for some time the occurrence of pulmonary edema and of gangrenous pneumonia. Whatever we could do in the way of treatment must be addressed to avoiding these conditions. The value of milk as a prophylactic diet must be insisted upon. The prevalent desire for fresh air should also be encouraged. A thorough physical examination should give warning of the approach of fulminant toxemia. Great variations in pulse tension, disturbance of the nervous system, inability to retain nourishment, disordered secretion and excretion, and variation in the nitrogenous output of the body, as demonstrated by the nitrogenous partition of the urine, were all of paramount importance. Should the conditions be unfavorable for spontaneous delivery and the uterus make an effort to expel its contents he believed that rapid delivery by abdominal section was the operation of choice. He preferred this to vaginal section because it was free from mechanical difficulties and did not open the veins above the pelvis and lower portion of the birth canal.

Treatment of Eclampsia.—Dr. FRANKLIN S. NEWELL of Boston stated that, since the etiology of eclampsia was unknown, the treatment must be symptomatic and empirical. Until the physiological chemist found the causative agent treatment must be directed toward limiting the amount of the toxin which was absorbed in the first place; second, the prevention of damage by the toxin already absorbed; third, elimination of the toxin, and, fourth, treatment of the patient. Limitation of absorption of toxins was only to be accomplished by ending the pregnancy. The method of dilatation of the cervix and operative delivery must be chosen to suit the needs of the individual patient and operative skill of the obstetrician. Slow methods of dilatation were not to be advised. Damage by toxins already absorbed should be prevented and control of convulsions by the free use of morphia to the point of slowing respirations to 12 per minute. Lowering of blood pressure to approximately normal point by venesection serves to reduce the strain on the heart. As to the elimination of toxin, free catharsis induced by the use of saline and croton oil in repeated doses should be undertaken until several watery movements had resulted. The lower bowel should be washed out by colonic flushing. Probably most of the toxin was excreted by the intestinal tract, and if it was not removed might be reabsorbed and cause a recurrence of symptoms. The patient must be treated in certain cases and the disease allowed to care for itself, since it was evident in certain cases that any

active interference would cause the death of the patient, and the only hope lay in palliative means. In these cases and in patients who had reacted badly to operative procedures direct transfusion of blood should be considered as a possible life-saving procedure.

Dr. George Tucker Harrison of Charlottesville, Va., said that whatever be the nature and origin of the toxic substance which evoked the phenomena characteristic of eclampsia, two facts stood out in clear light. In the first place, the potency of the poison that produced the toxemia was made manifest by the degenerative changes in the kidneys, the anemia and hemorrhagic necroses in the liver, the hemorrhages into the brain, and multiple thrombosis. In the second place, the undoubted fact that, as a rule, the evacuation of the contents of the uterus was attended by a speedy relief of the symptoms—*restitutio ad integrum*. Bearing in mind these facts, it was logical to maintain that in cases of acute toxemia in pregnancy, whether with or without eclamptic attacks, the indication of treatment was to empty the uterus as speedily as may be. If the cervix was dilatable or dilated, either by manual dilatation or by the use of the metreurynter, but not by metallic dilators, sufficient dilatation might be obtained, so that version and delivery might be accomplished in a short time. Forceps should be applied only when the head was fixed in the pelvis. In a primipara, when the cervix was maintained in its entire length, the indication was vaginal cesarean section.

Treatment of Eclampsia.—Dr. Cyrus A. Kirkley of Asheville pointed out that prophylaxis was the more satisfactory treatment in the toxemia of pregnancy. Indefinite treatment was due to obscure etiology. Renal and hepatic insufficiency were probably the main etiological factors. Symptomatology was briefly discussed and the quantity of urea excreted rather than the presence of albumin determined the proper course of treatment. To eliminate accumulated toxins and to restore impaired or arrested function in the eliminative organ was the aim of treatment. Calomel and soda, followed by salines, alkaline diuretics, if not contraindicated, the hot pack, the hot air bath, glonoin, massage, pure air, and abundance of pure water were important aids in treatment. Venesection, if not contraindicated, both as a prophylactic and during and after the eclamptic seizure, was strongly endorsed. Chloroform and morphine were in disfavor. Veratrum viride was second only to venesection as an antieclamptic, but was in no sense a substitute. Decapsulation of the kidney had a doubtful place in the treatment of eclampsia, but thyroid extract might be useful as a prophylactic. The uterus should be emptied as soon as it could be done without increasing the risk to the mother. Should labor not begin with the first seizure and if the internal os uteri was obliterated dilatation and delivery by forceps or podalic version might be accomplished. The indications for cesarean section were pointed out, but too radical as well as too conservative treatment might result disastrously. While cesarean section should not be the *dernier ressort*, we should be absolutely sure that delivery by other means was impossible.

The Indications for and the Type of Operation to Select in the Toxemia of Pregnancy.—Dr. John O. Polak of New York drew the following conclusions: (1) That toxic vomiting which resisted rest, lavage, dextrose enemata, and enteroclysis, and presented a high ammonia ratio, or persistent acetone, a total white cell count of under 9,000, and a maternal pulse of 100 or more, should have the pregnancy interrupted. (2) Before the formation of the placenta the curette was the method of choice, and after this period anterior hysterotomy offered decided advantages. (3) The pre-eclamptic state, characterized by its high blood pressure, diminished urinary output, persistent albuminuria, etc., not yielding to dietetic, eliminative, and medicinal measures, justified evacuation, and surgical methods in skilled hands did less injury and had a lower mortality and morbidity than the less radical procedures. (4) When the convulsions and coma had occurred the termination of pregnancy improved the chances of the patient's recovery, and the method of delivery depended on the condition of the cervix, which determined whether it be by incision, bag, or nature, supplemented by version or forceps. Finally, anterior hysterotomy should always be the choice over manual dilatation when no effacement of the cervix had taken place.

Dr. Barton Cooke Hirst of Philadelphia had been using the parathyroid extract for five or six years, and he believed that in the rare types of toxemia he got better results than from the thyroid extract itself, but those toxemias that required parathyroid treatment were rare; they constituted only a small minority of the cases of toxemia seen in practice. He felt strongly opposed to Dr. Harrison's unqualified advocacy of the operative treatment, and he thought the society ought to carefully consider its responsibilities to the general profession. In the United States there were 7,500 cases of eclampsia every year, approximately. Of that number the vast majority were attended by the general physicians, and if the doctrine went forth from the society to the effect that the unqualified treatment of toxemia and eclampsia was the operative treatment it would do a vast deal of harm.

Dr. Richard C. Norris of Philadelphia stated that his last thirty cases of toxemia occurred during the period when vaginal cesarean section had been discussed by the profession. Of these cases there were thirteen actually eclamptic women who had had forty-two convulsions; there were seventeen pre-eclamptic cases past the seventh month of pregnancy. This group of cases was treated by the conservative plan—cases that in his judgment did not require the aggressive operative methods, yet one woman died without eclampsia from a widespread accumulation of fluid in the serous cavities, chronic Bright's disease, and none of the infants died, most of them being premature. He felt sure if he had subjected every one of these women to vaginal cesarean section he would not have had better results. He believed the time had come for us to attempt to study individual cases and properly classify them.

Dr. J. Whitridge Williams of Baltimore said that when it was essential to empty the uterus for vomiting of pregnancy vaginal hysterotomy or cesarean section was the method, and he had employed it for some years. As to the method of emptying the uterus in cases of eclampsia it was very essential to individualize, but he believed in every case where the cervix was rigid and where prompt delivery was necessary vaginal cesarean section was the operation of choice. He had employed this operation in a large number of cases with great success and great operative satisfaction.

Dr. Charles M. Green of Boston said that if we were going to be of the greatest service to womankind in this matter of pregnancy toxemia steps must be taken to get at the cases early. He happened to have had considerable experience this winter as the result of a pregnancy clinic they had been running in Boston since a year ago last May, and the result had been a considerable diminution in the number of cases of actual eclampsia, that is, women who went on to the point of having fits. They got these patients in all periods during pregnancy, not only when they presented themselves at the clinic, but when found by the visiting nurse, who was sent to keep track of these women when they presented symptoms of toxemia of pregnancy. As the result of this work they had had no cases of eclampsia. He did not mean to say by that that none of them had to be delivered or had not been delivered, but they had found by putting these patients under the usual eliminative treatment very often labor began and they delivered themselves and recovered without ever having convulsions, so that he was firmly of the belief that we should get better results, less actual eclampsia to treat, if we took steps in our clinics to get control of these women early.

Dr. Henry D. Fry of Washington, D. C., said he was never satisfied to empty the uterus until he had tried one remedy which had served a good purpose in the treatment of the early stage of eclampsia. After putting the woman to bed and prohibiting all food by the stomach and giving nutriment enemata he used inhalation of oxygen, and if he could not stop pernicious vomiting he was satisfied he should empty the uterus. He had made it a routine practice in the later months of pregnancy to examine the thyroid glands of all women, and if they did not have physiological enlargement of the thyroid at that time, if they had restlessness, sleeplessness, indigestion, he put them on thyroid extract, and had seen the symptoms disappear. He had seen the nitrogen output increase, and this did good in a certain class of cases.

Dr. George W. Kosmak of New York City said the term eclampsia was a misnomer in the class of cases to which it was generally applied. We had called a disease entity the toxemia of pregnancy by one of its prominent symptoms, but in a great many cases this prominent symptom did not appear. There were a great many cases of toxemia of pregnancy in the late months that did not have convulsions; some of them got over the toxemia and some of them terminated fatally. At a meeting held in Atlantic City several years ago Dr. Welch showed specimens from a series of four cases. They were brains and livers from each of these women, two of whom had convulsions and died as the result of toxemia, while the other two never had any convulsions, but passed meconium. Therefore, it was not fair in the treatment of these cases to assume

that convulsions were the deciding factors, and this was why he personally objected to basing a series of statistics on the presence of convulsions.

Dr. Hugo Ehrenfest of St. Louis referred to venesection in the treatment of eclampia and pregnancy and said it was an interesting fact that of late venesection had been suggested and recommended by many men. Many of these cases, he thought, were spoiled by the introduction of saline solution. One never knew when saline solution might prove detrimental to the patient, but the withdrawal of a large amount of blood worked approximately the same way as forcing delivery. According to investigation the true effect and force of saline solution lay in the loss of blood. No matter what method of treatment was resorted to in these cases the patient should be put into a hospital, and all statistics based on hospital experience in treating these cases. This should be one of the first points in any therapeutic effort. The majority of patients suffering from the toxemia of pregnancy could be brought into a hospital. He thought it was unsafe to resort to operative measures amid unfavorable surroundings. Conservatism should always be kept in mind in dealing with this class of patients.

President's Address: History of Vesico-Vaginal Fistula.—Dr. Howard A. Kelly of Baltimore pointed out that the ancients confused all forms of inability to retain the urine under the common heading of "incontinence." He said that Felix Plater in 1597 discussed the condition with the utmost clearness, but had no remedy ready to propose. The first great light upon the subject was found in the work of von Roonhuyse in 1663, describing a method of posture, exposure, denudation, and closure by means of a quilt suture. After paying his respects to Sims and Emmet, the speaker went on to discuss the newer dissection and flap-splitting methods of treatment other than those of direct denudation of the margins of the fistula, dwelling particularly upon the work of Hayward, Pancoast, Colles, Blasius, Mackenrodt, Walcher, and their followers.

Radical Abdominal Operation for Cancer of the Cervix Uteri.—Dr. John G. Clark of Philadelphia spoke on the radical abdominal operation for cancer of the cervix uteri, based upon forty operations.

Dr. Reuben Peterson of Ann Arbor spoke of the primary and end results of fifty radical abdominal operations for cancer of the uterus. There were ten deaths in the fifty-one cases, or a primary mortality of 19.6 per cent. His operative experience with the radical abdominal operation began some ten years ago, and until he had acquired some familiarity with the technique the results were very discouraging. This was shown by a primary mortality of 42.8 per cent. in the first fourteen cases. In the last thirty-seven cases there were but four primary deaths, a mortality of 10.8 per cent. In forty cases of carcinoma of the cervix there were nine deaths or a primary mortality of 22.5 per cent., while there was only one primary death in eleven cases of cancer of the fundus, or a mortality of 9 per cent. He had made a summary of the fifty-one cases which showed that eight patients with carcinoma of the cervix had died from recurrence of the disease, while one died of tuberculosis. Two patients with carcinoma of the cervix had had recurrences, but were still living. One patient had a recurrence in the vaginal vault five months after the operation. Indurated tissue about the size of the end of the thumb was removed at a second laparotomy. From personal examinations of seven patients out of the eleven with recurrences, he was able to say that in these the disease undoubtedly returned in the vaginal cicatrix. There were ten recurrences among the thirty-one cases of carcinoma of the cervix surviving the operation, while there was only one recurrence in the eleven cases of carcinoma of the fundus.

The Radical Abdominal Operation for Carcinoma of the Cervix, with a Report of Twenty-eight Cases.—Dr Howard C. Taylor of New York City drew the following conclusions: 1. The primary mortality of the radical abdominal operation was not such that it should deter us from doing the operation. 2. The percentage of operability of the cases that came under the observation of an operator would be greatly increased by means of this operation over the simple hysterectomy as formerly done. 3. The end results would never compare favorably with the end results reported from abroad until we were able to get our cases at an earlier stage of the disease, and that our justification for doing a radical operation was its moderate mortality and the relief of symptoms in a disease otherwise hopeless. 4. That our most promising field of endeavor on the subject of carcinoma of the uterus should be: (*a*) More reliable and complete statistics on operability, the community operability, primary mortality, and end results. (*b*) A well regulated organized plan of campaign in order to get the cases earlier than we do at the present time by furthering the education of the medical profession, and the public at large and by the routine examination of all women after a certain age.

The Prognosis in Radical Abdominal Operations for Uterine Cancer.—Dr. Fred J. Taussig of St. Louis said the radical abdominal operation for cervical cancer was not in itself a dangerous procedure. It became dangerous only in advanced cases, owing to the attendant complications, septic infiltration, injury to the bladder or ureter, bleeding, and prolonged narcosis. The percentage of recurrences was distinctly less after this operation than after simple vaginal hysterectomy. It should be employed in every case of cervical cancer in which there was no special contraindication to a more extensive operative procedure. In far advanced cases the immediate operative risk was so great and the likelihood of recurrence such that these patients had better be classed as inoperable. Out of fifteen patients in his group not a single one was alive today. Only by improving the training of the average practitioner, by the extermination of quacks and most of all by the persistent systematic education of the laity could we ever hope for better results.

Remote Results in Abdominal Hysterectomies for Cancer of the Uterus.—Dr. Thomas S. Cullen of Baltimore said he had performed in all over fifty Wertheim operations. The more recent ones he did not refer to in his tabulation. He reported the result in forty-eight cases. Immediate deaths, eleven cases; remote deaths at periods varying from a few months to five years, twenty cases; patients lost track of, five cases; patients living and well at periods varying from one to thirteen years, twelve cases. Twenty-five of Dr. Cullen's cases had been operated upon over five years with the following results; the mortality in the first twenty-five cases was seven, or 28 per cent.; in the succeeding twenty-three cases, four, or 18 per cent. With the early detection of cancer the mortality would naturally be lower. Immediate death, seven cases; not located, one case; remote death at periods varying from a few months to five years, eleven cases; living and well, six cases or 24 per cent. In 24 per cent. of Dr. Cullen's cases operated upon over five years the patients were living and well.

Modern Methods of Treatment of Prolapsus Uteri.—Dr. E. E. Montgomery of Philadelphia said that prolapse might be simple or complicated. No surgical procedure was applicable to every case. Certain principles must be kept in mind on which any operative procedure must be based. Their purpose should be to reduce the size of the heavy organ, replace support, and antagonize or deflect intraabdominal pressure by correction or fixation of the position of the uterus. The operative procedure may be vaginal, abdominal, or both combined. The uterus may be retained or extirpated. In all conditions requiring severe and complicated measures, its retention should be associated with sterilization. After the climacteric in marked prolapsus attended with edema and gravity sores, hysterectomy was preferable as a procedure. In the majority of cases the vaginal route was the most satisfactory. In all cases the rectovaginal interposition of the levator ani muscles was of the greatest value.

Prolapse of the Uterus.—Dr. J. M. Baldy of Philadelphia said that plastic work alone would not cure a certain per cent. of cases. Consequently abdominal work of some kind was necessary in certain instances, but supplementary plastic work was always necessary. The abdominal work could be better and more surely done if the uterus was sacrificed than if an effort was made to retain it. In the class of cases in which this operation was performed the woman was past the child-bearing period and no sentiments in regard to the uterus need be wasted.

The Principle Involved in the Operation for the Relief of Procidentia Uteri with Rectocele and Cystocele.—Dr. J. Riddle Goffe of New York said the true principle in normal support of the pelvic organs in women conformed to that of the other organs, namely by suspension from above. Any operation for the relief of prolapsus with rectocele or cystocele that ignored this principle was false in conception and in the long run was doomed to failure. The universal maxim in plastic surgery was to discover nature's plan and conform to it. In child-bearing women the uterus was retained and restored to its normal position by the shortening of the uterosacral and the round ligaments. In cases of extreme procidentia, especially in women beyond the child-bearing period, the uterus was removed, but the deflected plane of tissue was maintained by stitching together the broad ligaments across the pelvis. The round ligaments were retained and still assisted in tilting this plane of tissue so as to deflect intraabdominal pressure as before. It was diverted from

its original direction where it would tend to force the contents of the pelvis out of the vagina. The other prominent feature of the operation was the restoration of the bladder to its normal position and function. A series of forty-four cases was presented in which the operation he described had been performed, the period of time elapsing since the operation extending from two to five years. On examination of all these cases it proved entirely satisfactory with one exception. Two cases had become pregnant and borne children at full term two years after operation.

Procidentia of the Uterus Treated by Plication of the Vagina and Conjoined Shortening of the Uterosacral and Broad Ligaments.—Dr. WILLIAM M. POLK of New York City pointed out that the purpose of the operation was to remedy the defects without removal of the uterus, ovaries or tubes. Two patients became pregnant subsequently and carried their children to term. Eight cases retained all the benefits two years from the date of operation. The bladder was separated from the vagina as far as the urethra. The entire anterior vaginal wall was then folded in by suturing the sides of the vagina together with kangaroo tendon. The uterosacral and base line of the broad ligaments were conjointly shortened by a ligature which encircled above it uterine artery and within the ureter the lower half of the broad ligament and the uterosacral fold. One-half an inch from the uterus for the broad ligament, and an inch from the uterus for the sacral fold. The sutures, one for either side, were drawn forward and passed deeply into the tissue of the uterovaginal region and tied. Kangaroo tendon suture material was used for the plication and for this shortening. Additional sutures were used to fasten securely the tissues brought forward from the broad ligament and uterosacral fold to make more secure the anchorage. The fold produced by the plication at the anterior vaginal wall was now incised from below, turning back excessive tissue, it being trimmed off only where necessary, and the surfaces brought together by through and through sutures. In this way a strong supporting column was given to the base of the bladder, the whole being swung by taking up the slack in the lateral vaginal attachments, and by shortening of the broad ligament and uterosacral that had been mentioned above. The operator had carried out the procedure on eighteen cases without any undue shock or hemorrhage, and with good recovery in each case.

Dr. HIRAM N. VINEBERG of New York described the end results with various operative procedures for procidentia uteri and extensive cystocele prior and subsequent to the menopause.

Operative Treatment for So-Called Functional Dyspepsia.—Dr. WILLIAM H. WATHEN of Louisville said that every case of continued or inveterate dyspepsia or dyspepsia disappearing and recurring at regular intervals was antedated by a pathology in some part of the body, but in the large majority of cases the lesion would be found in some abdominal viscus as the appendix, the gall-bladder, the stomach, the duodenum, the large or small intestine, or the uterine adnexa. Dyspepsia caused by appendicitis or gall-stones, with no stomach or duodenal adhesion, could be cured by the removal of the appendix, or by the removal of the stones and drainage of the gall-bladder and bile ducts. In gastric ulcer the lesion should be excised, or if this was not possible, it should be infolded by linen sutures introduced deep enough to include the blood vessels around the ulcer. The excision of a gastric ulcer was important because of the fact that 75 per cent. of the cases of carcinoma of the stomach had their origin in a chronic ulcer. As carcinoma was seldom, if ever, primary in the duodenum, the excision of the ulcer was not often indicated, as in ulcer of the stomach.

Officers.—The following officers were elected for the ensuing year: *President*, Dr. Henry C. Coe, New York City; *Vice-Presidents*, Dr. George H. Noble, Atlanta, Ga., and Dr. George Gellhorn, St. Louis, Mo.; *Secretary*, Dr. Leroy Broun, New York City; *Treasurer*, Dr. J. Wesley Boyce, Washington, D. C.

Washington, D. C., was selected as the place for holding the next annual meeting.

Chronic Edema of the Fauces and Larynx in a Boy.—H. Lack reports the case of a boy, aged twelve, in whom for nearly five years, the uvula had been as large as a finger. It was removed for microscopical examination, but merely showed round-celled infiltration. The stump of the uvula was thickened, the pillars of the fauces were edematous, the epiglottis was considerably swollen, and the arytenoids, especially the left one, were so edematous that they flapped about and looked like mucous polyps. Antisyphilitic remedies had no effect, and the diagnosis has remained in doubt.—*Proceedings of the Royal Society of Medicine*

Books Received.

The MEDICAL RECORD *is pleased to receive all new publications which may be sent to it, and an acknowledgment will promptly be made of their receipt under this heading, but it must be with the distinct understanding that it is under no obligation to notice or review any publication received by it which in the judgment of its editor will not be of interest to its readers.*

METHODS OF ORGANIC ANALYSIS. By HENRY C. SHERMAN, Ph.D. Second Edition. 407 pages; cloth; price $2.40 net. The Macmillan Company, Publishers, New York.

ANLEITUNG ZUR FUNKTIONSPRUFUNG DES CHRES. By Dr. A. SONNTAG and Dr. H. J. WOLFF. 69 pages; illustrated; paper; price 2.50 M. S. Karger, Publisher, Berlin.

STUDIEN ÜBER DARMTRÄGHEIT. By Dr. FRANZ XAV. MAYR. 276 pages; paper; price 6 M. S. Karger, Publisher, Berlin.

VORLESUNGEN UBER DIÄTBEHANDLUNG INNERER KRANKHEITEN. By Prof. Dr. H. STRAUSS. 429 pages; paper; price 8.60 M. S. Karger, Publisher, Berlin.

DIE PROSTATAHYPERTROPHIE. By Dr. WILHELM KARO. 50 pages; paper; price 1.60 M. Oscar Coblentz, Publisher, Berlin.

LABORATORY METHODS. By Dr. B. G. R. WILLIAMS, M.D., and E. G. C. WILLIAMS, M.D. 204 pages; illustrated; cloth; price $2.00 net. C. V. Mosby Medical Book & Publishing Company, Publishers, St. Louis.

TRANSACTIONS OF THE AMERICAN PEDIATRIC SOCIETY. TWENTY-THIRD SESSION. Vol. XXIII. Edited by LINNAEUS EDFORD LA FETRA, M.D. 338 pages; illustrated; cloth. American Medical Association, Publishers, Chicago.

AN INDEX OF SYMPTOMS. Fourth Edition. By RALPH WINNINGTON LETTWICH, M.D. 451 pages; cloth. William Wood & Company, Publishers, New York.

THE REGISTRATION AND SANITARY SUPERVISION OF PULMONARY TUBERCULOSIS IN NEW YORK CITY. By JOHN S. BILLINGS, Jr., M.D. 93 pages; illustrated; paper. The Department of Health, Publishers, New York.

LES ANTICORPS SYPHILITIQUES. By Dr. ALBERT TOURAINE. 211 pages; paper. G. Steinheil, Publisher, Paris.

CHEMISCHE METHODIK FÜR AERZTE. By Prof. CARL OPPENHEIMER and Dr. W. GLIKIN. 93 pages; cloth; price 2.40 M. Georg Thieme, Publisher, Leipzig.

REPORT FROM THE PATHOLOGICAL DEPARTMENT AND THE DEPARTMENT OF CLINICAL PSYCHIATRY, CENTRAL INDIANA HOSPITAL FOR THE INSANE, 1909-1910 AND 1910-1911. Vol. IV. 344 pages; cloth. Central Indiana Hospital for the Insane, Publishers, Indianapolis.

THE PRACTICAL MEDICINE SERIES 1912. Vol. I. GENERAL MEDICINE. Edited by FRANK BILLINGS, M.S., M.D., and I. H. SALISBURY, A.M., M.D. 404 pages; illustrated; cloth; price $1.50. The Year Book Publishers, Chicago, Publishers.

THE PRACTICAL MEDICINE SERIES 1912. Vol. II. GENERAL SURGERY. Edited by JOHN B. MURPHY, A.M., M.D., LL.D. 616 pages; illustrated; cloth; price $2.00. The Year Book Publishers, Chicago, Publishers.

ORAL SURGERY. By STEWART LEROY MCCURDY. 469 pages, with 228 illustrations; cloth. D. Appleton & Company, Publishers, New York and London.

FATIGUE AND EFFICIENCY. By JOSEPHINE GOLDMARK. 890 pages; cloth; price $3.50. Charities Publication Committee, Publishers, New York.

OUTLINES OF EARLY DEVELOPMENT. By R. W. JOHNSTONE, M.A., M.D., F.R.C.S., M.R.C.P.E. 23 pages; illustrated; cloth; price 1/6 net. John Currie, Publisher, Edinburgh.

ELSIE LINDTNER. By KARIN MICHAELIS STANGELAND. 212 pages; cloth; price $1.20. John Lane Company, Publishers, New York.

THE PREVENTION AND TREATMENT OF DISEASE IN THE TROPICS. By EDWARD S. CRISPIN, M.R.C.S., L.R.C.P. 95 pages; cloth; J. B. Lippincott Company, Publishers, Philadelphia, Pa.

THE HOSPITAL CORPS QUIZ COMPEND. By FRANK C. GRIFFIS, M.D. 218 pages; cloth. The Edward T. Miller Company, Publishers, Columbus, Ohio.

THE NON-ANTIGENIC PROPERTIES OF LIPOIDS EXTRACTED FROM HUMAN LIVERS WITH A METHOD OF PREPARATION OF ANTIGEN FOR USE IN THE WASSERMANN REACTION. By J. G. FITZGERALD and J. B. LEATHERS. 46 pages; paper. University of California, Publishers, Berkeley.

LES SPOROTRICHOSES. By DE BEURMANN and GOUGEROT. 852 pages, with 161 illustrations in the text and 8 plates; paper; price 20 francs. Librairie Felix Alcan, Publishers.

THE CLASSICAL PSYCHOLOGISTS. By BENJAMIN RAND, Ph.D. 734 pages; cloth. Houghton Mifflin Company, Publishers, Boston.

Miscellany.

THE MEDICAL HONORARIUM.

It is hardly to be expected that at this late day anything new can be written about the medical fee. What renders extremely difficult any discussion about the latter is the fact that the physician's fee is really an honorarium, which is not supposed to represent the actual value of the services rendered, but is a sort of token by means of which the patient shows his gratitude. In earliest times such services were performed without recompense as natural acts of humanity. The first form of payment was a simple gift which in some instances consisted of munificent donations of land. Even at the present day in Russia physicians receive, instead of a definite payment for their services, gifts, whose magnitude varies according to the means or gratitude of the patient. The English consultant receives his fee wrapped in a bit of paper, as if it were a disgrace to see and handle the actual money. Payment in money has, however, been practised from the very beginning of recorded history, the Code of Hammurabi even mentioning such method of payment. With the growing complexities of modern life the various forms of medical service have been classified and given a "price" like so many commodities. Nevertheless, as Seneca says, "the physician is paid for his trouble; the patient remains indebted to him for his goodness of heart." If the doctor were paid in every instance for his actual labors he would be willing to forego the other form of indebtedness. At any rate the attitude of the public toward the physician's bill is frequently one of indifference, of grudging submission, or of hostility. This attitude has remained unchanged in spite of the fact that, so far as the body of the profession is concerned, the average fees have remained the same, while the prices of commodities have generally advanced considerably.

It is about time that the general practitioner should take a cue from his more prosperous colleagues in the specialties, namely, by demanding an adequate fee for work that is really of an expert nature. There need be no uniform office fee. With a stated sum as a minimum charge each patient should be taxed according to the nature of his ailment, and the degree of skill and the amount of time necessary in treating him. It is preposterous to assume that the same fee might be paid for treating a simple pharyngitis, as for making a thorough examination of the chest in a case of suspected tuberculosis. It will not take the public long to recognize the justice of this method of grading medical fees, which is in accord with strict and sane business methods.

The importance of exacting prompt payment is a fact that every practitioner learns after years of painful experience. Every language has a variation on the old rhyme, which Timothy Kendall in 1577 rendered as follows:

"Three faces the Phisition hathe:
first as an Angell he,
When he is saught; next when he helpes,
a God he semes to be.
And last of all, when he hath made
the sicke diseased well
And asks his guerdon, then he semes
An ongly Fiend of hell."

Prompt payment is the gist of the Latin proverb: "Accipe dum dolet, post morbum medicus olet." As the Germans say: "Lasst euch zehlen, wenn sie quelen." The French version is the following:

"Médecine et procure,
Fais-toi payer quand le mal dure."

According to the inimitable Scot:

"You shall take your fee whilst the tear is in the ee."

One cannot conclude this subject better than by quoting the section on compensation of the Principles of Medical Ethics of the American Medical Association: "It is unprofessional for a physician to dispose of his services under conditions that make it impossible to render adequate service to his patient or which interfere with reasonable competition among the physicians of a community. To do this is detrimental to the public and to the individual physician and lowers the dignity of the profession."

The Fee Book of an Irish Physician in the Seventeenth Century.—J. J. Walsh presents an interesting account of the fee book of Thomas Arthur, who practised medicine in Ireland in the early part of the seventeenth century. The first entries in the fee book are for the year 1619. Two pounds, equivalent in purchasing power to about fourteen pounds of modern money, was the fee, *collected in advance*, for the treatment of a case of simple gonorrhea. The list of patients and their ailments is interesting because of the terms used for the familiar diseases. There was one Anasthasia (*sic*) Ronan, a widow who was freed from orthopnea and paid six shillings eight pence therefor. Then there was one Gualterus (Walter) Meroney who *escaping* a putrid sore throat paid eight shillings. There is the story of a patient in detail with the account of the autopsy in order to show that the author was right and the other physicians in the case were wrong. According to this story, "Anna Gould in her fiftieth year of age and nineteenth of marriage to a second husband, though sterile, at length conceived and I told her from the evident signs of conception that she was pregnant. Some of my seniors in medicine, however, in whom she had greater faith than in me, treated her for ascites with hydragogue drugs and killed her in the eighth month of her pregnancy. At the autopsy which I succeeded in obtaining I took from her uterus a baby girl, dead but perfectly developed, and proved my diagnosis. For this I obtained not a little praise." Then he treats diarrhea and dysentery and a warm dyscrasia of the liver, and then another rather warm dyscrasia of the liver with hectic which had almost brought the patient into marasmus. There is an entry not so easy to understand with regard to a sufferer from blindness due to suffusion. Next comes a febrile sore throat, then a stomachic cardialgia which had been brought on by torrid bile. Then there was a palpitation of the heart and a woman freed from hysterical hydrops, and a stomachic cardialgia, then a cephalalgia. Then there was a young girl from the country whose name evidently he did not get, but whose fees amounted to one pound, who fell into a scirrhus of the liver from metastasis of her monthlies. Then there was an hysterical wife. Then the woman who had suffered from headache a few days before, came back with a slight fever. Then there was another case of fever and a boy freed from round worms. Then another stillbirth, and lientery, then ophthalmia, pleurisy, and then a girl with a boil on her arm which almost took away her life and only with the greatest difficulty was saved. Then there was a

sufferer from scotoma, one from elephantiasis, one from hypochondriacal melancholy, and next a fisherman caught by an anchor. In about ten months the doctor had made the equivalent of about $375 in our money, though in buying power this was probably the equivalent of some $2,000, perhaps more, in our time. In his second full year for which he gives thanks, he received 75 pounds, 18 shillings. One would expect somewhat more than this in his second year. In his third year, 1662, though he gives thanks to the Divine munificence as before for all His benefits, the sum amounted to only a little over 40 pounds. In 1623 it rose to 58 pounds; in 1624 it was 71 pounds; in 1625 it had reached over 80 pounds; in 1627 it was 105 pounds. This was the year after he had effected the cure of Archbishop Ussher. In 1628 the amount rose to 140 pounds. The following year it fell again to about 110 pounds and then below 90 pounds. In 1632 it rose to nearly 300 pounds, to sink again the following year to somewhat less than 250 pounds. His best years after this ran nearly up to 300 pounds and the average was about 250 pounds. For many years he must have made the equivalent of some $6,000 to $7,000 a year, comparing the buying power of money in both periods. Things medical were not nearly so different from what they are at present as one might readily presume them to have been nearly three centuries ago, and human nature was just the same. It is this that makes the dry bones of the old fee book live again and gives us a vivid picture of the physician who kept it.—*New York Medical Journal*, August 24, 1912.

An Antitoxin for Commercialism.—L. S. Pilcher alludes to the criticism recently made by a Frenchman, M. Menard, after a visit to America, that in this country, where money is the universal goal, medicine is not a liberal profession, but a trade. This criticism is too sweeping. The author admits, however, that in this country the absence of permanent class distinctions; the want of traditions strengthened by time and usage; the rapid development and extension of population and of large business interests, giving undue prominence to vigor in the affairs of life, and relegating to a minor place the things that make for grace and courtesy, art and refinement; the rawness and newness of much of our social state; the importance of immediate material success to be secured by the special activity of the individual; the small place for the hereditary influence of transmitted position and spirit—all tend to accentuate among us as a people the commercial spirit, the gospel of hustle and of material success. It is especially important that hereafter in the training of medical men emphasis should be placed on all those things that serve as an antidote to the commercializing tendency. The philosophy of medicine as illustrated in its history; the development of medicine as a part of exact knowledge, as illustrated in the successive phases of medical doctrine; the practice of medicine as seen in the various methods of different peoples and teachers; the medical spirit as typified in the lives of those eminent for merit and attainment in every age—should all form a part of the instruction given in an institution devoted to the liberal arts and sciences. The medical student in the early part of his course of training should be brought in contact with memorials of the careers and achievements of eminent medical men of all ages and countries. He should be made familiar with the literature of medicine. Systematic instruction in medical biography and in the history and literature of medicine should form a part of the teaching of the first years of the medical course.—*The Physician and Surgeon*, April, 1912.

The Increase of Malpractice Suits.—E. A. Sommer calls attention to the alarming increase in suits for alleged malpractice. The motive underlying many of these suits is the desire to escape payment of the bill for professional services. A large part of the litigation is caused by irresponsible attorneys. Formerly a certain class of lawyers lived by bringing damage actions against employers, but on account of laws that have been passed in various States, the amount of litigation along this line has decreased materially, and it has become necessary for such attorneys, in order to make a living, to transfer their attacks from the employer of labor to the doctor, the druggist, and the automobile owner. To illustrate the gravity of this situation in certain parts of the country, the following instance is cited: A busy country practitioner of Oregon, whenever he is called upon to reduce a fracture or perform any other kind of surgical work, exacts a release from the patient or the patient's nearest kin before he attempts to operate. In the State of Washington the situation with respect to damage suits has become so acute that a number of the physicians are forming private corporations, placing all of the stock, with the exception of two shares, in the hands of their families, the doctor retaining only one share, and all the doctor's property is conveyed to the corporation, so that if a judgment be obtained against the doctor, his private property and funds may be kept intact. It is suggested by the author that certain legislation may be of assistance in preventing the wholesale bringing of damage suits against physicians.—*Northwest Medicine*, August, 1912.

Sarcoma and Carcinoma.—In "Many Celebrities and a Few Others" William H. Rideing tells an amusing anecdote of James Payn, who, with his "Lost Sir Massingberd" and other novels, will be remembered as one of the "best sellers" of thirty years ago. At the time, Payn was editor of the *Cornhill Magazine*. One day an unannounced caller, who had managed to evade the porter downstairs, opened Payn's door. His hair was long, and his clothes were shabby and untidy. He had a roll of papers in his hand. Payn, surmising a poet and an epic several thousand miles long, looked up. "Well, sir?" "I've brought you something about sarcoma and carcinoma." "We are overcrowded with poetry—couldn't accept another line, not if it were by Milton." "Poetry!" the caller flashed. "Do you know anything about sarcoma and carcinoma?" "Italian lovers, aren't they?" said Payn, imperturbably. The caller retreated, with a withering glance at the editor. Under the same roof as the *Cornhill* was the office of a medical and surgical journal, and it was this that the caller had sought for the purpose of disposing of a treatise on those cancerous growths with the euphonious names which, with a layman's ignorance, Payn ascribed to characters in medieval romance.

To Avoid "Carbon" Trouble in the Automobile.—If a tablespoonful of kerosene is put into each cylinder immediately after a run, and allowed to stay overnight, all caking by carbon should be prevented. It is important to introduce the kerosene while the engine is hot, as the vapor which dissolves the carbon will not be formed otherwise. When next starting the engine, open the pet cocks in turn to aid in blowing out any solid particles.

Medical Record

A Weekly Journal of Medicine and Surgery

Vol. 82, No. 14.
Whole No. 2187.

NEW YORK, OCTOBER 5, 1912.

$5.00 Per Annum.
Single Copies, 15c.

Original Articles.

SYPHILIS OF THE HEART AND BLOOD-VESSELS.*

BY GEO. RICHTER, M.D.,

ST. LOUIS.

PROFESSOR OF MEDICINE, AMERICAN MEDICAL COLLEGE, ST. LOUIS; MEMBER VISITING STAFF, ST. LOUIS CITY HOSPITAL.

THE localization of syphilitic disease about the heart and vessels is generally known; its clinical manifestations, however, are of the most complex and often confusing character. And even pathologico-anatomical findings are not well understood by many. Aneurysm and arteriosclerosis are frequently identified with lues, excepting, of course, senile changes and endocarditis from other causes, like rheumatism, gonorrhea, septicemia, etc.

It shall be my endeavor to point out the anatomical and the general clinical features presenting which may lead to some understanding as to how to arrive at a fairly correct diagnosis and to initiate a rational treatment.

It may be mentioned right here that the treatment in most cases cannot be simply a specific one, as we have to combat certain conditions which are not amenable to it, namely, secondary mechanical and other disturbances of the circulation.

The invasion of the spirochete and the flooding of the organism with its toxins set up certain well-known changes in the tissues. Their general character is an exudative inflammation with a predominance of changes in the blood-vessels, while a later, though at times still early appearing stage, exhibits the formation of the so-called gumma. The latter is as characteristic for syphilis as the tubercle for tuberculosis.

Syphilitic infiltration and gumma both undergo after a while regressive, degenerative changes, resulting either in destructive processes or in scars of great firmness and particularly prone to contractions of a characteristic, usually star-like shape. Such processes may be quite diffuse in character, appearing in interstitial tissues, accompanied or not by typical gummata, or localized and more or less clearly defined from neighboring tissues. The same is observed in hereditary syphilis, namely, diffuse or localized inflammatory processes involving largely the connective tissue.

Arteriosclerosis, on the other hand, is a condition distinct from lues. To understand this well we must recapitulate the normal structure of vessels, avoiding details. Capillaries consist of tubes of a single layer of endothelial cells. To them is added in the next larger vessels an adventitia or *tunica externa*, a membrane formed by fibrous connective tissue. Between the two appears the *tunica media* or muscularis, built from circular muscle fibers. The larger the artery the more pronounced will now appear a new layer between endothelium and tunica muscularis or media: consisting of connective tissue containing a great number of fine elastic fibers forming with the endothelium the *tunica interna*. The adventitia or external layer is connected with the surrounding tissues in a variable and often indistinct manner.

Of diseases of arteries there is recognized and of importance for our present consideration in the first place the endarteritis productiva, deformans, eventually obliterans. It consists in cellular growth of the intima. The intima becomes thickened, granulation tissue may develop. The vessel is apt to obliterate or thrombi form. Trauma and toxins are named among the causes, among the latter luetic toxins circulating in the blood and irritating the endothelium. It occurs also in the aorta as an immediate continuation of an endocarditis. In syphilis this condition seems to be quite rare, at least as an isolated process.

Another affection and one of vastly greater importance is mesarteritis productiva, or inflammation of the tunica media or muscularis: the ordinary form of specific syphilitic inflammation of vessels. Mesarteritis productiva syphilitica occurs in all vessels, but its seat of predilection is the aorta at or near the heart, in an average about one and a half inches above the semilunar valves, called "mesaortitis." The valves are usually not involved, but the coronary arteries frequently suffer from secondary conditions resulting from aortic changes, from retractions and partial occlusion, to which an obliterating arteritis of the coronary vessels may be added. Deep scars result, star-shaped with a thinned wall offering lessened resistance to blood-pressure and giving rise to aneurysm. Or, in other cases, flat plaques, slightly raised with fine folds covering the surface, or thick fibrous patches are seen. They may extend down to the thoracic aorta, often they remain isolated and small. They are quite characteristic, since the endothelium is not directly involved, occur with preference in younger persons, and cannot be mistaken for arteriosclerotic processes. The mesaortitis syphilitica may be further characterized by the presence of gummata. In purely syphilitic cases the intima is *never* implicated primarily in the process.

But, of course, there also occur cases where syphilitic mesaortitis is complicated by an arteriosclerosis, as in older persons. Then we find a thickening of the intima followed by degenerative processes, or also atheromatous degeneration.

Smaller arteries, most noted among them the arteries of the brain, exhibit two principal types of syphilitic disease, arteritis syphilitica and arteritis gummosa. There are also transition or mixed cases. In arteritis gummosa we find the disease attacking the adventitia and occasionally a secondary swell-

*Read at Symposium on Visceral Syphilis, St. Louis Medical Society, May 4, 1912.

ing of the intima frequently leading to obliteration of the vessel. The condition is comparatively rare. It may give rise to aneurysm of the arteries of the brain.

Endarteritis syphilitica shows a variety of forms, most notable being infiltrations and granulation-formations in the adventitia and perhaps a swelling of the intima leading to obliteration, while the media may remain intact (endarteritis luetica obliterans).

All these pathological changes are probably set up by the presence of spirochetes at the focus—they have been found there, but not in every instance. Either they have disappeared in the course of time or, as some believe, the condition is a meta-syphilitic process, analogous to the changes in the spinal cord causing tabes.

If we compare with these arteritides the true arteriosclerosis we note that its most constant feature is a change in the *intima*.

Here appear first thickenings of the intima of considerable resistance which, as a rule, soon undergo repressive changes. The adjoining media may gradually participate in the process. Such regressive metamorphoses are most frequently met in the larger vessels, especially the aorta. Arteries of brain, myocardium, and kidneys have a tendency to undergo fibrous changes which are more diffuse, while in lues they are rather more circumscribed.

In arteriosclerosis of the aorta the intima during the first stage becomes thicker and then sclerotic, or it calcifies. Calcification is said not to occur in syphilis. In the second stage fatty degeneration sets in; partial necrosis, and the condition known as atheromatosis. Sclerosis and atheromatosis are two issues of the same cause: twins.* The latter, atheroma, leads more often to embolism, the former, sclerosis, to hypertrophy of the heart and high blood-pressure, but not necessarily to high arterial tension. Thus we may differentiate such cases clinically. The plaques are more pronounced where the blood-current normally meets pressure-changes, as the whole condition is ascribed to the results of continuous pressure-changes and pressure-increase, *e.g.* in men doing hard muscular labor. Such places are the openings of the intercostal vessels, the femoral arteries, also the radial and the temporal supplying the masticators. Under similar circumstances veins become sclerotic.

According to Kaufmann arteriosclerosis is in direct dependence upon the physiological gradual thickening of the intima in the growing organism, which continues up to about the thirtieth year. Then follows a standstill for about fifteen years. In the course of the following years normal elasticity becomes exhausted, connective tissue replaces the elastic fibers and protects the vessel against injury from steadily increasing blood-pressure. This compensation is, however, not lasting; fatty, hyaline degeneration sets in, resulting in so-called atheromatosis. According to this very plausible conception arteriosclerosis could not be called properly a disease; it is not due to an inflammation, but a very gradually appearing phenomenon of senility, apt to occur prematurely where organs have been abused or used up by unwise living. Parallel conditions are the failure of different glands to function well in the aging organism, like those of the digestive apparatus, internal secretions, and reproduction, the appearing of gray hair and of baldness. Such regressive changes are not diseases but may give rise to pathological conditions.

Arteriosclerosis of senility must, therefore, not be confounded with similar conditions of different etiological and anatomical character; for arterioscleroses due to toxins, to sepsis, to poisons are as a rule inflammatory processes which attack the tunica media and also the adventitia and only accidentally and at a later stage the intima.

We must distinguish between three separate conditions: (1) Senile arteriosclerosis, apt to appear before its legitimate time, as a condition of the aging intima; it may involve the media and occasion the formation of an aneurysm. (2) The infectious types attacking the media first, bacterial or toxic in origin; they also lead frequently to atheromatosis and aneurysm. (3) Lastly, syphilitic arteritis, in a class by itself, a disease of the media, extending to the adventitia and eventually, but not necessarily, implicating the intima.

Luetic arteritis is rather more frequent in younger years. Bittorf finds as average age of luetic arteriosclerosis about the forty-fifth year, while senile arteriosclerosis appears about the fifty-fifth year. Huchard collected 1,835 cases of arteriosclerosis and found as causes gout and rheumatism in 35.7 per cent., syphilis in 11.4 per cent., infectious diseases in 3.7 per cent. It attacks very frequently only a small surface of a vessel, it exhibits a tendency to obliterate the lumen causing fibrous changes, forms scars and partial retractions of the vessel wall, and shows no tendency towards atheromatous destruction or calcification so frequent in other conditions.

Aneurysms are commonly referred to arteriosclerosis in origin though they are in proportion to the frequency of arteriosclerosis as a subnormal condition really very rare and the fact that they occur so often before the "legitimate" age for arteriosclerosis, at least in many instances, tends to suggest that they may be due to several causes. Among them syphilis plays a prominent part. Krehl goes even so far as to say that aneurysm is rare without syphilis. At least about one-half of all the cases of aneurysm are due to syphilis. The proof for this assertion is found in that they exhibit mesarteritic changes, a diseased condition of the tunica media.

Syphilitic mesaortitis and syphilitic mesarteritis of the basilar and other vessels of the brain are not rare and often lead to aneurysms. The latter may persist for a surprisingly long time and not break

*G. Lemoine (*Le Nord Médical*, April 1, 1911) says: Lipoids, cholesterol, are built in the liver from fat, to an increased amount in infectious diseases. They are secreted with the bile, reabsorbed in the intestines and then circulate in the blood, largely impregnating the periphery of the leucocytes and aiding in phagocytosis. Toxins deposited on the arterial wall attract the lipoids (cholesterol) and biological combinations form between the foreign toxins and the organic antitoxins. The latter appearing in excess are liable to be deposited (by way of the vasa vasorum) in the arterial wall, giving rise to atheroma, a process analogous to the deposit of urates in gouty tophi and cartilages. (Calcification would then be due to the formation of insoluble calcium soaps from this greasy matter.) This explains the appearance of atheromatosis after infectious diseases. He adds that the blood of the tuberculous is very poor in cholesterol, hence a poor defense against the bacillus of Koch, while the gouty (and obese) possess an abundance of lipoids and "resist wonderfully against tuberculosis and other infectious diseases" (and therefore we feed the tuberculous with cod-liver oil?). Lemoine's theory is based on quantitative determinations of lipoids on and in the arterial wall in normal and diseased conditions and renders the appearance of atheromatosis (presenile) plausible as a condition different from physiological, senile arteriosclerosis. Both, of course, are liable to occur in the same individual.

at all; they may remain occult. The adventitia is strongly reinforced by dense connective tissue and withstands pressure quite effectually, as far as its own wall is concerned, while the pressure of the aneurysm on its surroundings is apt to destroy other tissues, even bones. Such aneurysms are probably oftener of syphilitic origin, for senile arteriosclerosis combined with aneurysm leads to an early decline.

Prompt recognition of the etiology has repeatedly resulted in a cure or marked alleviation of the condition.

Analogous are the findings in syphilis of the heart. Here also we must distinguish between senile arteriosclerosis affecting the intima—here called endocardium—and syphilitic myocarditis, corresponding to the gummous or diffuse infiltration of the tunica media—here the heart muscle itself—and finally the adventitia or the epicardium (pericardium). In other words, what has been said of endarteritis and of the mesarteritis applies also to the heart.

Senile sclerosis occurs on the endocardium and the valves with secondary regressive destructive changes.

Of much greater importance is of course the ordinary endocarditis of which a warty or verrucous and an ulcerating form are described. They are extremely frequent in inflammatory rheumatism and occur also after various infections of other character, like gonorrhea and sepsis. *But it must be noted that there is no true isolated endocarditis syphilitica*, neither a verrucous nor an ulcerating form. Destruction or impairment of the valves in syphilis is extremely rare and then due to primary affections of the myocardium continuing into the endocardium and involving the valves secondarily. Or also due to mesaortitis extending to the valves. Of greatest rarity is aortic stenosis in syphilis. Much more frequent is a regurgitation consequent upon a dilatation of the aortic ostium, after dilatation of the heart itself as produced by myocarditis syphilitica.

An isolated aortic regurgitation is almost always syphilitic. It is occasionally associated with tabes or progressive paresis.

Diffuse luetic myocarditis belongs to the rarities, as also gumma of the heart muscle. In some cases a gumma has involved the bundle of His, the Tawara node, or the venous sinus, each leading to impairment of conduction of the stimulus and consequent heart-block or Stokes-Adams syndrome, while myocarditis weakens the contractility.

On the epicardium we find gummata, diffuse inflammations due to them, and white patches. The latter are certainly not due to gumma or syphilis. The syphilitic epicardiac process is always continued from myocarditic disease. Aneurysm of the heart has also been observed in syphilis.

Now how do those anatomical changes induce constitutional or clinical symptoms?

We will have to consider primary and secondary effects. The invasion of the system by the spirochete is not to be discussed here, nor are the first changes occurring within the vascular system perceptible clinically. Great alterations may develop before the patient is aware of it. This is due to the wonderful adapting power of the heart and entire vasomotor system to changed, even to rapidly changing conditions. But almost suddenly this adaptability may fail and alarming symptoms spring up.

The clinical symptoms are caused principally by loss of elasticity of some part of the vascular apparatus, either focal or widespread. Thus originate aneurysms and arteriosclerosis. Or they may occur in consequence of arteritis obliterans, occlusion of an artery with consequent thrombosis, malnutrition, necrosis of corresponding tissues. Or a gumma may form a mechanical obstacle. Or, finally, retractions from scars left from destructive processes may interfere with normal functions. And, as it practically the case in all diseases, hampered functions awaken our attention.

The circulation of the blood is sustained not only by the rhythmical contractions of the heart, but just as well by the activity of the arterial mechanism. The arterial wall is composed of elastic fibers and of plain (smooth) fibers—muscles. These contract with each pulse beat, imperceptibly, yet with marked effect. They do not serve only to keep up a certain "tone"; for this the elastic fibers are responsible in the first place, to them the prevailing tension is due; they are the key in which the heart plays its tune. Changes in tension independent of pressure exercised by the heart take place almost constantly—variations of the heart's melody, and as a rule imperceptibly. These changes are regulated by the vasomotor centers and affect the various vascular territories differently within a given time. The blood supply to the individual organs changes according to their temporary needs. All this, as well as the dire results of any adverse interference which cannot be compensated is well known. It is not the heart which regulates circulation, but the entire vasomotor apparatus; and not only the centers either. It is true that the heart adapts itself to changed conditions, even during a single beat (Krehl), but its increased or diminished contraction and action can influence circulation only as a whole, not a single territory. Here the arteries of an organ come to play under the guidance of the respective centers. That the arteries should contract and expand rhythmically with each pulse beat in healthy conditions just so much that the passing of the pulse wave does not change its caliber would seem plausible when we observe the so-called capillary pulse (really a pulsation of the arterioles) in aortic regurgitation, when these contractions become visible. For such reasons Senac has called the arteries a peripheral heart ("les artères sont des vrais cœurs sous une autre form"). The relations between arterial tension and heart pressure are most manifold. Many ignore the fact that peripheral pressure, as measured on the radial artery, and pressure within the viscera rarely correspond. And, furthermore, arterial tension as felt with the examining finger, due to active contraction of the arterial wall over the flowing column of blood and clearly proven by the sphygmogram, may accompany high or low pressure due to the energy of the contracting heart muscle and vice versa. We meet high heart pressure (Fig. 1) with low arterial tension in many cases of aortic regurgitation, and low heart pressure (Fig. 2) with high arterial tension in some cases of aortic stenosis; low heart pressure (Fig. 3) with low arterial tension in typhoid fever and in abdominal diseases generally, and high heart pressure (Fig. 4) with high arterial tension are the rule in interstitial nephritis (with exceptions) —but in all cases subject to changes, for instance by action of drugs (Fig. 5), as well as they happen under physiological conditions. No one single

symptom, nor even two referring to one condition prove anything at all.

We are well aware of how complicated the machinery of circulation is and how seriously the slightest disturbance would affect the entire organism, if we were not so well provided with compensating arrangements, and also with a duplicity

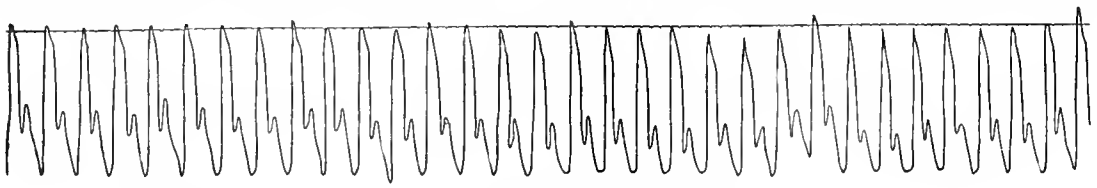


Fig. 1—T. L. M. Aortic regurgitation; syphilitic infection 30 years ago; healthy children; cirrhosis of liver; obese; no subjective heart symptoms; systolic pressure, 164 mm.; diastolic, 94; high pressure, low tension.

of most of the organs. Active automatism of the arteries is a postulate and enables persisting circulation even where the heart has grown extremely weak. Of this we make use in therapy, when we endeavor to attain comparative rest for the heart by increased flow of blood in the vessels of the periphery, not to have it stagnate there, but to circulate—by aid of the rhythmical contractions of the arteries.

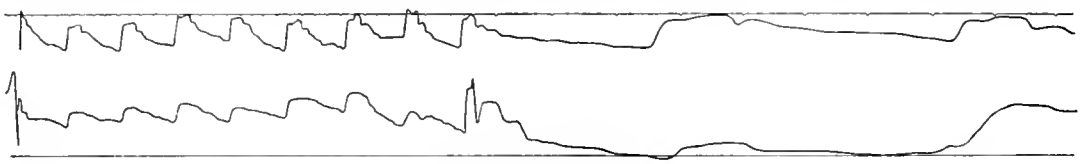


Fig. 2—J. C., 57 years old; arteriosclerosis and gout; slight anginal attacks; systolic, 120; diastolic, 70; low pressure, high tension.

In the aging arteries the elastic fibers disappear. Instead we find firm connective tissue with little elasticity; therefore, as a rule increased arterial tension. But also the muscle fibers vanish and the heart alone must propel the blood through the

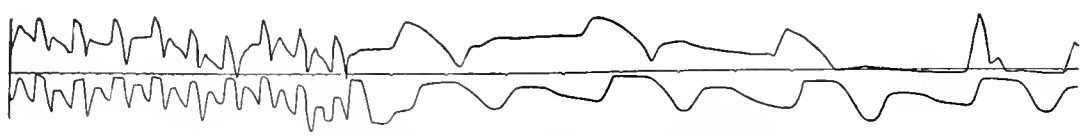


Fig. 3—Br. (colored), 23 years old; tuberculous peritonitis; upper curve carotid, lower radial; hypercrotism, as shown by carotid curve; systolic, 80; diastolic, 65; low pressure, low tension.

system. Therefore, increased heart pressure. The arteries have become incompetent, the work of the heart is increased. And as also a large number of the capillaries have become obliterated the heart would be unable to fulfill its task if the total amount of blood was not diminished. Hence again the lessened resistance of old people against many

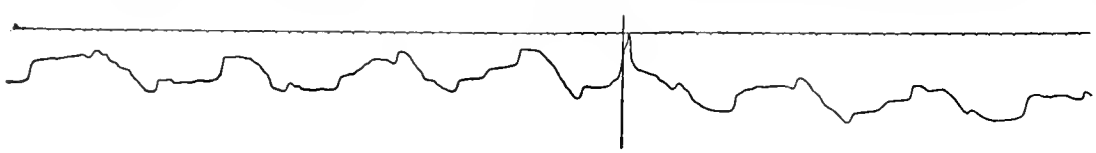


Fig. 4—H. K., 64 years old; luetic aortitis; severe anginal attack; pulse, grouping due to labored respiration; systolic pressure, 206; diastolic, 106; high pressure, high tension.

harmful influences, threatening a material shortening of life—but there has been a beneficent factor acquired, the immunity against many infections. Lessened activity, enforced wisdom, and close observation of individual experiences favor the arriving at even an extremely old age.

Atheromatous processes, the formation of aneurysms, alter this picture actually only in comparatively very rare cases.

Luetic arteriosclerosis shows a widely different aspect. Occlusion of peripheral vessels is caused in the senile form rather by thrombosis, in lues by an arteritis obliterans, in other cases again by a spastic condition localized in arteries of the extremities (as in Raynaud's disease and in many cases of diabetes); then one may observe sudden temporary limping, "claudicatio intermittens." Many draw a parallel between this and certain phenomena in heart action referred to temporary spasm of coronary vessels and of intestinal vessels, the so-called abdominal asthma. To the same class may belong the arteriosclerotic pancreatitis described by Opic, the acute fatty necrosis of the pancreas, certain cases of sclerosis of the liver, of contracted kidneys, of affections of the brain. They all are due to vasomotor disturbances, associated with some form of arteriosclerosis, and the younger the patients the more probably syphilis the cause, though other forms of toxemia must not be overlooked.

But the most dreaded of all such troubles is cardialgia, angina pectoris. As to its etiology Bouchard found lues the cause in 12 per cent. of all cases observed. Of 261 syphilitics 4.5 per cent. had angina, while of 3,739 non-syphilitics only 2 per cent. suffered from it. Angina pectoris appears in all gradations of severity, from an occasional vertigo or pain in the neck or shoulder easily mistaken for "rheumatism," with other symptoms, however, which clearly characterize the disease, to the most grave forms. The effect on the nervous system is so pronounced that the disease is comprised under the title of neurosis of the heart.

Many pathological conditions in the heart are apt to produce an attack; they all are based upon the physiological effect of heart failure. The following is the usual experience in arteriosclerosis:

The peripheral heart, the arteries have become incompetent. The central heart assumes their work, dilates, and hypertrophies. From overwork it becomes exhausted, it fails. It will fail so much easier and earlier, when itself pathologically altered, by arteriosclerosis. An attack of this kind will as a rule not be of extreme severity, for we have to

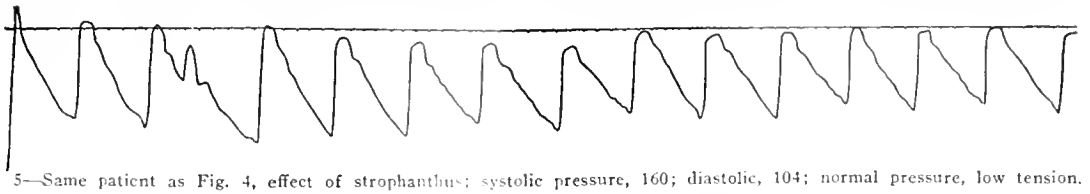


Fig. 5—Same patient as Fig. 4, effect of strophanthus; systolic pressure, 160; diastolic, 104; normal pressure, low tension.

deal here with conditions that supervene more gradually. Compensating factors are established and only extraordinary claims on the heart, *e.g.* by intercurrent disease, influenza very frequently, an acute indigestion coupled with an old albuminuria, are apt to bring on an attack.

In syphilis this process is ushered in in a different manner. Mesaortitis, and perhaps the not infrequent colonization of spirochetes around the aortic ostium, have altered the configuration of those parts. Or a myocarditis syphilitica has weakened the circular fibers around the aortic ostium; the semilunar valves have become insufficient. The arterial tree itself is but slightly affected. We diagnose a regurgitation with moderate systolic and abnormally low diastolic pressure. Of the condition of the arteries we learn by studying the sphygmogram. A pronounced dicrotic wave proves either lack of tension in the artery or a paresis of the arterial muscle fibers, while a descent somewhat delayed at the apex (a short plateau), yet very rapid, would indicate the presence of a certain arterial tension, and with the lack of a dicrotic wave perhaps means a delayed active response to the stimulus set by the pulse wave (Fig. 6). It would also point to a coexisting arteriosclerosis. These hypotheses might be substantiated by an electric arteriogram, supplementing the electrocardiogram. Still, the question of tension as against heart pressure can be decided only by the sphygmogram.

While the arteriosclerotic may have many premonitions of his circulatory condition, it is usually different from the luetic. He is perhaps not aware of anything being wrong. He uses and abuses his system in his accustomed way and will not mind an occasional palpitation or fluttering of the heart. But quite suddenly, for some not always explicable reason, the heart "breaks down." It has used up all its reserve capital and fails—a sudden pang, a sensation of missed beats, perpetual irregularity of the pulse, a violent pain in the region of the heart, perhaps extending down the inner side of the left arm (Mackenzie), a sinking sensation, an unaccountable terror, syncope, Cheyne-Stokes respiration, Adams-Stokes syndrome, cold sweat; blood-pressure rises, at least at first, rapidly, the patient gasps, his face becomes livid or pale, profuse perspiration sets in. All or many of these symptoms produce a picture of suffering than which there seems none more heart-rending. Gradually the attack subsides, the sufferer feels most welcome relief. Such spells are brought on either by an unusual exercise, an exposure to cold, a psychic adventure—anything which causes contraction of a larger territory of capillaries and thereby suddenly increases heart action beyond its now inadequate adaptability and capacity for work.

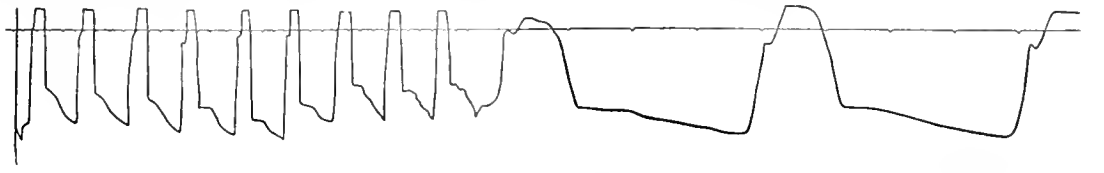


Fig. 6—J. I., 52 years old; luetic aortitis, regurgitation; no subjective heart symptoms; pain in neck and shoulder at night; infection 32 years ago; healthy progeny; disease remained occult until now (positive Wassermann); systolic pressure, 132; diastolic, 40; normal pressure, low tension.

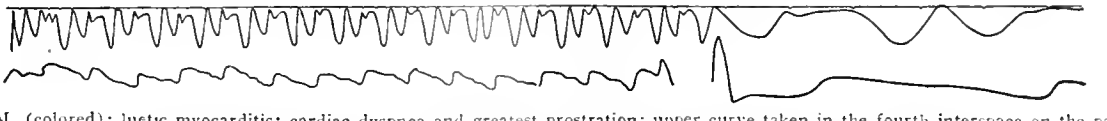


Fig. 7—M. (colored); luetic myocarditis; cardiac dyspnea and greatest prostration; upper curve taken in the fourth interspace on the parasternal line; lower curve, radial artery; systolic pressure, 170; diastolic, 138; high pressure, high tension.

Stealthily the incompetence of the heart becomes more permanent, lung congestion (weakness of the right ventricle) produces dyspnea, cardiac asthma; edema of the dependent parts is established, swelling of the liver embarrasses the abdomen, only a sitting posture allows a shadow of comfort—superfluous to dwell longer on this picture which we all have witnessed with anxious sympathy (Fig. 7).

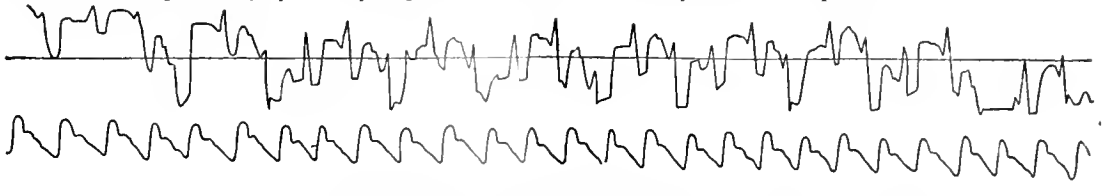


Fig. 8—Same as Fig. 7, compensation after 4 months' rest interrupted by many attacks; upper tracing jugular, lower radial; systolic, 144; diastolic, 80; normal pressure, normal tension.

It is particularly cardiosclerosis following myocarditis syphilitica which causes such havoc. In-

volvement of the organs of conduction of stimulus within the heart produces bradycardia, tachycardia, and frightens patient and attendants. Continuous irregularity of the pulse demoralizes circulation. The patient at last lies listlessly in his bed, or in a half-stupor, seems to be spellbound by the horrible stories which his heart whispers or hisses in his ears unceasingly. Motionless he lies unless a sudden attack of cardiac asthma arouses him from his lethargy to renewed and increased suffering. Daily we expect to hear of his demise—but he lingers on, he begins to breathe easier, his appetite returns, he ventures out of his bed. He recovers more strength and returns to a life of renewed activity (Fig. 8).

Are not such cases almost characteristic for lues: the sudden onset, the missing compensation, due to relative rapidity of the pathological process, the gradual reparation? The latter could not take place in arteriosclerosis, but occasionally in endocarditis.

The diagnosis of syphilis of the heart and blood vessels must be based on the same grounds which serve us in diagnosing other syphilitic manifestations. The syphilitic heart and blood vessels show clinically nothing absolutely characteristic, nothing which might not be found in other diseases. Our suspicion will be aroused when the patient is below the age of senile arteriosclerosis, when the involvement is essentially aortic and that an incompetency, when the symptoms supervene rather suddenly and are not accompanied by fever, thus excluding acute endocarditis from any other cause. The Wassermann and the luetin tests will show that syphilis is much oftener present in such diseases than has been surmised heretofore. It only remains to be stated that in such cases other evidences of syphilis, tertiary symptoms in general, are almost always absent, and that the first symptoms may occur as late as thirty or more years after infection and an uninterrupted general health.

But there are two other sides to the question after the presence of syphilis in the patient has been proven. Are the symptoms really due to syphilis or to other, complicating causes, like rheumatic endocarditis, or other toxemia, or premature arteriosclerosis? Here the art of the physician, not to say his instinct, may guide him better than laboratory methods.

And again, are the symptoms due to an active syphilis or are they the result of a previous and now terminated syphilitic process as encountered in tabes and in general paresis? Here a most careful analysis of all the symptoms may help us out of the darkness.

The prognosis is not absolutely bad; it depends of course upon the extent and the importance of the parts involved. A reparation is not rare, while it is impossible in senile arteriosclerosis.

As to treatment, nothing new can be advanced. Specific treatment is in most cases helpful. Why Ehrlich cautions against the administration of salvarsan is not quite clear. It has been given by many with excellent results. Digitalis and other bodies of the digitalis group often disappoint, though good preparations of strophanthus (however difficult to obtain) seem to be quite serviceable. Iodides seldom fail to benefit the patient, which may be partly due to their diminishing the viscosity of the blood and rendering the work of the heart so much easier. Intravenous medication (digalen, digipuratum, strophanthin-Böhringer) gives in appropriate cases decidedly better and often astounding results. Hypodermics of camphor, of caffeine, will tide over a dangerous phase. Nitrites in angina and hypodermics of adrenalin or of pituitrin are rapid in action and comparatively harmless, but the effect will not last and frequent repetition may be called for. The latter two are particularly helpful in cardiac asthma. Strychnine is of course a great stimulant, but has no direct effect upon the heart (Mackenzie).

In all other respects the management of such cases will have to be guided by the rather erratic rules governing treatment of vascular diseases in general. A close supervision of all the functions of the organism, careful regulation of the diet, a proper weighing of rest and exercise promise altogether better results than routine prescriptions and measures. Physical therapy is perhaps the most beneficial of all, but difficult to apply properly. Sweating and purging in edema exhaust the weak and hasten collapse—heart failure! A salt-free diet and restriction of liquids give more satisfaction (Karrel diet).

One must always keep in mind that the most desperate cases, that seemed absolutely hopeless, may recover.

3538 Humphrey Street.

CHLOROSIS AND TUBERCULOSIS.

By CHARLES M. MONTGOMERY, M.D.,

PHILADELPHIA, PA.

Chlorosis and tuberculosis are two diseases that have always been studied in conjunction by those who have felt any special interest in either one. In spite, however, of the numerous contributions to the literature in recent years little new light has been shed on any relationship that may exist between the two affections, and the most practical results that have been achieved have been to clear up certain misconceptions and to lay renewed emphasis on the importance of carefully investigating all cases of chloranemia for evidences of tuberculosis.

The present paper deals briefly with some of the questions arising from a study of chlorosis and tuberculosis, particularly in regard to the relationship supposed to exist between them, and presents for what they may be worth the data in any way bearing on the question of tuberculosis gleaned from forty-three case records of chlorosis obtained in the wards and the dispensary of the University Hospital. It was highly desirable to find out whether any of these patients developed tuberculosis later, but it was possible to get in communication with only seven of them after they had suspended treatment.

A description of the disease chlorosis will not be attempted here. Suffice it to say that the term chlorosis still stands for a fairly clearly defined symptom-complex, and that the chloranemia is simply one of the symptoms of the disease, and not necessarily the most important, some authors even asserting that the anemia is not absolutely essential to chlorosis. In passing, reference may be made to the well-known fact that the number of cases diagnosed as chlorosis is decreasing. This is to be explained at least in part by the relegation more and more of cases simulating chlorosis to the group of secondary anemias.

Etiology.—Chlorosis is rarely a fatal disease and little is known of its anatomical basis. Concerning tuberculosis as a factor in the pathological etiology, I can only say that I have been unable to find any

record of the presence of tuberculosis at an autopsy of a chlorotic patient. Our ignorance regarding the etiology of chlorosis is well expressed by R. C. Cabot (Osler's "Modern Medicine," IV, 642), who says that we know nothing about the causes of chlorosis beyond vague guesses suggested by certain statistics. A factor that has been frequently held responsible for some of the cases of chlorosis is tuberculosis. The imaginable explanations as to how tuberculosis produces chlorosis may be grouped under two general heads: (1) Tuberculosis directly by its toxic effects gives rise to the symptoms of chlorosis. (2) Tuberculosis indirectly by influencing the organism either before or after birth affects it in such a way that even after all toxic effects of the tuberculosis have passed off there remains in the individual an abnormal physiological or structural condition, the evidences of which are revealed by the characteristic symptoms of chlorosis. Thus in late congenital syphilis one sees symptoms resulting from toxic effects and structural change. It is part of the purpose of this paper to investigate how far the assumption that tuberculosis is a cause of chlorosis is justified.

Age.—Most of the cases of chlorosis occur before twenty-five. Cabot found 94 per cent. of 497 cases to occur between fifteen and thirty. All except four of the writer's forty-one cases with age recorded were under twenty-five years of age. It is strange if tuberculosis produces chlorosis that it does not do so more frequently at other age periods when tuberculosis is at least equally prevalent.

Sex.—If it is difficult to explain on the assumption of a tuberculous basis why chlorosis prevails chiefly in persons under twenty-five, it is even more difficult to explain why the disease is almost entirely limited to the female sex. The writer's forty-three cases of chlorosis followed the general rule that has few exceptions, all being in women.

Heredity.—Chlorosis often occurs in certain families, but is especially liable to be transmitted through the female members, therein differing from tuberculosis. A causal relationship between tuberculosis and chlorosis has been claimed by a number of writers because of the frequency of tuberculosis in the families of chlorotics. Van Noorden (Nothnagel, "Specielle Pathologie und Therapie," Vol. VIII, 1901, Die Bleichsucht) states that forty-four, or 20.3 per cent., of 217 chlorotics gave a family history of tuberculosis. In thirty-nine of the writer's cases five gave a history of tuberculosis in the immediate family, one other a similar history in a first cousin, and three gave a questionable history, while the remaining thirty-one furnished absolutely no family record of tuberculosis. But when one considers how prevalent tuberculosis is, even when there is no chlorosis, and how many deteriorating influences are at work in the class of families in which tuberculosis is most rife, he is left unconvinced by statistics as to any effect tuberculosis may exert through heredity in the production of chlorosis.

Occupation and Environment.—Finding chlorosis relatively often in those exposed to the same confining occupations and modes of life that are frequently encountered in consumptives, some writers have hastily concluded that therein lies evidence in favor of a tuberculous origin of chlorosis. One might equally reasonably attribute all other pathological conditions arising under like unhealthy influences to tuberculosis.

Blood.—The occurrence in chlorosis and tuberculosis of an anemia exhibiting certain similarities in both conditions has been a potent factor in forming the opinion that the two diseases are in some way related. Certainly it is a suitable question whether the chloranemia so often accompanying tuberculosis may not in some cases represent an early stage of chlorosis. Against such an hypothesis is the great frequency in acute and severe cases of chlorosis of a marked lowering of the hemoglobin percentage, while in tuberculosis (uncomplicated) the anemia is nearly always only slight in extent even in advanced cases. A few figures may be given to illustrate this point. Out of 352 cases of chlorosis R. C. Cabot (Osler's "Modern Medicine," IV, 647) found a hemoglobin percentage as high as 60 in only six and in none was it over 70. R. Stockman (*Edinburgh Medical Joural,* November, 1895) reported sixty-six cases of chlorosis, the hemoglobin varying between 20 and 66 per cent. The average hemoglobin estimate in Thayer's sixty-three cases was 42.3 per cent. In the writer's cases only two out of thirty-six had a hemoglobin estimates as high as 70 per cent., the highest being 73 per cent., while only five others reached as high as 60 per cent. In marked contrast are the figures for tuberculosis. Thus, L. Brown (Osler's "Modern Medicine," III, 256) gives the following hemoglobin averages in 154 cases: Male, incipient, 91.0 per cent.; advanced, 90.04 per cent. Females, incipient, 88.2 per cent.; advanced, 90.3 per cent. All of these cases had 75 per cent. hemoglobin or above except two, and none below 65 per cent.

At the Home for Consumptives at Chestnut Hill the following averages were obtained: Incipient cases, twenty-seven, average hemoglobin, 85.1 per cent.; moderately advanced cases, thirty-seven, average, 85.9 per cent.; far advanced cases, eighty-two, average, 82.6 per cent. These almost without exception had a hemoglobin percentage above 70. B. L. Wright and R. W. King (*American Journal of the Medical Sciences,* June, 1911) in a large number of cases of tuberculosis obtained an average hemoglobin percentage of 85. It is indeed hard to explain on the basis of any special relationship between tuberculosis and chlorosis why the marked cases of chlorosis do not oftener show evidences of tuberculosis, and why tuberculosis in all its stages usually presents a fairly high hemoglobin reading.

An investigation of the red cells and leucocytes does not throw any additional light on the relationship between chlorosis and tuberculosis. A relative lymphocytosis is frequently encountered in chlorosis and in early tuberculosis, but is a common occurrence in patients in a number of conditions in which there is blood of poor nutritive qualities (Cabot). Distinct differences in the two diseases are found in the total volume of the blood, this being increased in chlorosis through an increase in the amount of plasma, while the specific gravity of the plasma in chlorosis is diminished and in tuberculosis is normal or increased.

Symptomatology and Previous History.—The number of symptoms common to both chlorosis and tuberculosis might predispose one to think that some close relationship existed between these maladies. Thus weakness, dyspnea, palpitation, dyspepsia, menstrual irregularities, and even fever frequently accompany both diseases. But frequently a distinguishing feature is that a prominent symptom in one affection is insignificant in the other, and a relatively insignificant symptom in one

disease is prominent in the other. Certain localizing respiratory symptoms like cough and expectoration are usually early and prominent symptoms in tuberculosis and are frequently absent in chlorosis, while a normal weight often found even in severe chlorosis contrasts strikingly with the frequent loss of weight in tuberculosis. Dyspnea, a common symptom in chlorosis, is often quite marked entirely independent of the existence of cough, whereas it is rarely a prominent symptom in tuberculosis until cough and abnormal physical signs have developed. A symptom in chlorosis very suggestive of tuberculosis is the fever. It occurred as frequently as 361 times in 497 of R. C. Cabot's (Osler's "Modern Medicine," IV, 645) cases. It is usually slight in degree and irregular in course. "In the milder cases it rarely reaches above 100.5° F., and is present only a few days at a time, but in some of the severer types of the disease fever may be present constantly for weeks." In forty-two of the writer's cases eleven were free from a record as to any past or present condition suggestive of tuberculosis. The remainder revealed evidences that might be considered suggestive of tuberculosis. Cough, expectoration or colds were recorded in ten, blood-streaked sputum in two, chest pain in five, dyspnea in eight, palpitation in five, loss of weight in eight, and weakness in two. The temperature was recorded in twenty cases, being normal in five, between 90° and 100° in ten, and over 100° in five. The pulse rate in ten recorded cases ranged between 80 and 100.

Tuberculin Test.—The frequency of a positive tuberculin reaction has played its part in creating the impression that tuberculosis is responsible for some of the cases of chlorosis. Thus G. Zickgraf (*Fortschritte der Medizin*, Leipsic, XXVIII, No. 17, April 28, 1910) found a positive response in 74.8 per cent. of fifty-five cases of chlorosis in which there was nothing else to suggest the existence of tuberculosis. In forty-eight other cases the chlorosis accompanied manifest signs of tuberculosis. In the tuberculous cases in which the so-called chlorosis was the first or one of the first manifestations of the infection the patients reacted to the tuberculin test with a smaller dosage and in a larger percentage than the rest of the tuberculous suspects, and the percentage of negative responses was less. The reaction was obtained with five milligrams or less in all but five of the patients. These figures, impressive as they may seem at first sight, are not convincing in establishing a relationship between tuberculosis and chlorosis. In the first place, tuberculosis is an extremely prevalent disease as is proven by the tuberculin test and by autopsies. K. Franz's (*Wiener klinische Wochenshrift*, XXII, No. 28, July 15, 1909) well-known figures show a positive subcutaneous tuberculin reaction in 38.7 per cent. (Hungarians) and in from 61 to 76 per cent. (Bosnians) among 1,000 recruits. Naegeli found recognizable tuberculous lesions in 08 per cent. of 500 adults at autopsy. In the second place, Zickgraf evidently considered many mild grades of chloranemia, which were really tuberculous in origin, as cases of chlorosis. Out of three cases of chlorosis collected by the writer in which the tuberculin test was applied all gave negative results. In two cases the von Pirquet method and in one case both the skin and the eye tests were employed.

Physical Signs in the Chest.—Most writers have very little to say about the lungs in chlorosis, and references to any abnormal findings are very rare. R. C. Cabot (Osler's "Modern Medicine," IV, 645) says the respiratory system shows nothing remarkable except deficient expansion of the lungs. C. Luzet ("La Chlorose," Paris, 1892) states that the dyspnea of chlorosis is not accompanied by cough or any auscultatory phenomena capable of explaining it. He mentions a number of modifications in the respiratory sounds especially noticeable at the right apex, but not indicating the presence of tuberculosis. In thirty-three of the writer's cases the physical signs were recorded as normal in twenty-one, while in most of the remainder the descriptions referred to conditions at the right apex that could not be interpreted to signify either a normal or an abnormal condition.

X-Ray.—It is unfortunate that so few records of *x*-ray examinations of the chest are available. C. Von Noorden (*Medizinische Klinik*, Berlin, 1910, VI 1, p. 1) states that the *x*-ray reveals in chlorotics a high position of the diaphragm, but free pulmonary motion. He makes no mention of any evidences of tubercles in the lungs. A radiographic record was found in only one of the writer's cases, there being described a suspicious right apex and calcified bronchial glands. The von Pirquet test in this case was negative.

Evidences of Extrapulmonary Tuberculosis in Chlorosis.—Tuberculosis in parts of the body outside the lungs has been asserted to occur quite frequently in chlorosis. Von Noorden (Nothnagel, "Specielle Pathologie und Therapie," 1901, Vol. VIII, Die Bleichsucht) found a previous tuberculosis of the glands or joints in 17.8 per cent. of 217 cases of chlorosis. Among the writer's cases there was no record of any previous tuberculous condition. The glands were described in fourteen of the cases, in nine being normal. The descriptions in the remaining five cases were as follows: (1) palpable gland in right axilla; (2) enlarged cervical glands and small gland in each axilla; (3) few enlarged glands; (4) and (5) palpable cervical glands. In other words, there was no positive evidence of any glandular tuberculosis.

Ultimate Results in Chlorosis.—One of the most promising methods for investigating the relationship between tuberculosis and chlorosis is the following up of cases of chlorosis to see if they develop tuberculosis later. Hayem (quoted by C. Luzet, "La Chlorose," Paris, 1892) followed forty cases of chlorosis for many years and only two developed tuberculosis, both mild and chronic in type. A. Stengel ("The Diagnosis of Chlorosis and Chloranemia," *University Medical Magazine*, April, 1900) mentions two cases at first regarded as chlorosis soon after developing acute and progressive tuberculosis. The attempt was made to get in communication with all the cases mentioned by the writer, with successful results in only seven. The periods elapsing after the suspension of treatment varied between several months and several years. The patients were questioned as to their general health and strength, their weight, breathing, cough, expectoration, temperature, and other symptoms and illnesses since suspending treatment. Three of the patients had remained perfectly well. One complained of weakness, dyspnea, palpitation, and pallor, but was free from cough and expectoration. A second said she tired easily on walking. A third had some cough and expectoration, also an ovarian abscess, but the weight was normal. A fourth was feeling generally poorly, had a dry cough,

fever, loss of weight, headache, and nervousness. Of these four two were probably suffering from symptoms of chlorosis. In the other two it was impossible to come to any definite conclusion as to the existence of tuberculosis. In the only case in which a chest examination was obtainable the physical signs were normal.

Treatment with Iron in Chlorosis and Tuberculosis.—The value of iron in the treatment of chlorosis is referred to here merely in contrast to its value in tuberculosis. This difference is at times of aid in their differential diagnosis. In former times iron was considered as productive of hemorrhage and of rapidly fatal tuberculosis. To-day iron has its enthusiastic advocates in the treatment of tuberculosis, but it does not produce in this disease, especially in the absence of other treatment, the rapid and marked curative effects often observed in chlorosis. This difference in action of the drug towards the two diseases affords additional evidence that they are independent of each other.

This brief treatment of the subject, undeveloped, I regret to say, by much original evidence, may be concluded as follows:

While it may appear plausible at first sight to offer tuberculosis as a cause for chlorosis, such a relationship still lacks satisfactory proof. In a large number of cases of chlorosis tuberculosis can be reasonably excluded. Most of the cases that have been followed up in after years remain free from tuberculosis, but the available records of these cases are few. While the two diseases share common symptoms there is usually a marked difference in their relative intensity, and in many instances prominent symptoms of one affection are lacking in the other. Specially worthy of note is the common occurrence in chlorosis of a hemoglobin percentage below 70, while tuberculosis usually shows a percentage above this. Of distinct significance is the action of iron, which behaves as a specific in chlorosis, often producing, even in the absence of other treatment, rapid and marked curative effects, far more striking than the effects ordinarily following the use of the same drug in tuberculosis. Cases in which the chloranemia can be traced to tuberculosis should not be regarded as cases of chlorosis.

It is far from the writer's thought to minimize the importance of investigating all cases of chloranemia for evidences of tuberculosis. Such an investigation cannot be too thorough.

I wish to take this opportunity to thank Dr. Stengel and Dr. Klaer for the use of records at the University Hospital.

REMARKS UPON PSYCHOGENETIC CONVULSIONS AND GENUINE EPILEPSY.*

By L. PIERCE CLARK, M.D.,

NEW YORK.

In view of the fact that the more exact methods of psychonalysis have made closer and sharper the relationship between the psychoneuroses and the epilepsies, I trust such matter as may be brought out in this small paper will stimulate renewed study of the subject. Such study ought to further the ends of diagnosis, prognosis, and treatment of the convulsive disorders.

*Read before the third annual meeting of the American Psychopathological Association, Boston, May 29, 1912.

It is fairly well proven that so-called genuine epilepsy is a disease characterized by degenerative changes in the cerebral cortex of a widely variant character, but of sufficient histological moment to explain the type of disease. Inasmuch as the disease has a morbid anatomic pathology, it must be classed as an organic disease. In the light of these facts it is perplexing to note that convulsive phenomena of psychogenic origin, or from a purely nonstructural basis, should be confounded with the seizure phenomena of genuine epilepsy, yet nevertheless such continues to be the case. No doubt many atypical seizures seen in idiopathic epileptics, even though the comitial disorder is certain and positive, are often not really epileptic in character or origin. All such seizure episodes should be subjected to strict analysis. One often notes the disappearance of these atypical attacks in frank epileptics though the grand mal attacks themselves remain unmodified. I can recall five cases seen during the past year in which this outcome resulted. Indeed, a wise truism often applied in organic neurology, and attributed to Sir William Gowers, namely, that no two nervous disorders are mutually exclusive, is a good one to apply in these borderland nervous diseases. Without digressing too far from the logical development of our subject, one may say this principle has been brought out distinctly in psychotic disorders, where it has been shown recently that almost any psychotic syndrome, such as the manic depressive, the dementia præcox, etc., may be demonstrated even in such a well founded paradigm mental disorder as general paresis.

It cannot be successfully gainsaid that too little attention is still paid to descriptions of the various types of fits in genuine epilepsy. The rather superficial scientific attitude of assuming that one has sufficiently classified the seizure phenomena of a given case of epilepsy by designating the attacks grand mal, petit mal, and psychic, is an instance in point. I must say that after having dealt with the so-called idiopathic disease for years I am as keenly on the outlook as ever to find any classified case of the genuine disorder turn out to be an epileptiform expression of a more frankly and deeper seated organic disease or defect of the brain. Now that more team work is being done by the internist and the neurologist in our field, especially regarding metabolic defects, the keener must our apprehension be in this respect. What we may lose in directness and apparent grasp of the individual case is more than compensated for by a real insight into the particular morbid mechanism under study. It may be safely ventured, in view of the surprising gross defects at autopsy in brains of so-called idiopathic epileptics, that nowhere in clinical neurology are there greater results to be obtained for the advancement of neurologic science than in making carefully detailed descriptions of all types of seizures without employing fixed terms. When this plan is followed one is surprised to find not only episodes which are by no means really epileptic in character, but that even the classic attacks of the disorder are often widely variant. Evidently in different seizures of the one case many different cortical functions are participating at different times in the epileptic discharges. A pathological study of the variations of the different cortical areas involved in apparently identical epilepsies become more understandable when one takes our view of the clinical study. Following the above suggestions more carefully in future we may at least eliminate some of the

strangeness of this "strange disease." While the neurologist may have been concerned in the past with a more exact localization of the epileptic discharge, and would steadily reiterate the importance of a more exact study of fits, no less active and exacting have been the demands of the psychonalists who are contributing their share in this renaissance of the study of convulsive phenomena. They have found that many atypical epilepsies are really functional psychoses, and this is especially true of the psychic epilepsies. If one excludes the cases that show classic fits of epilepsy, at some time in their history, one might easily class the majority of the remainder as of psychogenic origin and therefore as really not epileptic at all. Even in those individuals frankly epileptic, their disorder undoubtedly predisposes them to a ready splitting of personality, not only expressed in psychogenic convulsions, but also to so-called epileptic twilight states, day dreams, temporary absences, frights, distractions, pure phantasies, and a notable criminal disposition due to suppression of moral inhibitory ideas. The post-epileptic automatism in its behavior, even when so prolonged and complex as to amount to a delirium or transient manic episode, is much better explained on a basis of a dream-state in which wish-fulfillment is the motive or ruling idea. This is commonly shown in institutional epileptics afflicted with nostalgia who show a tendency to wander away from institutions in which they are being cared for and the prompt cessation of such automatic tendencies when the same individuals are returned to their homes.

The admixture of psychogenic episodes in an otherwise classic epileptic is shown in one of my recent cases who has "ocular attacks" of blinding flashes of light, dizziness, faintness, and a sense of great dread and desire to escape from the house. The attacks occurred almost daily when she sat down to eat with her family. The understanding of these peculiar attacks was only partially cleared up in that this girl was one of the few survivors of the Slocum disaster. In further analysis it was disclosed that she has been separated for a long time from her German sweetheart in Europe whom she hears from infrequently and whom she wishes she might visit. Apparently the delightful picnic parties she and her family had with her lover's family starts day reveries at the meal time, and the Slocum disaster experience substitutes the peaceful desire to take the safe journey by ordinary transatlantic ship.

Such psychic episodes but a few years ago, and even in some quarters to-day, are called psychic equivalents, meaning in an ambiguous way that such phenomena replace and are a kind of mental epileptic fit. They are, however, but psychic episodes in an epileptic individual and may and do, as we all know, occur quite independently of epilepsy. Such individuals should not be declared epileptic upon such evidence alone though the state has many of the superficial resemblances of an epileptic attack. As Stekel, Jones, and others have shown, psychoneurotic individuals may not only have aura at these psychic episodes like genuine epileptics, but they may fall and injure themselves and, in exceptional instances, even have bladder incontinence, bite the tongue, and lose consciousness. There are no pathognomonic signs of epilepsy to-day. All have been overthrown. Medical literature is filled with instances where there is an over- or undervaluation of the individual symptoms according to the individual observer's viewpoint and the point he wishes to prove. The case is overstated when a hysteric or psychoneurotic episode would be classed as epileptic and understated in the reverse effort. However, the case which I had intended to report in detail cannot be charged to defect of the above view as the observations on the seizure attacks were made by the patient's relatives before any knowledge of the peculiar nature of the difficulty was thought of. The point I wish to make here is that in this case of psychoneurosis all the classic symptoms of the comitial disorder, that of epilepsy, were in evidence, even to that of tongue-biting and bladder incontinence. There were eight attacks of this character in this girl of twenty-five dating from August, 1904, to April, 1909. The diagnosis of epilepsy during the time of the attacks was entertained by at least three competent observers, and yet on mental analysis (not even yet complete, for the case history runs on like a Chinese drama) the attacks were all undoubtedly psychogenic in origin and not truly epileptic. The patient has been entirely free from any attacks or episodes whatever. No drug medication, of course, was used. This case showed none of the epileptic stigma in character, voice, disposition, intelligence, etc., and on the absence of these defects a diagnosis of the psychogenic nature of the different attacks was made and psychonalysis was undertaken. The case was easy of diagnosis compared with the one mentioned earlier in this paper, in which an association of the two disorders was in evidence. The lesson is plain, but a diagnosis of epilepsy without the mental stigma is impossible, especially when based upon any degree of combinations of symptoms of episodes or attacks themselves.

Psychoneurotic episodes are differentiated from epilepsy in that the former are disorders of association of ideas, have greater constancy, often prevented by hypnosis in suggestible individuals, and the same may be displaced or prevented by purely psychic treatment while in the majority of instances they are uninfluenced by sedatives. The amnesic episodes are purely functional in character as intelligence tests show none of the mental stigma of the genuine disease. Lastly, psychanalysis proves the psychogenic episodes are closely related to a wealth of pathogenic and dissociated and subconscious ideation. The treatment of these psychogenic attacks is by psychanalysis by the Freudian method. In my experience the completeness of cure of the psychic episodes is not so prompt or permanent in these association disorders as in the uncomplicated psychoneuroses. The sexual element in the defective ideation, too, is not so marked. It must be admitted in the majority of my cases that a bad heredity plays a very prominent rôle both for the epilepsy and its association disorder or psychic episodes. For the past two years I have attempted to do a psychanalysis on all my so-called genuine uncomplicated epilepsies with considerable success. It has proven of considerable advantage in these cases by clearing away some of the objectionable phases of the post-epileptic automatism. The treatment is an excellent accessory to the hygienic method, and appears to do good in somewhat the same way as it does in other weakened and unstable individuals and as a reinforcement of good moral characteristics as in the average person. However, a point of great value should be mentioned here that in the cured or arrested cases of genuine epilepsy the psychanalytic treatment has greatly helped in maintaining the proper standard of after living and care of the re-

covered state, a signal aid not otherwise possible.

It may be asked pertinently, how may one make a differential diagnosis between the psychogenetic convulsions and those of genuine epilepsy before the epilepsy has had time to develop the degenerative and mental stigma of the true disease? Such a question is robbed of its importance in greater part if one remembers that in beginning epilepsy with no accurately observed fits to assist one, we naturally turn to the analysis of the basic subsoil upon which this disorder almost invariably develops, namely, its heredity, the individual peculiarity of temperament, personality defect, the speech and conduct and defects in mental development. Too much in the past, both by relatives and physicians, has been charged to the mental deterioration of the disease itself, and too little to the constitutional inferiority type from which the disease springs. I venture to state that the peculiar constitutional defect of epileptics is usually in evidence in every genuine epileptic for years antedating the seizure history. From such a statement one may rightly infer that the opinion regarding diagnosis, prognosis, and treatment in any given case should be based upon the mental and physical make-up of the epileptics themselves, and not upon the character and frequency of fits. We cannot too thoroughly discourage the present tendency of considering the fit as the central figure of treatment in epilepsy, however apparently important, the psychic episode in the psychogenetic convulsions which resemble the epileptic fit may be and about which one naturally centers his attention in treating the latter affection. I believe the broadest biological conception of treating even the psychoneuroses will ultimately prevail over narrower views still sometimes taken.

84 East Fifty-sixth Street.

SOME REASONS WHY THE GENERAL PRACTITIONER DOES NOT MORE FREQUENTLY RECOGNIZE PULMONARY TUBERCULOSIS IN ITS INCIPIENCY.*

By GEORGE WILLIAM BEACH, M.D.,

SUPERINTENDENT, STATE SANATORIUM FOR CONSUMPTIVES, STATE SANATORIUM, CASS COUNTY, MINN.

There may be those who at the outset will ask, possibly with some indignation, that they be shown, first of all, that it is an established fact that physicians are remiss in diagnosing incipient disease. And no one can deny that at first thought it does seem unlikely that present day general practitioners should be delinquent in discovering the presence of a remarkably well-known disease, and especially one that is so frequently encountered by all of us.

To comply with this request, one could go back a good many years and, if need be, over a vast territory. However, it seems preferable to gather proofs from recent events in nearby territory, and I have, therefore, collected some pertinent data from the records of the State Sanatorium for the Treatment of Tuberculosis at Oakdale during the period extending from May 1, 1911, to April 30, 1912. These statistics concern Iowa patients sent to Oakdale for treatment by Iowa physicians. Let me say right here that we must not forget that no State demands a higher standard of medical education than Iowa, and that very many States require far less. So if I prove that my contention, *i.e.* that physicians are remiss in diagnosing incipient disease, is true for the State of Iowa, it may certainly be admitted that it is also true for other States, if not for other countries.

*Read before the Johnson County Medical Society, Iowa City, Iowa, June 5, 1912.

Let us then examine the records of this institution as they apply to the diagnosis of incipient disease made by physicians who saw the patients shortly prior to their admission. In the Oakdale Sanatorium the routine for admission includes the following: An applicant, among other requirements, must send a certificate signed by a physician of his locality, stating that he has tuberculosis and describing the extent of the pulmonary lesion. To describe this extent the physician is requested to use the well-known nomenclature of Incipient, Moderately Advanced, and Far Advanced, and while it is probable that, as a rule, the general practitioner has a fair idea of the definitions of these three terms, the following explanations are printed on the page opposite the one where he registers his opinion regarding the condition of the patient:

"Incipient (favorable): Slight initial lesion in the form of infiltration limited to the apex or a small part of one lobe. No tuberculous complications. Slight or no constitutional symptoms (particularly including gastric or intestinal disturbance or rapid loss of weight). Slight or no elevation of temperature or acceleration of pulse at any time during the twenty-four hours, especially after rest. Expectoration usually small in amount or absent. Tubercle bacilli may be present or absent.

"Moderately Advanced: No marked impairment of function either local or constitutional. Localized consolidation moderate in extent with little or no evidence of destruction of tissue. No disseminated fibroid deposits. No serious complications.

"Far Advanced: Marked impairment of function, local and constitutional. Localized consolidation intense. Or disseminated areas of softening. Or serious complications."

It is certainly necessary that there be precise definitions for such important terms and it would seem that there is very little in the above that might be considered in any way arbitrary.

Of the 260 patients admitted to Oakdale between May 1, 1911, and April 30, 1912, there were 96 whose admission blanks had not been filled in as to the extent or gravity of the lesions. Of the remaining 164, 90 were diagnosed by the general practitioner as incipients. From the findings of examination on admission the sanatorium physicians classified these 90 cases as follows: Incipient, *i.e.* confirming the diagnosis of the general practitioner, 23 or 25.56 per cent.; moderately advanced, 46 or 51.11 per cent.; far advanced, 21 or 23.33 per cent.

Sixty-nine were diagnosed by the general practitioner as moderately advanced. From findings of examination on admission, the sanatorium physician classified these 69 cases as follows:

Incipient, 2 or 2.90 per cent.; moderately advanced, *i.e.* confirming the diagnosis of the general practitioner, 32 or 46.38 per cent.; far advanced, 35 or 50.72 per cent.

Five were diagnosed by the general practitioner as far advanced. From findings of examination on admission the sanatorium physician classified these 5 cases as follows:

Incipient, 0; moderately advanced, 0; far advanced, *i.e.* confirming the diagnosis of the general practitioner, 5 or 100 per cent.

It is a dangerous matter to draw many conclu-

sions from statistics, especially when these latter relate to only one sanatorium and cover a comparatively short period, but from what I know of several institutions for the treatment of tuberculosis, I feel no hesitation in saying that experiences like those at Oakdale are not unusual, and that it is safe to say that the relative acquaintance of the general practitioner with the incipient, moderately advanced, and far advanced periods of tuberculosis may be more or less approximately expressed by the percentages of correct diagnoses as set forth in the above figures, viz., 25 for incipient, 45 for moderately advanced, and 100 for far advanced. In other words, he has much less knowledge of the signs of early disease than he has of those which might almost belong to post-mortem findings.

If, then, we have been able to demonstrate that it is at least not infrequent for the general practitioner to show a lack of acquaintance with incipient disease and confound far advanced cases with early ones, it also appears from our records that he has had ample time in many cases to reach a decision before he has finally diagnosed a most unfavorable period as an early one. One would almost like to think that such blanks were filled out by physicians who knew better, but whose overzealousness for their patient caused them to state the case mildly in the hope that the patient's application for admission would not be refused. But surely there are very few medical men who would put themselves on record as being guilty of gross inaccuracies in their diagnoses, and certainly it would be most uncomplimentary to the sanatorium physcians to take it for granted that they would not be sure to detect such obvious errors. Moreover, in not a few cases the physicians who reported moderately advanced and far advanced cases as incipient had treated their patients for months and even for years before making a diagnosis of tuberculosis.

Let it be well understood at the very outset that if it has been established that the general practitioner fails at times to diagnose early tuberculosis, it is neither in my intention nor would it be in my power to prove that he alone is to blame. It is the aim of this paper to place the blame for this delinquency where, in the writer's opinion, it seems to belong, and it will shortly be shown that this blame cannot by any means be placed at the door of the general practitioner alone. Of course, it is impossible for everyone to see such a condition in the same light, but if it is admitted that the diagnosis of early disease is not made as often as it should be, it is not surprising that there are many reasons for it.

The subject, in fact, is of vital interest to all. The general practitioner—hard working, underpaid, assailed by the interested sophistries of quacks and faddists, expected even by some of his most intelligent patients to know more than mortal man can aspire to, and distrusted by a few in every community as incapacitated by his very profession from knowing as much as an ordinary man—the general practitioner, I say, whose very generosity is misinterpreted and often turned against him, should wish to show himself capable of meeting a common problem—that of detecting a most frequent disease.

The patient, naturally, is the one who, in a way, is most vitally concerned, for it is often his life that is in the balance. If detected early, his disease has many times more chances of being permanently cured than it has when allowed to go unrecognized until moderately advanced or far advanced.

The non-tuberculous public has an interest equal, if not identical with, that of the patient, viz., that of being protected against the infection that is sure to follow in case the incipient of today is allowed to become the far advanced of tomorrow.

The teachers in our medical schools certainly desire to show themselves worthy of the confidence of the coming generation of physicians, who will make them arbiters of that important period of their lives in which they aspire to lay the foundations for an honest success, from a scientific and moral point of view at least. Finally, sanatorium physicians have helped more than is generally recognized to gather facts that have added to the sum total of our knowledge of this subject which we have seen to be of universal importance, and they are naturally interested in having patients sent them that have a reasonable chance of being benefited by institutional treatment.

At this point it will not be amiss to call attention to the fact that the responsibility of early diagnosis rests, in a large measure, and bids fair to always rest, with the general practitioner, inasmuch as those who specialize in tuberculosis are too few in number and too unevenly scattered throughout the country. Nor does the present warrant us in thinking that there will be any marked shifting of this responsibility in the future. Having endeavored to show that the general practitioner does not diagnosticate incipient tuberculosis promptly, we will first review the phases of the problem in which the blame may be justly attributed to him, passing on to the shortcomings of the general public and those of our medical schools. Lastly, we will consider the part played by the sanatorium physician.

The Faults That Lie with the General Practitioner.—He often fails to consider the possibility of incipient disease when confronted with such signs as slight loss of weight or strength which cannot be attributed to another cause, a persistent even if slight cough, slow recovery from influenza, change of character as manifested most frequently by irritability or indifference to matters that were previously of great interest to the patient.

He often fails to consider the probability, not to say the quasicertitude, of tuberculosis when consulted for a pleurisy or an hemoptysis.

Occasionally he is grievously at fault in turning his back on the fact that the patient suspects tuberculosis and desires a thorough examination.

There seem to be a few general practitioners who have no conception of pulmonary tuberculosis that is not far advanced.

It is not uncommon for the general practitioner to fail to have his patient strip to the waist for a chest examination, or to take too little time for an examination that often requires much mental concentration, honest reflection, and the use of three special senses—sight, hearing, and touch.

He sometimes omits to demand a second or a third examination when the findings of the first leave him in uncertainty. In this case he may put himself on record as denying, in the face of ample proof to the contrary, the existence of a very frequent disease.

He sometimes attaches an unreasonable and absolutely unfounded faith to the negative findings of the bacteriologist. Such men are, we all trust, less common than a decade ago, but they are still to be found. When a man discredits the diagnosis of a confrère or disregards physical signs and clin-

ical symptoms, because of negative findings of a sputum examination—such a man (I weigh my words well) may have a legal right to practise medicine, but he shows himself ignorant of what competent teachers throughout the world have unanimously agreed upon.

There are a few who make a diagnosis of incipient disease and keep it to themselves, fearing to have it contradicted by another physician who knows less than they do. Counting on the possibility of such cases recovering spontaneously, and fearing, above all, that they will lose with the dear public who nearly always side with the man whose words dispel dread, such general practitioners choose to be opportunists, confident that, at the worst, they will be able to assert to sympathetic ears that the onset of the disease was at a date later than their reassuring words.

The Faults That Lie with the Public.—The patient often expects the physician to arrive at a decision after a single and sometimes necessarily incomplete examination. Such patients will always listen less attentively to the conscientious, scientific man who takes time to collect his evidence and to weigh it carefully before giving an opinion than they will listen to the man who boldly asserts with glib assurance what he knows the patient desires to hear. One of the most common characteristics of the quack is to find out what the patient hopes to hear and then to hand it out to him. There are many today who complain that physicians have been remiss in not warning their patients of incipient tuberculosis. Such persons should be told that the public is very apt to get what it asks for. When a physician has lost several influential patients because he has told them they were tuberculous, he must have great moral courage and some financial independence if he persists in telling his patients the truth.

Furthermore, the public often refuses to compensate adequately the man who makes careful examinations and who gives his opinion honestly and fearlessly. If the sums of money paid by those suffering from early tuberculosis for patent medicines, fads, and confidence schemes of all kinds could be handed over to the general practitioner and he could be given an opportunity to see the patients and examine them, with the assurance that they would respect his decisions, I, for one, am convinced that more early diagnoses would be made and a large number of cases hindered from becoming progressive. That day will come only when the great public changes its present attitude of credulity towards the organized graft of nostrum manufacturers and all kinds of healers and ceases to look upon the disinterested efforts of scientific men with scepticism and distrust. Perhaps the layman would not persist in this attitude if he would reflect that the advances made in public hygiene and general prophylaxis have nearly all been made by the members of a profession which had only to lose, from a financial point of view, by consequent improvements in living conditions. The curious fact remains to be accounted for why the medical profession does not possess that confidence of the public to which it is entitled and of which it has shown itself worthy in a thousand ways.

The Faults That Lie with Many of Our Medical Schools.—The men who direct the policies of our medical schools are in a position to understand the needs of the present time and even, to some extent, those of the near future, when it is a question of practical instruction on subjects that are year by year becoming more important. The day is near when a medical school not having a chair on tuberculosis will be considered behind the times, and it is unfortunate that this fact has not been recognized sooner by those who preside over such important destinies.

It may be contended by some that the subject of tuberculosis may be treated quite adequately by professors of general medicine, but the facts do not support this contention. Students are being graduated year after year who cannot diagnose incipient tuberculosis. What is equally unfortunate is that they are often not even taught where to turn if they wish to make up this deficiency. The truth is that the methods employed in detecting early disease and in caring for tuberculosis in its various stages positively require expert training. The professor of general medicine cannot give it. This subject has developed too rapidly for him to follow it without neglecting his already vast domain. The professor of surgery admits the need of a chair of genitourinary diseases, of orthopedic surgery, etc. The occupant of the chair on clinical medicine knows that there must be a department on cutaneous diseases and one that concentrates vast energies on syphilis. Yet he takes no steps for special instruction to be given in the disease that carries off approximately one-seventh of mankind. For this reason, no special efforts being made to attract clinical material, such as an out-consultation or dispensary for pulmonary diseases, the students are not furnished with the necessary patients to be examined and followed up. A few far advanced cases sometimes filter in but are regarded with fear by the students, nurses, and employees and are scarcely made welcome.

The efforts of the average faculty are at present wholly inadequate to teach the undergraduate what he needs to know, not only about early diagnostic methods, but about the up-to-date management of the disease in general. Tuberculosis is today a subject as vast in itself as medicine taken as a whole was formerly. To be a well-equipped physician, one must know, at the very start, how to recognize the most common and one of the most lethal diseases of the present day. I am convinced that this is often not the case at present, and in support of my contention refer again to the statistics of the State Sanatorium at Oakdale during the past twelve months.

The medical department of the Iowa State University has taken some steps to remedy this situation and is unusually fortunate in having a sanatorium in close proximity. Several other medical schools throughout this country have made some efforts along the same line but the sum total of such endeavors is far below what is needed.

Finally, we come to consider in what measure sanatorium physicians are responsible for the fact that incipient disease often passes unrecognized by the general practitioner. One reason is that they take it for granted that many physicians not only have but little practical knowledge of tuberculosis, but also that they will never try to obtain any. Another reason is that they have often blamed the general practitioner as alone responsible for this deficiency, overlooking the fact that he has often been handicapped from the start by insufficient training as an undergraduate, and forgetting that in spite of his good intentions, there is not much chance for him to improve himself in this department today

unless he gives up more time and money than the average man can afford.

In general, the sanatorium physician has been obliged to teach himself much that he has learned in his special work and perhaps he consequently takes it for granted that there is no more scientific way of imparting a knowledge of tuberculosis. As sanatorium physicians are necessarily isolated and widely scattered, in addition to being hard-working men, they have not done all that they might have accomplished in devising and advocating means for giving students a better-balanced education and for giving physicians practical post-graduate courses. Lectures on tuberculosis, whether intended for undergraduates or for general practitioners, should not be given by theorists, but by men of practical experience, who are able to set forth lucidly and fully what combinations of signs and symptoms they depend upon most for diagnosing early tuberculosis and how best these signs and symptoms may be discovered. When the day comes that this special knowledge can be imparted systematically, both student and general practitioner will show themselves eager to avail themselves of it.

Having briefly enumerated the shortcomings of the general practitioner, the public, the medical schools, and the sanatorium physician and suggested remedies where they were not too obvious, but one thing remains to be done, viz., to consider the outlook and to conjecture what changes are likely—whether, for example, sanatorium physicians will endeavor to have chairs created whose occupants will teach adequately what is incompletely taught at present about tuberculosis, whether faculties will act upon such suggestions, whether the general practitioner will become more adept in handling tuberculosis, and, finally, whether the public will stop listening to frauds and lend an ear to the teachings of science.

As I see it tonight, the future is both hopeful and gloomy. It is hopeful in that the general practitioner is already manifesting in many ways a desire to perfect himself in early diagnosis. He has improved in this respect during the past five years and we have reason to believe that he will continue in his efforts to surmount, as in the past, one difficulty after another. It seems more than probable that the sanatorium physician may be counted upon to do his part and assist, as much as his busy life will allow, in the attainment of what is so vital to the interests of all.

It may be that the medical schools will move a little more slowly than we would like, but they too will rise above the influence of tradition and conservatism, even as they have done in the past. Some of them have begun to recognize the importance of a more practical study of tuberculosis and their progress may be more rapid than anyone can foresee.

But the layman—what of him? Can we count upon his cooperation in coming early for an examination, in accepting a diagnosis that it is painful for him to hear? It is from this point of view that the future seems most sombre. It is not because the layman is incorrigible, or incapable of learning better, or is not alert to the importance of the tuberculosis problem, but because of conditions that he cannot control. The immediate future offers but little hope of amelioration, for there is one cause that militates especially against the early diagnosis of this disease. I have kept it for the last, partly because it is the chief cause, and partly because it is the least amenable to medical science and to physicians as such. This cause for the frequency with which an early diagnosis is not made would remain if every sanatorium physician divided his time between his present institutional work and teaching methods for the early recognition and management of the disease. It would stay with us, obstinate and immovable, if every general practitioner should become an expert in tuberculosis. It would practically be uninfluenced if there were ten times the number of state sanatoria and if every county and large municipality were provided with a hospital for this disease alone and even if all beds were free.

The economic conditions in which a large proportion of our population live are such that even a short illness entails hardship and that an incapacity for work that runs into months spells despair. In dispensary work one frequently sees victims of far advanced disease consult a physician for the first time. They admit that they have had a troublesome cough for months or even years and that they have been getting weaker for a long time. But they have been working steadily on and proudly tell you that this is their first half-day off to see a doctor. If pressed with questions they will often admit that they have tried different patent medicines, upon which the physician with more or less tact blames them for their stupidity in not coming at once to a dispensary, whence they might have been sent to a sanatorium. The patient listens, sometimes respectfully, sometimes sullenly, but in his heart of hearts he feels confident even then that he was right in trying the patent medicine. It is true that the latter did not cure him, or even do him any good, but maybe (he argues) that was only his bad luck. On the other hand their advertising matter promised to cure him without loss of work, and the physician admits that he could not have done this. In other words, we find that sanatorium treatment or the rest cure at home are to many patients ghastly absurdities when it is considered that they could not afford to make use of them, even if they were free. For usually there are little children, the aged, or other victims of the disease, who depend upon the patient's earning power from day to day. Slowly he feels the grip of his foe tightening upon him. Yet a martyr to cruel social conditions, he works on and on until his hands lose their cunning, until his emaciated limbs refuse to carry him any longer to his work and until at last his mind is mercifully blunted by despair.

It is the experience in the Iowa institution, as in most others of similar character, that many patients leave against advice, long before they should, and return to the labor and the living conditions that were the causes of their original downfall. Some go away silent, others explain that their families have used up their small savings and are in need of the patient's wages, and nearly always the foreseen happens and the disease progresses with renewed activity. The public know our remedies: Sanatorium treatment and rest cure at home or in day-camps, and the public know also what we act as if we did not know, viz., that a large percentage of our fellows are as unable to follow the treatment that we prescribe as they would be if we ordered them to engage first-cabin passage to Europe and to take a three months' cure at Baden-Baden or at Aix-les-Bains.

This is the gloomy side of the question, because we see no means at present that can bring about any marked amelioration. Will the remedy come in the

form of a more equitable remuneration for the producers of our wealth? Or will it be through the creation of a government insurance against illness and accident, such as is proving successful today in Germany? It is impossible to say at the present time, but the question cannot fail to be of deep interest to the physician who longs to allay injustice and to relieve suffering that he is unable to reach at the present time.

CRITICISM OF ORTHODOX INTERPRETATIONS OF OCCUPATIONAL CRAMP-NEUROSIS AND THE TERM NEUROSIS.*

By TOM A. WILLIAMS, M.B., C.M. (Edin.).

WASHINGTON, D. C.

FORMERLY CORRESPONDING MEMBER PARIS SOCIETIES OF NEUROLOGY AND OF PSYCHOLOGY, ETC.; NEUROLOGIST TO EPIPHANY DISPENSARY.

Occupation cramp has been explained as a fatigue —"neurosis" of muscles, of nerves, and finally of centers. But as it is not repaired by rest, how can this be? Besides, the same act can be done with other implements, *e.g.* cases in which the individual can write with pencil and not with ink. It is far-fetched to suppose that "neurosis" can shift from one to another group of muscles or their centers. The term "neurosis" often explains nothing but the interpreter's ignorance of the process at work. Besides, "neurosis" does not last for years without further impairment shown by additional symptoms; while psychosis, that is ideational and emotional habitus, lasts a lifetime unless modified by therapeutic stimuli from without or within.

Therefore, occupational dyskinesia is purely psychogenetic, *i.e.* produced by an idea or its attendant emotion. A good example is the case of a telegrapher whose "hand-cramp" which had begun to show itself on raising his cup occurred only when he thought of it, and whose telegrapher's cramp began because of fear of losing his position as a stock broker's operator. Physical symptoms are not the cause of cramp in themselves, but may furnish the initial motive from which comes the notion of incapacity or of perverted movements. Such physical disabilities are frequently perpetuated into psychical ones, *e.g.*

An Incapacitating Hysteria Engrafted Upon a Hematomyelia of the Right Hand and Arm Segments.—A man of 20, apprentice mechanist since the age of 16, was seen with Drs. Conklin and Lewis Taylor in June, 1911. Two years before he had dived to the bottom of a creek. The concussion which ensued kept him in bed with severe headache and unable to move for three days. Urinary incontinence lasted one day. He vomited at first. For nearly a year he was unable to walk without severe staggering and his speech had been very difficult and still remained slow. He complained also of great sleepiness and difficulty in holding his water; so that he was quite unable to go to work, more especially as the right hand was partly wasted and paralyzed, and he feared that what he knew to be an organic nervous disease might be aggravated by exertion. There was loss of sexual power. The boy was normal with the exception of the following abnormalities: Reflexes—The right plantar was absent, but there was inversion of the foot on stroking the sole. The right triceps was diminished. Motility.—There was weakness of the extensors of the third, fourth, and fifth digits of the right hand to an extreme degree. The opposition of the thumb was not quite weak. The grasp of the hand and flexion of the wrist were relatively stronger. The abduction of the wrist was strong; the abduction of the fingers was quite weak. There was no other distinguishable weakness of the forearm. Sensibility.—He complained of a perpetual tingling down the right leg, which occurred with each beat of the heart, night and day, except during sleep. But there was no difference on the two sides in the perception of coolness and warmth; and the sense of attitudes was now normal, although he stated that for two months he was unable to recognize the position of his limbs. But I could not satisfy myself that he really felt less intensely, as he alleged, on the right leg when stimulated by the tuning fork and the point of a pin; so that this hypoesthesia might have been suggested during my examination. A suspicion of its psychogenic nature was corroborated when I found that although he declared he would sway when he closed his eyes, he did not actually do so when his balance was deprived of the assistance of his vision while I pretended to be examining the eyes. Diagnosis and Prognosis.—The abnormalities of the reflexes, motility and subjective sensibility, as well as the slow speech and difficult retention are due to organic changes, very probably hematomyelic, resulting from the blow on the head in diving. They are not amenable to treatment; but they are by no means incapacitating, for even the grasp of the right hand was fair and the right thumb could be opposed so that he could handle a tool. The prognosis as to efficiency was therefore good. Treatment.—Accordingly he was explained the organic nature of part of his difficulty; he was also told that the disease was not progressive, and would not be exaggerated by work, which would, on the

*This is not the place to discuss the significance of the term neurosis as contrasted with the term psychosis. It is unfortunate that most medical writers use the former term in speaking of the latter condition, as well as when talking of neurosis in the true sense, that is to say, an abnormal functioning of a neuronal system not arising from ascertainable structural defect. A disorder of a neuronal system is manifested by symptoms arranged topographically and applying to all the reactions dependent upon the neuronal system which is diseased. When a disorder extends only to particular acts, while other acts performed by the same neurones possess normal integrity, it is a misnomer to apply to it the term neurosis; for the disharmony occurs only in virtue of a perversion of the reactions of a system of governing neurones at a higher level, which are combined not in topographical symptoms, but by a functional interplay exceedingly labile in nature and dependent upon extraneous stimuli which can alter the order, extent, and intensity of the respective reactions innumerably, while the neurones in themselves remain perfectly healthy and susceptible of the reactions we call normal, provided that the order of their discharge can be regulated by teleologically appropriate stimuli. To such types of reaction we give the name psychic; and these, expressed in psychological terms, have nothing to do with those applicable to the reactions of healthy nerve as studied in the physiological laboratory, or of diseased nerve, as studied at the bedside. An example will make this clear. A wink may be a simple reflex, a purely neuronal phenomenon, the disorder of which may be termed a neurosis. It may, on the other hand, be the response to the complicated series of stored stimuli known as memories set into action by stimuli known as sensations and perceptions, and demanding for their orderly expression not merely one locality of the cerebrum, but the whole expanse of the cortex, both of the great and little brain. The function of teleological adaptation which eventuates in this second type of wink, we call psychological; and the disorder of such a function is named psychosis, the term neurosis being entirely inapplicable. (It is unfortunate that psychiatrists have confined the word psychosis to what they are pleased to call the true mental alienation, but this is no reason for perpetuating a usage of so confusing a nature.)

contrary, improve him in every way, and very likely rid him of his heavy feelings. I recommended him therefore to begin work and behave as if he were quite well. This he did with the result that he continued at work, and is in excellent condition at the time of writing, six months later.

No commentary should be needed to show that this boy's idleness proceeded not from actual disability, but from the ideas which he and his people held regarding his condition. He was the victim of a false fixed idea that he was gravely ill, and this suggestion was the cause of his incapacity when I saw him, while the organic destruction of the central nervous system had at that time no direct significance in that respect.

Case II.—Hysterical Habit Spasm After Appendicitis.—A single woman of 26 years was seen in 1911 with Dr. I. S. Stone. She had had a dull pain since an attack of appendicitis six years before, but had gone on working in her dairy in spite of it until it wore her out. After this a spasm of the iliac muscles supervened. She declared herself "nervous because I suffered so intensely." She would start at noises, and could not sleep after excitement, so that she gave up visiting her friends. The only neurological signs were the hyperesthesia and spasmodicity in the right iliac region. Treatment.—I taught her to inhibit the spasm by drill, and assured her that the hyperesthesia would disappear as a result of the operation which Dr. Stone had performed three weeks before. But as the spasm had become a habit, and gave rise to pain by stretching the muscles, she would have to learn to control it by means of a series of exercises in muscular inhibition which I showed her how to perform. She made quick progress at first, but relapsed on account of a physical depression, which I found to be due to disordered metabolism from the egg and milk diet which her recumbent position did not enable her to metabolize. When this was removed psychomotor discipline was again persevered with, and she returned home almost well two weeks after I first saw her.

These examples of hysteria, the suggestion for which arose from an antecedent physical condition, are paralleled in a comprehensible and simple fashion in the traumatized person whose back or shoulder does not recover from a blow, perhaps quite insignificant except in the patient's mind.* Still more simple is the example of the petulant child or woman who nurses and magnifies a trifling hurt into a serious injury because of a morbid way of regarding her privileges. All these symptoms have been perpetuated by a false notion concerning their origin. Even when a local or general physical state is recovered from, as by rest or metabolic regulation and good nutrition, cramp or a professional disability persists. This fact is too well known to need insistence. Therefore the physical state is not the cause of the cramp. Its genesis must be searched for in a psychological mechanism. I believe that cases I have reported† clearly demonstrate such psychogenesis. The therapeutic test is a further proof.

Physical treatment does not cure the cramp; but it makes easier the patient's effort, by putting him into the most favorable state of physical vigor for the mental exertion needed in giving the close attention required to wean himself from a bad habit and reeducate his special psychomotor activities into a good habit. That is, a sequence of energetic discharges of a psychomotor area which have by association acquired an order not desirable, is changed by intelligent practice into a sequence which conforms to the order desired. Coordination is then substituted for what is incoordinate as far as practical accomplishment is concerned. It is the reacquisition of an impaired or lost efficiency, not due to a fault of the machine, but to an error in the order in which its parts are put in action. It is the directing force which needs to be scientifically applied, and not the physical mechanism which requires repair.

The treatment based upon these principles is one of psychomotor discipline attendant upon the accurate ascertaining of the mechanism of the dyskinesia, always essentially psychogenetic. The technique is described in the current number of the *Journal of Abnormal Psychology* (Boston); also in the monograph in which the cases are described.

1758 K Street.

*See author's discussion of this mechanism, International Congress on Industrial Accidents, Rome, 1909, "The Traumatic Neurosis and Babinski's Conception of Hysteria"; also in Medical Record, May, 1909; also *Journal of Abnormal Psychology*, June, 1910.

†"Studies of Occupational Cramp," *Journal für Psychologie und Neurologie* (Brodman), Leipzig, 1911-12, vol. 19; see also *Monthly Cyclopedia*, 1911, preliminary note; *New York Medical Journal*, 1911; *Boston Medical Journal*, 1912.

EXPERIMENTAL STUDIES OF THE ACTION OF ELECTRICAL CAUTERIZATION ON NEOPLASMS.*

By J. BENTLEY SQUIER, M.D.

NEW YORK.

PROFESSOR OF GENITOURINARY SURGERY, NEW YORK POST-GRADUATE MEDICAL SCHOOL.

Indications for the use and the therapeutic value of the Oudin high frequency current, in the treatment of benign papillomata of the bladder have been established.

The studies which form the basis of this communication have to deal with the action of the Oudin or monopolar, and the d'Arsonval or bipolar current upon malignant growths of the bladder and otherwise. The work was undertaken in consequence of an unusual experience, where the use of the d'Arsonval current caused the disappearance of an extensive vesical carcinoma. The details of which are as follows:

A gentleman fifty years of age consulted me on February 4, 1912. One year previously, while in good health, frequency of urination had developed. Shortly afterwards blood appeared in the urine, associated with dysuria. The hematuria, intermittent at first, became continuous. In December, 1911, he placed himself under the care of an able urologist who cystoscoped the patient and discovered a large tumor occupying the right side of the bladder. This surgeon suspected malignancy, but decided to apply cystoscopic fulguration, if only to check the profuse hematuria. A number of attempts were made, but the excessive bleeding so interfered with the proper application of the treatment that it was discontinued.

It was shortly after this that the patient came under my care. He had now become greatly debilitated from the continuous loss of blood. He was voiding urine the color of mahogany and operation was decided upon, if only to stop the

*Read at the Twenty-sixth Annual Meeting of the American Association of Genito-Urinary Surgeons, Philadelphia, June 8, 1912.

bleeding from the bladder. To digress a moment, some time before in conversation with Dr. J. F. McCarthy, instructor in my department at the New York Post-Graduate Medical School, he had suggested the use of the d'Arsonval or bipolar electrical spark as a means for checking hemorrhage in such a case, and the possibility of obtaining a more deep-seated action upon the tumor than with the Oudin spark.

It appeared that here was a justifiable opportunity to put the suggestion to the test. On February 6, under ether anesthesia, the bladder was opened suprapubically. The fundus was found to be widely involved by a growth as was also the trigone in the region of the ureteral openings. The growth seemed limited to the mucous membrane in the fundal involvement, while in the trigone the deeper structures were invaded. The prostate was not involved.

The mass of tumor occupying the trigone was shelled out and the more superficial growth of the fundus curetted down to the bladder muscle. The bipolar spark was then applied to the interior of the bladder wherever any growth had been.

The technique of its administration consisted in placing the patient in a high Trendelenburg position, exposing the interior of the bladder by wide retractors, and illuminating it with a tantalum lamp. One electrode, a large flat plate, was placed beneath the buttocks and the spark was produced by inserting the other electrode, a cystoscopic fulguration wire, into the bladder through the suprapubic opening.

All hemorrhage at once ceased upon application of the spark. The bladder and suprapubic wounds were closed around tubular drains. Considering the condition of the patient before operation, it was remarked how well he had stood the operation.

Histological Examination of the Tumor.—Microscopic examination shows two types of carcinoma—one in which there are small aveoli of carcinoma cells, and the other, the predominating type, in which there are papillary tufts clothed with a mass of cells of cylindrical and flattened variety. Diagnosis: Papillary carcinoma.

The post-operative period developed many interesting features. Six hours after operation, the drainage tubes becoming occluded, the patient passed urine by urethra absolutely free from blood. This was the first time for over six months that hematuria had been absent. Convalescence progressed favorably and at the end of five weeks the abdominal wounds were healed. He was passing urine free from blood and there had been no return of the hematuria since operation. Seven weeks after operation sudden death occurred from pulmonary embolism.

The bladder was removed after death and sent to the pathologist for serial section and minute study. There was no microscopical evidence of carcinoma either in fundus or trigone.

Histological reports on the removed bladder are here given in full: Specimen: Bladder. Examination reported March 25, 1912. Microscopic examination: Certain portions of the bladder wall show total absence of mucous membrane, the submucous coat being very rich in vessels, and being diffusely inflamed. Evidently there has been some post-mortem degeneration, for the tissue takes the stain poorly.

Other sections show inflammatory involvement of fat and of the serous coat; total absence of the mucosa, the submucosa being necrotic. Still other sections which are better preserved also are devoid of mucous membrane, there being a very vascular submucosa with evidence of chronic inflammation. A portion of the bladder wall, in all probability taken from the region of the sphincter or of the prostatic urethra, shows intense postmortem desquamation of cells, marked atheroma, calcification, and endarteritis of some of the larger vessels. There are islands of cells of probably desquamated epithelium (not neoplastic). No definite evidence of carcinoma.

Examination reported, March 27, 1912. Further study of sections from bladder show marked necrosis of the inner vesical layers. Inflammation without any trace of carcinoma.

Examination reported, April 1, 1912. Further material from bladder specimen: Microscopic examination of the wall of the bladder shows extensive necrosis of the submucous layers, absence of the mucous and marked inflammation of the submucous coat. There is no vestige or the slightest evidence of the presence of carcinoma.

A few days before operating upon the patient whose history has just been related, I had opened a patient's bladder for carcinoma, instituting suprapubic drainage, but making no effort to remove the tumor.

Believing that I now had at least a sure means of controlling hemorrhage, I offered to make an attempt to remove the tumor, to which the patient acquiesced. This patient was sixty-five years of age, the hematuria, although having been present for eight months, had not produced so grave an anemia as in the preceding case.

The second operation was performed on February 8 and a tumor about two by three inches in size excised. It was situated around the left ureteral opening extending up the fundus. The lower end of the ureter was firmly attached to the tumor and it was necessary to cut the ureter away from the tumor and transplant it.

The cavity remaining after excision of the tumor was thoroughly cauterized by the bipolar spark.

The patient recovered from operation without incident and the post-operative period was free from hematuria. Up to the time of his death, three months later when he succumbed to a rapid growing carcinosis, he had had no recurrence of hematuria. The recurrence of the carcinoma was in the intestines, omentum and liver.

This method of treatment has been employed in five other instances; a large papilloma was removed by suprapubic incision and the base sparked; two cases of prostatic carcinoma, in which the cavities made by removal of the prostates have been cauterized by sparking; two cases of vesical carcinoma have been sparked through suprapubic incision, without any attempt at excision.

These cases are too recent to draw any conclusions from, but will be reported in a further communication. In all these cases, however, one is impressed by the absence of any amount of bleeding after operation, and to the comparative small shock shown by the patient, even though they have been subjected to a very considerable period of anesthesia.

The experimental work on animals has been conducted at the laboratories of Dr. Francis Carter Wood, Director of the Crocker Cancer Research, who placed his facilities at my disposal.

The following is a brief abstract of some features of the investigation.

The experiments have been carried out on tumor bearing large white rats, and though the series is still incomplete the results are significant. The rats had been inoculated subcutaneously with either a carcinoma of high virulence or a sarcoma. Both of these tumors as a result of repeated transfers are now so virulent for rats that practically all inoculations are successful.

The first series consisted of five animals, of which two had sarcomatous tumors, one measuring 1.5, the other 3 cm. in diameter. The growth was in the subcutaneous tissue of the abdominal wall. The other three rats had carcinomatous tumors, two measuring 1 cm. each, and the third 1.5 cm. in diameter. These tumors were also loose in the subcutaneous tissue and could be freely moved about. The tumors were thoroughly fulgurated with bipolar electrodes, the distance between the poles being the diameter of the tumor. In two cases the current burned a hole in the skin and the tumor was loosened from the surrounding tissue and fell out. This material when examined microscopically did not show any evidence of extensive alteration; the staining qualities of the cells were merely somewhat less marked than in normal tissues. This shows that the cells were not much burned, but merely heated sufficiently to coagulate the proteid. All of this series of five animals died in from one to seven days. In all remnants of neoplasm could be found at the original site of the tumor. Death was not due to extension of the tumor; the lesion found was an acute enterocolitis resembling that found after severe and extensive burns. The only conclusions which can be drawn from these experiments, therefore, are:

1. That the current is not entirely a harmless agent.
2. That it does not actually char the tissues very extensively.
3. That it does not touch extensions outside the field of the main growth.

In the second series six animals inoculated with carcinoma were used. Two of the tumors were large and ulcerating, the other four were small, not over 0.5 cm. in diameter. Five of the rats were treated with fulguration; in one the bipolar current was used. This last animal died a few minutes after the cessation of the application of the current. Of the five remaining tumors four appeared to be actually growing, one appeared to be stationary. At the end of twelve days the infected surfaces of the two ulcerating tumors had become clean, healthy granulations, though the tumors are extending.

It is evident from these experiments that neither the direct treatment with bipolar current for fulguration or malignant new growths is capable of destroying all the carcinoma cells in a given area. While the use of the current is valuable in checking hemorrhage, as in bladder operations, it can by no means be assumed to replace extensive resection in the cure of carcinoma. Its action is probably simply that of an easily handled cautery.

Further experiments are being carried on, detailed statement of which will appear in a later communication.

49 East Forty-ninth Street.

Anaphylaxis in Burns.—A. Alhaique notes that animals that have recovered from a burn are more susceptible to the influence of a second burn, to which they may succumb, although if it had been the initial burn it would not have caused death. The serum of a guinea pig that has been burned when injected into another guinea pig imparts to the latter this hypersusceptibility to burns.—*Pathologica.*

TICS AND THEIR TREATMENT; EDUCATION VS. HYPNOSIS.*

By J. H. LEINER, M.D.,
NEW YORK.
ASSISTANT ADJUNCT NEUROLOGIST, BRONX HOSPITAL AND DISPENSARY; CLINICAL ASSISTANT, NEUROLOGICAL DEPARTMENT, GERMAN POLYKLINIK.

Tic involving a single muscle or a group of muscles is to be considered as a contraction or twitch, either arising in response to an external sensory irritation, or originating without the afferent impulse, when it is then purely a psychic condition, *i.e.* psychomotor. Charcot believed that it always was of psychic origin, but Brissaud first, and Miege later, after studying carefully these conditions, concluded that a good part of them were due to external irritation.

A further French classification divides these habit spasms into two main groups: (1) In which there is a simple spasmodic movement of different muscles particularly of the face and upper extremities. (2) In addition to the above muscular spasm there are explosive utterances and psychic symptoms. This variety, in my opinion, should not be placed under the classification of a habit spasm or habit chorea. Although they were named as impulsive tics of Gilles de la Tourette, nevertheless, if one observes a case of this kind he cannot help but consider these symptoms as belonging to hysterias, especially when the symptoms of mimicry, obsessions, and fixed ideas are very pronounced.

When these movements primarily originate as a result of some external irritation it becomes a tic only if there occurs a repetition of movements, first *involuntary*, which later fixes itself as a habit, the original causative factor often disappearing. The case I am presenting shows this phase very strikingly. As the patient goes along these coordinated movements grow more intense, more frequent, making the sufferer's lot miserable, and if an adult, often depriving him of his livelihood.

If its origin, on the other hand, is purely psychomotor, as a vast majority show this mode of onset, in the so-called imitation variety, it begins as a *voluntary* movement, the end result being the same as above mentioned. Whatever the causative factor, these co-ordinated muscular contractions become later entirely involuntary, convulsive in nature, and beyond conscious control.

Tics appear mostly between the ages of five and twelve, this being the impressionable period of childhood. Male and female are found equally affected. It may appear at puberty, and if in old age, it is either a symptom of senility or of Senile Dementia. In going into the history of these patients, neurotic antecedents can be most often ascertained. Often following an occasion of either anxiety or shock there is a gradual onset and development of these symptoms. The intensity of these contractions are, however, variable, so too, the duration of the invasional period. Spontaneous recoveries are recorded but are very rare indeed. The variety of muscular involvement, either singly or in groups, are as varied in this condition as there are human faces. Tic may affect any part of the voluntary system, showing a selective tendency for involving the muscles of the face, and diminish in frequency as we pass down the body. They may show wrinkling of the forehead which is a very common condition, jerking of the head, twitching or turning body, spasms involving the motor oculi,

*Read before the Northern Medical Society, June 28, 1912.

and often cases where the risorii are so markedly affected (as in this case) that they produce a picture reminding one of Hugo's "L'Homme Qui Rit."

This brings me to the treatment of these cases, as instituted in the neurological clinics in this country, and advocated in American text books of recent date.

Educational Treatment.—The essence of this treatment requires the patient to keep his mind on his spasm and try to control it voluntarily. He must go through daily exercises contracting the muscles involved in the twitch, and those that are the opponents. This task is impossible most of the time, and it is often necessary to get somebody who can control the patient, hold him well in hand, to have him undergo these daily exercises.

We find that this educational treatment is one of very long duration and ofttimes makes the condition worse in view of the patient's concentration upon his malady. This patient, whom you see, when he had his mind centered upon himself, became overwhelmingly worse. It is a prime requisite in instituting this class of treatment for children, that they should be completely isolated, taken from their parents, and unless the treatment is administered by a specially trained individual it will give poor results. Practically speaking, a great many patients suffering from tic come to clinics for treatment, and they are certainly, as you know, a very difficult lot to manage. So it is apparent that this method is not an ideal one by any means when dealing with practical conditions.

Hygienic and Medicinal Treatment.—This treatment is either given alone, or in combination with the above. Hygienic management is the *sine qua non* for all functional maladies that overtake childhood and although a great factor in treatment, is not the main therapeutic measure for the cure of this condition. Medicinal treatment by drugging the patient with arsenic should be absolutely avoided. I have in mind one case in particular where in addition to hygienic measures, arsenic and bromides were given for over a year and a half consistently, but with no results whatsoever.

Bearing in mind the inadequacy of therapeusis in such conditions this case may prove of interest because of its obstinacy and mode of treatment.

Patient A. R., male, 31 years old; born in Hungary; occupation, Bonaz embroidery worker. A neurotic family history was not elicited. *Personal history:* Does not smoke, drinks moderately of coffee and tea, does not partake of alcoholics. Venereal history denied. *Present history:* In the early part of December, 1911, patient began to have pain in both eyes, particularly in the left. This continued for several weeks when he was advised by friends to go to an optometrist to have glasses adjusted, who very readily advised him to do so. About this time he commenced to blink his eyes and roll them, imagining there was some foreign body therein. He next attended two eye clinics seeking for relief, but with no result. Finally he came to the German Polyklinik's Eye Department which he attended, and finding they could not do anything for him he was transferred to the Neurological Department. Here we instituted the classical treatment for tic, but with no avail. I took him in hand then after he had gone along for two and one-half months, beginning at first with a slight blinking of his eyelids, now, however, presenting a far different picture.

He showed a marked spasm of his forehead, involvement of the motor oculi, orbicularis palpebrarum, risorii, buccinator, orbicularis oris and other small muscles of the face. This combination of muscular movement when acting simultaneously was very bizarre. He wrinkled his forehead, rolled his eyeballs, beginning by looking inward toward his nose, then sweeping them upwards making a complete semicircle of 180° until he came to the outer canthus, then bringing them in again to the inner canthus; concomitant with these movements he used his risorii and other facial muscles and when one looked at him he gave the impression of laughter. This would keep up all day long, showing contractions at the rate of about forty times to the minute. He would, however, stop it while asleep at night, but the moment he awoke it began over again. Sometimes he would stop during the day but only for a few moments.

Treatment.—The first day I saw him, after ruling out organic disease, I tried hypnosis. He was put under the hypnoidal state—in this state of hypnosis, as you know, there is no amnesia—and I gave him suggestion for only a couple of minutes. When I awoke him all his symptoms had disappeared. He looked and felt just as he did twelve weeks before, when he had perfect control over his eyes and facial muscles. For ten days following he was entirely free from his condition, when he began to blink his eyes again, once or twice hourly. This was controlled. I put him under twice again because of his complaint that he had had two or three spasms daily. I finally thought that if I instilled into his subconsciousness a new complex which would act as an inhibitory factor it would entirely control his spasms. This method proved successful and it is now four months and not once has he shown any spasm whatsoever.

Although the educational method in the treatment of these conditions has shown a fair percentage of effective cures, nevertheless the inference I desire to draw from this obstinate case of tic is that if hypnosis were more often and widely used it would show, in my opinion, better results. The case before you could not possibly have been controlled by the classic treatment; however, it readily yielded to hypnosis.

421 Wendover Avenue.

A METHOD OF ANOCI-ASSOCIATION FOR ABDOMINAL OPERATIONS IN SELECTED CASES, WITH NERVE BLOCK À DISTANCE.

By LEIGH F. WATSON, M.D.,

OKLAHOMA CITY, OKLA.

Following the principles of anoci-association worked out by Crile, it is interesting to note the excellent results produced by a combination of local and general anesthesia for abdominal operations in selected cases. Several years ago Bodine advocated local anesthesia for appendicectomy, with a few whiffs of chloroform or nitrous-oxide gas for freeing and treating the appendix.

Crile and Bloodgood employ nitrous-oxide gas administered by a skilled anesthetist. In certain localities nitrous-oxide gas and an experienced anesthetist are not always obtainable.

With a proper selection of cases I believe there are less shock and postoperative pain when the operation is begun and finished under local anesthesia alone. Those who have had experience with local

anesthesia for abdominal incisions realize that an extensive and systematic infiltration of the different layers of the abdominal wall is essential for complete nerve blocking. It is seldom possible effectually to block the nerves of the fascia, muscles, and parietal peritoneum, especially in fleshy subjects, until the skin and fat have been incised, no matter how painstaking the infiltration.

With the patient under general anesthesia we have no means of knowing how thoroughly we have isolated the shock-producing impulses from the brain. The operator must be familiar with the technique of local anesthesia and able to gain and maintain the confidence of his patient, to use this method successfully.

Cocaine is best suited to this method because novocain is too slow in appearing and too fleeting in its effect completely to block the sensory nerve impulses during the ordinary operation and the closure of the wound. Braun and Lennander state that novocain is unsatisfactory unless combined with adrenalin to prolong its action, and even then the anesthesia is not complete for twenty to thirty minutes after the drug has been injected. With an incomplete nerve block, even though the patient is under general narcosis, there will be sensory nerve stimulation and exhaustion of the brain cells with its resulting shock.

Cocaine, 1:1000, with adrenalin is as safe as novocain 1:400 for the most handicapped patient. The cocaine anesthesia is complete within two minutes and lasts for three to four hours. When cocaine in physiological salt solution is used for the abdominal incision the tissues heal more promptly than after the use of quinine and urea.

For the prevention of postoperative pain in the wound for the first few days following operation, quinine and urea injections act admirably if made with a long needle into the tissues, at a distance (one to two inches) from the margin of the wound. As each layer is sutured the quinine and urea solution is injected, so as to block the nerves of this layer of tissues and yet not interfere with the healing of the wound. Postoperative anesthesia persists longer when the quinine and urea injection is used in this manner, for it is well known that a local anesthetic lasts longer in tissues that are not cut. After-pain in wounds is undoubtedly largely dependent on the degree of traumatism inflicted during operation on those structures possessing an abundant nerve supply.

Reclus and Lennander were among the first to note the comparative freedom from after-pain enjoyed by patients who had been operated on under cocaine anesthesia.

The quinine and urea nerve block *à distance* prevents postoperative stimulation of the brain cells, therefore there is no after-pain. When possible I believe it is always best to begin the operation with cocaine anesthesia and reserve the general anesthetic, even though it is nitrous oxide, until required for the intraabdominal manipulation. When nitrous oxide is not available and there is no contraindication, I prefer a few drops of chloroform when the intraabdominal manipulation requires a general anesthetic. With this method it is seldom that the patient need be completely under the anesthetic. Nausea and vomiting are absent, except when it is necessary to give ether, and then are slight because of the small amount required.

With this combined method the amount of the general anesthetic used is reduced to a minimum and the nerve block is more thorough than when the local anesthetic is hastily injected after the patient is under general narcosis.

I have used this method in performing a hysterectomy for a ten-pound fibroid of the uterus. The patient's pulse was 84 before operation and dropped to 72 before she left the operating table.

A patient with a very large ovarian cyst had a pulse of 80 throughout the operation. Unassisted she turned on her side after the cyst was incised, and when in bed after the operation remarked that she felt like taking a nap, she was so comfortable and free from pain. This patient did not receive a preliminary dose of morphine or hyoscine. In cocaine appendicectomies and exploratory laparotomies the pulse is rarely more rapid after than before operation.

This method requires more time than does the method of Crile and Bloodgood, because there is less general anesthesia used. It is impractical for large clinics, though for the majority of operators it has many advantages.

To appreciate the merits and gain the greatest proficiency in the technique of the combined method of anesthesia it must be used in every case no matter how small the operation.

In conclusion, with a sufficient dose of morphine or morphine and hyoscine to exclude worry, fear, and nervousness there will be no psychic shock. With a local anesthesia nerve block *à distance* sufficient completely to isolate the brain from the field of operation, there can be no exhaustion or shock of the subjective mind.

611-13 Colcord Building.

Rare Complications of Exostoses.—P. Sourdat notes among the complications of exostoses the following: pressure effects on the skin and nerves; painful contractions of overlying muscles; the development about the exostosis of a serous bursa which may become inflamed, and the detachment of a piece of cartilage from the surface of the exostosis, and its presence as a foreign body in the bursal sac. Of greater rarity is the ulceration of blood-vessels lying in proximity to the exostosis, or the traumatic fracture of the exostosis itself. The author reports a case of each of these accidents. One was that of ulceration of the peroneal artery by an exostosis of the tibia. The other was that of fracture of an exostosis of the lower end of the femur.—*Archives Provinciales de Chirurgie.*

The Treatment of Scarlet Fever with Moser's Serum.—B. Schick lays down the following principles that should govern this method of treatment: (1) The treatment should be applied only to those cases of doubtful prognosis and to those ordinarily fatal. (2) The injections should be made as early as possible, preferably during the first two days of the disease. The third day decides whether the treatment will be successful or not. After the fifth day of the disease the serum has no effect. (3) Cases most suitable for the treatment are those with toxic scarlet fever and those in which the throat complications are absent or are markedly developed. (4) Only those sera should be employed whose efficiency has been demonstrated. (5) The amount of serum to be injected is 200 c.c. In children up to one and a half years of age the amount should be 100 c.c. (6) All other therapeutic measures should not be omitted, especially all those that are designed to save the heart. Moser's serum is the only remedy of value in the toxic cases of scarlet fever. In these cases one should inject the serum not as a last resort but early in the course of the disease.—*Therapeutische Monatshefte.*

MEDICAL RECORD.

A Weekly Journal of Medicine and Surgery.

THOMAS L. STEDMAN, A.M., M.D., EDITOR.

PUBLISHERS

WM. WOOD & CO., 51 FIFTH AVENUE.

See fourth page following reading matter for Rates of Subscription and Information for Contributors and Subscribers.

New York, October 5, 1912.

THE ABUSES OF POPULAR MEDICAL EDUCATION.

ONE of the most powerful weapons in the campaign against disease is the enlightenment of the public in the principles of hygiene and sanitation. During the past few years medical men have been encouraged to assist in lifting the veil which hides the facts of disease from the eyes of the laity, and to accomplish this object through the medium of the lecture platform, the popular magazine, and the daily newspaper. The results have more than fulfilled the expectations of the most ardent advocates of popular medical education. Recently there has been a veritable inundation of newspaper and magazine articles on medical topics. Physicians have abundant opportunities for noting the avidity with which these articles are read and commented upon by the public. While not denying the possibilities for good associated with this method of aiding the cause of preventive medicine, it must be admitted that there are certain grave abuses that are at the same time bound up with this form of popular instruction. These abuses have not yet been sufficiently emphasized.

Conspicuous among the latter is the powerful influence exerted by self-appointed teachers who adopt the methods of the theatrical press-agent, but whose knowledge and experience are not sufficient to enable them to speak with the voice of authority. There is reason to suspect that some of these false prophets secure a self-exploitation that is not technically in violation of the code of medical ethics. The public should be warned particularly against those writers whose glittering and epigrammatic style enables them to give force to teachings that are founded neither on close observation nor on sound reflection.

There is a growing tendency to uncover some of the repulsive aspects of disease, to make direct and veiled appeals to the prurient, and to discuss in public subjects that should be reserved for the privacy of the home or the consulting room. Is it wise to break away from the reserve which has been one of the cherished ideals of the medical profession for many generations? The public is entitled to know everything that may in any manner assist in preventing or fighting disease. But this is no license for the dissemination of statements that are not the product of ripe reflection, for the exploitation of theories that have not yet received the sanction of the medical faculty, and for the circulation of doctrines that run counter to the seasoned opinions of the entire profession. The public press with rare exceptions has failed to exercise a wise censorship of medical news, and only too frequently has opened its columns to the half-baked hypotheses of sensational and pseudo-scientific medicine.

A CITY'S WASTE.

THE health conditions of any community are largely affected by the manner in which the waste is disposed of. Whatever else is done, this waste must, first of all, be rendered innocuous to the citizen. It is a fundamental duty of boards of health to formulate and to get inexorably enforced adequate regulations concerning material of which an American city of half a million gathers annually some 300,000 tons—fermenting, decomposing, putrescent, malodorous matter, food for rats, and other disease-conveying scavengers, breeding places for flies and other infection-spreading insects. Franz Schneider relates in the *Scientific American* of July 13, 1912, how New York and other cities cope with this problem. The annual refuse of the metropolis (not including its sewage or other liquid, but only the dry or relatively dry part of the city's waste) equals in volume ninety *Titanics*, and at least three great pyramids of Ghizeh. Evidently the problem of how to dispose of such masses is one of the first magnitude, requiring the greatest engineering skill and the expenditure of large sums of money.

In rural districts waste disposal is a comparatively simple matter: garbage is fed to the stock or ploughed into the ground; old paper and other combustible material are readily burned, and unburnable material goes into an innocuous dump heap. In cities the problem is much weightier, and is made more complex by the diversity of urban industries. For purposes of discussion four general classes of refuse may be recognized: garbage, ashes, rubbish, and street sweepings. Special waste from slaughter houses and putrescent animals from the public streets will be encountered, but the main phases of the problem are as here indicated.

In any comprehensive plan cognizance must be taken of the methods of collection. In some communities the householder must put his garbage and rubbish in separate receptacles, and these are separately carted away. In England, on the other hand, garbage and refuse are treated together, so that there is no occasion for separating them. The means of collection and disposal are at present almost as varied as the character of the material itself; yet here is one of the factors which must be settled in any scheme. Garbage is sometimes merely dumped on land—a procedure unesthetic and absolutely repugnant to sanitary science; or it is dumped in water, a serious nuisance resulting from material drifting back on the shores. The only methods really deserving consideration are reduction and incineration. In the former it is aimed to recover the grease from the material. Two to three per cent. of the garbage is thus extracted as grease, fertilizer stock which is sold to farmers

being the residue. Reduction is usually attended by unquestionably objectionable odors, wherefore plants to this end must be located far from cities, the expense of haulage being thus also an item. However this method may pay private concerns, it is questionable if it pays cities. The reduction method is distinctly American, and is little practised abroad where incineration is preferred. Garbage disposal by this method must be considered with relation to other classes of refuse; the heat for incineration must be obtained not only from the garbage itself, but also from other combustible waste. This method is most sanitary, giving, besides, clinkers which are valuable in construction work and for filling, paving, and concreting, while the resultant may be transformed into steam or electrical power. The problem of collection is also thus simplified, and as no odors come from the "destructors," they are placed in the municipal interiors, by which arrangement the haul is shortened and the cost diminished. In the earlier attempts at incineration the furnace temperatures at natural draft were too low, so that objectionable smoke and noxious odors resulted. But with the introduction of forced draft at 1,250° F. such difficulties have disappeared; and in Europe, especially in England, incineration (not cremation, which requires the expense of coal or other fuel not derived from the waste material) is "complete, unobjectionable, sanitary, and sometimes profitable." We have not space to consider further the disposal of ashes and rubbish, except to note that the picking over of rubbish is a very dusty and assuredly unhealthful occupation. Street sweepings with manure are placed in the ground, or dumped, or, best of all, incinerated.

The actual detailed plan which would be most efficient for any given community can be determined only after an investigation of its refuse, of the character of the community itself, and of its environs. A method must be selected which will remove the wastes quickly and completely from sight without nuisance or danger to health, which will recover whatever is valuable, and which will be carried on in every phase at the minimum expense.

INHERITANCE OF DISEASE.

Our medical forefathers believed in the inheritance of disease, at any rate, to a very large extent. Gradually belief in the influence of heredity has waned, until recently the pendulum has swung almost completely in the other direction and it is almost heresy to assert that any disease can be inherited directly. The researches and teachings of Weismann have had much to do with the change of front and other biologists have carried his views to the extreme. Karl Pearson has been perhaps the most conspicuous protagonist of the doctrine that acquired conditions are not inherited, and that no matter how greatly the body is abused the germ cells are unaffected. Readers of the Medical Record may recall the statistics compiled by Pearson, some two years ago, showing that the children of alcoholics received no injury from the habits of their parents. This statement was apparently riddled by Sir Victor Horsley, and a heated discussion took place between the two eminent men, resulting, in the opinion of most authorities perhaps, in overthrowing Pearson's assertion.

At the meeting of the Canadian Medical Association held recently in Edmonton another doughty champion of moderate views as to the inheritance of disease discussed the matter. J. George Adami in the course of an able address said that he was sufficiently old fashioned to repudiate the new-fangled "Weismannism" and still retained the belief that the sins so-called of the parents against the body, or at least a very important series of such sins, do influence the progeny unfavorably. And what is more, he believed that these new ideas had their origin in the narrowness or, if the term might be used, Chauvinistic provincialism of the zoologists. He pointed out that the vitality of the offspring was gravely affected, and from observation of families of alcoholics observed by him he could not but feel that children of confirmed drunkards showed an increased susceptibility to the action of relatively small amounts of alcohol. As for infectious diseases, he said that time and again the practitioner had observed a relationship between chronic or acute infection suffered by either parent and abortion, blighted ovum, stillbirth, or monstrosity. Time and again also the ordinary practitioner had been convinced that the children of those suffering from tuberculosis and syphilis were not merely of lowered vitality or more liable to succumb to childish ailments, but notably, in the case of tuberculosis, exhibited a peculiar liability to succumb to the same parental disease. Attention was drawn also to the fact that inheritance of disease is far from being everything. From the point of view of eugenics, there were to be considered the terrible effects of congenital diseases, more particularly of infections conveyed to the growing individual while in the womb or during parturition. Of course, the results of gonorrhea and syphilis from this standpoint are manifest to every physician, and the ills that follow in the wake of venereal diseases are now becoming obvious to the layman. The speaker urged that one should no longer approach the subject with false modesty and self-consciousness but should grapple the question boldly, and with ripe knowledge of the origin of the scourges measures could be put into force which would eradicate the evil.

However, the most interesting part of the addresses was that which dealt with inheritance of disease, and it is refreshing in these days to meet one bold enough to promulgate opinions in opposition to those of possibly the majority of authorities. There are signs that the extreme views held with regard to the non-inheritance of disease are beginning to be regarded with a certain amount of distrust and the address of Adami will tend to hearten the doubters.

GERMS AND TUMOR CELLS WHICH "DIE ON THE PREMISES."

Those who seek to rid their domiciles of rodents know how often one nuisance is replaced by another through the death of the animals in their haunts. It may seem a crude and farfetched anal-

ogy between rats in the household and animal and vegetable parasites of human beings or between the former and irresponsibly proliferating tumor cells; yet at present the pathologists are being confronted with much the same sort of a problem as the aforesaid vermin-infested householder. Once they succeed in destroying the activities of bacteria and tumor cells, the very death of these individuals forms a new source of danger.

We have learned in late years that certain substances are by selective chemotherapeutic affinity enabled to cause the death of tumor cells; but through the fact that these structures so destroyed must undergo chemical decomposition with the formation of absorbable toxic products these discoveries are largely invalidated. We have also learned that it may not be an unmixed blessing to destroy in an instant all the pathogenic bacteria in the body, for the numerous untoward results from salvarsan appear to be due in part to the absorption *en masse* of the decomposition products of the destroyed spirochetes.

The success of antidiphtheritic serum in neutralizing the toxemia of the disease, while at the same time the local proliferation of the bacteria was inhibited, has led us, perhaps, to expect too much from this plan of therapy. In a current number of the *Berliner klinische Wochenschrift* Geronne announces that while he succeeded in overcoming the blood infection in croupous pneumonia through early intravenous injection of a new serum, the local condition, so far from showing a parallel improvement, yielded in certain cases the very opposite results. The lungs did not clear up as they ordinarily do, and in two instances the patients had rusty expectoration for days. These results appear to show that in filling one indication satisfactorily we may set new irresponsible mechanisms in motion. The antipneumococcus serum in neutralizing a toxic principle in the blood may have paralyzed the phagocytes or autolytic enzymes or whatever principle it is which presides over the rapid absorption of exudates. We must hark back to the old dictum of *primum non nocere*.

Non-Material Cure of Common Warts.

The statement often made that removal by any material method of warts upon one hand may result in spontaneous disappearance of the warts on the opposite hand may be received in various ways. We may answer that such cures have never been subjected to rigorous analysis, or that they have resulted from mere coincidence or from mental impression. The first professional explanation to suggest itself would be bound up in a reflex mechanism, but the fact that warts are clearly due to contagion tends to invalidate such a supposition. At a recent session of the Aertzlicher Verein of Hamburg Delbanco (*Deutche medizinische Wochenschrift*, September 5) stated that he had had under treatment a young woman with numerous hard warts of both hands, especially massed about the joints, which rendered curettage inexpedient, since general narcosis would have been necessary. Despite the fact that the *x*-ray was not a dependable resource the author gave it a trial, limiting the first sessions to the right hand. The warts soon began to show evidence of involution not only on the right hand but on its fellow as well. Both hands became free at the same time. At least two specialists, Wälsh of Prague and Galewski of Dresden, have seen this crossed result follow curettage on one side. Delbanco names three possibilities to explain the disappearance of the warts on the untreated hand. First coincidental spontaneous disappearance which can almost be excluded from consideration; second, the reflex, angioneurotic theory (Kreibich), and third, an immunizing or lytic process occurring purely through the circulating blood.

Dysontogenesis and Cancer.

One of the most striking truisms in medicine, one which is verified daily, is the necessity of cumulation of causal elements to produce a pathological state. This is so self-evident that it is often ignored; realization of it should do much to discredit one-cause hypotheses of disease, such as are constantly in evidence in nonprofessional minds. The "cause-all" is a fitting companion to the "cure-all." Ernst at a meeting of the Naturhistorisch-medizinischer Verein of Heidelberg (*Muenchener medizinische Wochenschrift*, July 16) calls attention to the dysontogenetic element which may underlie cancer. The embryonal theory of cancer is of course very old, and the existence of branchogenous cancer and similar forms associated with congenital anomalies was largely responsible for Cohnheim's "misplaced residue" hypothesis. The author goes no further than to call attention to certain cancers in which such obvious factors as chronic irritation and atrophic change are not concerned. In an individual with profound dysontogenesis of the central nervous system and urinary apparatus an epidermoid cholesteatoma of the angle of the pons cerebelli was found to be the starting point of a carcinosis so widespread that it extended over the meninges and ventricles and descended down the spinal canal as far as its lumbar portion. No primary focus was found. The parasitic theory and irresponsible cell growth theory do not necessarily exclude each other nor do they exclude the dysontogenetic theory. Individual competitive theories often resolve themselves into so many distinct causal elements.

News of the Week.

Herter Lectures.—Prof. Max Rubner of the University of Berlin will deliver five lectures on "Energy Problems in Nutrition" under the Herter Foundation at the Carnegie Laboratory, 338 East 26th Street, New York, beginning on Monday, October 7, at four o'clock, and continuing daily at the same hour.

Harvey Society.—Prof. G. H. F. Nuttall of Cambridge University, England, will deliver a lecture on Saturday evening, October 12, at the New York Academy of Medicine, on "The Relapsing Fevers," before the Harvey Society.

College of Physicians and Surgeons.—At the opening exercises of the college which were held on Wednesday, September 25, an address of welcome was made by Dr. Butler, president of Columbia University, after which Dr. Theodore C. Janeway, Bard professor of medicine, spoke upon "The Importance of Pathological Theory for Practical Medicine." The college opened with a registration of 323 students, divided as follows: First year, 87; second year, 68; third year, 71; fourth year, 93; special, 4.

Civil Service Examinations.—The United States Civil Service Commission announces the following examinations: On October 23, an open competitive examination for the purpose of filling two vacancies in the position of medical interne in the Government Hospital for the Insane at Washington, at a salary of $600 per annum with maintenance.

On the same date an examination will be held for the purpose of filling five vacancies in the position of dentist at $1,500 per annum, in the Indian Service at large. The incumbents of these positions are also allowed actual and necessary traveling expenses, subsistence, and incidentals while on duty in the field. Applicants must be graduates of a regularly incorporated dental college, and have at least two years' experience in the practice of dentistry subsequent to graduation.

An examination, open to men only, will also be held on that date for a vacancy in the position of dental interne at $600 per annum in the Government Hospital for the Insane at Washington, with maintenance.

Full information and application blanks may be obtained from the United States Civil Service Commission, Washington, D. C.

Medical Colleges Open.—The College of Medicine of the University of Vermont, Burlington, opened on September 25 with an enrollment of 142 students. The requirement of one year of college work before entrance, which went into effect this year, has had a marked effect on the entering class, which numbers only 12, in comparison with 46 last year. Dr. Frederick W. Sears has been appointed lecturer in nervous disease, and Dr. Barnet T. Joseph librarian of the medical library.

The University of Pennsylvania began its 173d year on September 27 with a record number of students. In the Department of Medicine Dr. William Pepper assumed the office of dean, succeeding Dr. Allen J. Smith, who resigned in order to devote his entire time to his work as professor of pathology.

Smallpox in the United States.—During the year 1911 smallpox was prevalent all over the United States, but in a very mild form, according to the public health reports. Severe outbreaks of the disease during the year were limited to Texas, Californonia, and Kansas, and were few in number. Reports from twenty-nine States and the District of Columbia give a total of 21,768 cases during the year and 134 deaths reported. In 1910 there were in these same States 25,598 cases, with 403 deaths. The greatest number of cases were reported from North Carolina, 2,484; Florida, 2,195; Kansas, 2,043; Utah, 1,660, and Colorado, 1,381. In Connecticut only two cases were reported during the year. The case fatality was, on the whole, very low, the average rate being only 0.61 per 100 cases. In Massachusetts, however, there were 11 cases, with two deaths, giving a fatality rate per 100 of 18.18, the highest reported. In Texas, where many more cases of the disease occurred, the rate was 7.42, and in California 5.4 per 100.

The Plague Situation.—Four cases of plague were reported at La Perla, San Juan, between September 1 and 12, but the focus from which the infection in all these cases was undoubtedly received has been eradicated, and no more cases are expected to develop. No new cases have been reported in Havana. In Manila, P. I., four cases were reported during August, and in Hawaii one fatal case was reported on September 10, the first human case since March 14.

Epidemic Poliomyelitis.—The outbreak of infantile paralysis which began in Buffalo, N. Y., in June has not yet subsided, although it is apparently under control. During the week ending September 14 there were reported 18 cases, making a total up to that time of 226 cases, with 30 deaths. Unusual numbers of cases of the disease have also been reported in other places in the vicinity of Buffalo, and at Batavia, Genesee County, 14 cases have occurred during a few weeks. The epidemic at Los Angeles, Cal., seems, on the contrary, to be at an end. The outbreak there began in June also, and up to September 7 there had been reported 249 cases. The subsidence of the disease followed closely upon the establishment of a rigid quarantine of premises where there were cases, the closure of schools, and the prohibition of gatherings of large numbers of children.

City Death Rate.—During the week ending September 21 there were 1,162 deaths in New York City, while for the same week of last year the total was 1,330, the rates per thousand being 14.51 and 15.76 respectively. Of babies under one year of age there were 313 deaths last week, making a total so far this year of 587 deaths less than during the same time last year.

X-Ray Victim.—The French Government will, it is reported, shortly offer a decoration through the Minister of the Interior to Mlle. Weidemann of Paris, said to be one of the first victims of the *x*-rays. Mlle. Weidemann was in 1898 employed in the radiographic laboratory of one of the Paris hospitals and as the result of injuries then sustained has lost both hands.

188th Aviator Killed.—By the death of Lieut. Gegazzoni of the Italian Army, who was crushed by the falling of his aeroplane on September 25, the number of aviators who have lost their lives has increased to 188. Of these 184 were men and 4 women. So far this year 78 persons have been killed in aeroplane accidents.

Obituary Notes.—Dr. Edmund F. Steckel of Allentown, Pa., a graduate of the Jefferson Medical College, Philadelphia, in 1862, and a veteran of the Civil War, died at his home on September 19, aged 72 years.

Dr. Edwin W. Trueworthy of Lowell, Mass., a graduate of the University of Vermont, College of Medicine, Burlington, in 1865, a veteran of the Civil War, and a member of the Massachusetts State and Middlesex County Medical Societies, died at his home on September 13, aged 73 years.

Dr. Frank Wallace Brett of South Braintree, Mass., a graduate of the College of Physicians and Surgeons of Boston, in 1894, a member of the American Medical Association, and the Massachusetts State and Norfolk County Medical Societies, died suddenly at his home on September 1, aged 51 years.

Dr. George W. Butts of Chuckatuck, Va., a graduate of the Winchester Medical College, Va., in 1868, a member of the Confederate Army during the Civil War, and for eighteen years president of the Board of Visitors of the Deaf, Dumb, and Blind Institute at Staunton, died suddenly on September 6, aged 70 years.

Dr. Francis L. Frost of Charleston, S. C., a graduate of the Medical College of the State of South Carolina, Charleston, in 1861, and a member of the Confederate Army during the Civil War, died at his home on September 4, aged 81 years, aged 26 years.

Correspondence.

THE FIFTEENTH INTERNATIONAL CONGRESS ON HYGIENE AND DEMOGRAPHY.

(Special Report to the MEDICAL RECORD.)

(*Continued from page* 581.)

LIGHTING OF THE IDEAL SCHOOL—MORTALITY AND THE CAUSES OF DEATH BY PROFESSIONS—THE HOSPITAL SHIP—FIRST AID IN SEA BATTLES—CAMP SANITATION—GAS POISONING ON SHIPBOARD—HYGIENE OF THE ENGINE ROOM—INGESTION OF FOOD AND METABOLISM—FOODSTUFFS AND METABOLISM—NUTRITION AND BONE GROWTH—RÔLE OF PROTEINS IN GROWTH—THE OCCUPATION NEUROSES—A NEW LENS TO CORRECT SIGHT DEFECTS—CAISSON DISEASE—EXPOSURE TO INTENSE HEAT—INJURIES CAUSED BY ELECTRICITY—DEVELOPMENT OF VITAL STATISTICS IN THE UNITED STATES—BIRTH STATISTICS—RELATION OF RURAL AND URBAN POPULATIONS—CLASSIFICATION OF THE CAUSES OF DEATH—THE TRAINING OF DEMOGRAPHERS.

WASHINGTON, D. C., September 24, 1912.

M. AUGUSTIN REY, a Parisian architect, described his ideal school. He said that the beneficial effects of the violet rays were so well known that it was criminal to build in such a way that they could not penetrate to every part of a room; it was doubly important that this should be possible in school rooms. If there was a choice between heat, ventilation, and sunshine we should see that we had the sunshine first. His building was so arranged that the classes should meet in the east rooms in the afternoon after the morning sun had thoroughly disinfected them and in the west in the morning, since the afternoon sun would have disinfected the western rooms on the previous day. There should be plenty of ground and plenty of sand about school houses. It is better to economize in decorations than in sunlight and ventilation. "Speculation in land must be stopped. Speculation in land in our cities is a crime against society." He said that while this was his ideal school he preferred the open-air school.

The second and last address delivered in the General Session was on "Mortality and Causes of Death by Professions" by Dr. Jacques Bertillon, chief of the Bureau of Municipal Statistics, Paris, France. He compared, by countries, the mortality of each profession to the average mortality of the country. He said when mortality in a profession is inferior to the general average during youth, and on the contrary exceeds the average at mature age, and when we find these same results in several tables we can deduce that this profession is injurious to health. We must investigate what diseases cause these results. We must, therefore, for each profession, calculate the frequency of each disease at each age. To obtain from this multitude of figures general conclusions, it is indispensable to classify the professions from a hygienic point of view. Authors who have undertaken this classification have merely remembered professions affected by some extraordinary disease, such as malignant pustule among tanners, lead colic among painters, etc.; they remembered, besides, the etiology ordinarily attributed to some common diseases, such as humidity for rheumatism, cold for pneumonia, dust for tuberculosis. And it is from this information that professions have been classified. This method is the best to be followed when there are no statistical data. It is, however, very imperfect; it gives too much importance to certain professional diseases which incur very few deaths. Moreover, it prejudges *what is probable*, instead of being based *on fact*. The speaker proceeded quite differently. Taking statistical facts as a basis, he has classified the professions according to the rarity, moderate frequency or frequency of phthisis. In each of these three divisions he has distinguished three groups according to the degree of frequency of other diseases of the respiratory system. In each of these nine groups he has made three sub-groups according to frequency of heart diseases, and so on, successively considering the frequency of liver diseases, of nephritis, of diseases of the nervous system, more particularly after the fortieth year; that is to say, when the profession has had the time to exercise its good or harmful influence. This led the speaker to make 729 sub-groups of professions. Professions then group themselves so naturally that it is, in spite of its appearance, rather easy to summarize this immense table of 729 divisions. He came thus to classify them as follows: A. Groups of professions in which phthisis is generally frequent or rather frequent. These professions may be grouped as follows: Professions exposing men to alcohol (wine merchants, brewers, etc.); saturnine professions; professions exposing to changes of weather and compelling the operative to rest (coachmen, cart-drivers, etc.); different journeymen (since these professions are all alcoholic and suffer great mortality caused by all diseases); metallurgy; textile and similar professions; professions exposing man to organic waste. These divide themselves into sub-groups: professions where there is little or no dust; professions exposing men to hard dusts of animal origin, and professions exposing men to hard dusts of vegetable origin; professions generally performed in confined places; servants. B. Professions where phthisis is rare, but liver disease frequent or moderately frequent: liberal professions (priests and professors separate themselves from the other liberal professions by the rarity of liver and kidney disease. One is surprised to see these diseases so frequent in England, where one would believe these professions free from intemperance). C. Professions where liver and kidney disease are rare. Professions exercised in the open air without constraining to agricultural rest. These are divided into four sub-groups: agricultural professions (here all causes of death are rare); industrial professions (caissons, lime burners, boat constructors, railroad engineers, etc., are somewhat less favored than the preceding group); professions performed on the water (here one notices the frequency of heart disease and accidents); traveling salesmen; wood workers; miners; chemical industries or similar. Dr. Bertillon exhibited numerous diagrams and charts, some devoted to the study of a single profession and some to the study of a single disease.

In the Military, Naval, and Tropical (Colonial) Hygiene Section, Surgeon-General Charles F. Stokes, U. S. Navy, read a paper on "The Hospital Ship, a Component Part of the Fleet and the Repair Ship for the Personnel." To insure the highest degree of military efficiency in time of peace and war, a hospital ship should be a component part of the battle fleet at all times. Not only is the hospital ship the repair ship for the personnel of the fleet,

but it is, as well, a scientific unit aiming, by means of chemical, bacterial, and other specialized work in medicine and surgery, to uplift the military effectiveness of the fighting forces. The hospital ship is the meeting place for the officers of the fleet, where problems in sanitary administration can be discussed and unified, clinical demonstrations made, and papers in naval medicine and surgery read and discussed. The hospital ship should carry the medical reference library for the fleet. In time of war the medical transport supplants the hospital ship in its importance to the fleet in operations at sea. In naval operations on shore, the hospital ship would act as a base hospital and as a supply ship.

Dr. Stokes also read a paper on "Dressing Stations, and Transportation of the Wounded in Battle at Sea." He believes that dressing stations are of little use except when a ship acts singly. The transportation of the wounded from one part of the ship to another part of the same ship is considered undesirable. The wounded should lie where they fall, there to be treated by a sanitary personnel from a fleet of medical transports, afterward removed to the medical transports, and thence to a sanitary base.

Surgeon-General Dr. A. Bornemann, R. N., Denmark, read a paper on the "First Treatment of Wounded in Sea-Battles." He said that in the Russo-Japanese War a number of the men were taught samaritan work. In the Danish Navy this work had been further perfected. The men as well as the officers are instructed: (1) In the first-aid treatment of wounds; (2) in the methods of temporary control of hemorrhage; (3) in the principles involved in moving wounded from one place to another with the hands alone, and how to place the wounded in the best possible position. At the same time there has been introduced a one-man bandage so prepared that it will remain absolutely sterile as long as it is dry. A water-proof cover protects it against perspiration. It is so arranged that when it is opened it can be at once placed on the wound without being soiled by the hands. The men carry it in an inner pocket of their outer garments. Further depositories for bandages are arranged in the various places where the crew is stationed. By employing these precautionary measures the author regards it as probable that in every battle some of the wounded who would otherwise perish will be saved.

Marine-Generaloberarzt Dr. Heffman, Berlin, Germany, presented a paper on "Hospital Quarters for the Wounded in Battle, and Transportation of the Wounded on Board the German Warships." Médecin-en-chef de la Marine française, Dr. P. Barthélémy, médecin de division, Croiseur cuirassé "Leon Gambetta," France, read a paper on "Dressing Stations and Transportation of Wounded in Battle at Sea." Surgeon-General Dr. Simon von Unterberger, Privy Councilor, Hon. Physician to his Majesty's court, St. Petersburg, Russia, read a paper on the "Permanent Camp of Krassnoje-Sselo from a Sanitary Point of View." The village of Krassnoje-Sselo (Red Village) was used as a camp for the first time in 1765; the number of soldiers now amounts to about 40,000. This camp is a most excellent one. Owing to the constitution of the lime, the sand, and the blue clay, the camp has beautiful, clear drinking water from springs with radioactive qualities. Joseph H. Ford, Major, Medical Corps U. S. Army, Canal Zone, read a paper on the "Disposal of Wastes," giving a succinct description of the apparatus employed for the disposal of wastes in camps. Papers on Water Supply were read by Lieut.-Colonel Charles F. Mason, Medical Corps, U. S. Army, Washington, D. C., and Major Carl R. Darnall, Medical Corps, U. S. Army, Washington, D. C.

Marine-Oberstabsarzt Dr. Weber, Berlin, Germany, presented a paper on "Some Cases of Gas-Poisoning Frequently Occurring on Board." The object of this lecture was to draw attention to the deficiencies existing in literary works bearing on the subject which have been apparently neglected hitherto; also to interest a large number of technical men so that they may cooperate in solving problems that may in the future come to the front in connection with this important subject.

Surgeon F. L. Pleadwell, U. S. Navy, presented a paper on the "Hygiene of the Engine and Fireroom Force with Special Reference to the Effects of Heat and Humidity." Surgeon R. C. Holcomb, U. S. Navy, read a paper on the "Hygiene of Engine and Fireroom Force." The object of this paper was to show that the prime duty of a battleship is to meet battle conditions. That, to meet these conditions, air supply alone is inadequate, and that proper ventilation is not established unless both supply and exhaust systems are furnished. Oberstabsarzt Dr. Hüne, Stettin, Germany, read a paper on "Bacillus Carriers Under Military and Naval Conditions." Médecin-Inspecteur General Dr. Fevrier, France, ministry of war, read a paper on "Purification de L'eau, Destinée aux Troupes en Campagne."

In the Section on Dietetic Hygiene and Hygienic Physiology Dr. Francis G. Benedict, director of the Nutrition Laboratory of the Carnegie Institution of Washington, Boston, Mass., read a paper on the "Influence of the Ingestion of Food upon Metabolism." Three interpretations of the increase in metabolism following the ingestion of food are current, first, the theory in which the mechanical work of the digestive processes plays the most prominent rôle; second, the less sharply defined theory in which the conception of the development of free heat unavailable to the cells is the dominant note, and, finally, the opinion expressed by Friedrich Müller, that there are absorbed out of the blood certain substances which are carried by the blood to the cells and there stimulate the cells to a greater metabolic activity. The evidence used for the evaluation of these views in his paper was based almost exclusively upon experiments made upon men. From the evidence it suggests that coincidental with what is commonly termed a "state of acidosis" there are present in the blood a body or bodies, probably of an acid nature, that stimulate the cells to a greater metabolism.

Dr. Graham Lusk of New York presented a paper on the "Influence of Foodstuffs and their Cleavage Products upon Heat Production." If meat in large quantity be given to a dog, the heat production rises in the second hour almost to its maximum, reaches its maximum in the third hour and continues at this level though the tenth hour when it begins to fall. In one instance the heat production during a morning hour was 22.3 calories, and after the ingestion of 1,200 grams of meat it had risen in the second hour to 36 calories, reaching 40 calories in the third hour at which level it remained through the tenth hour, after which it gradually fell to 25 calories in the twenty-first hour. During the second hour the nitrogen elimination was one-third the maximal nitrogen output as evenly maintained between the third and tenth

hours. The second hour also showed that the calculated non-protein respiratory quotient ranged between 90 and 99, which indicated that that part of the metabolism which was not due to protein as calculated from urinary nitrogen, originated largely from carbohydrate. During the later hours, the increased heat production is proportional to the nitrogen in the urine. During a period of 15 hours, protein carbon was retained in the organism and when the oxygen absorption as computed on the basis of such retention in the form of dextrose, is compared with the actual oxygen absorption, the two agree within 0.9 per cent., whereas computed on the basis of carbon retained as fat, there is a discrepancy of 10 per cent. between the calculated and actual value. The administration of 50 grams of dextrose in 150 c.c. of water to a dog, causes a rise of heat production from 16.2 to 20 calories, at which level it is maintained during the second, third, and fourth hours, falling nearly to the basal level in the fifth hour. The skin temperature rises to a greater extent than the rectal temperature. The absorption from the intestine is completed in the fourth hour. The urine is scanty until the fourth hour when 100 c.c. is suddenly eliminated. The sugar content of the blood in per cent. rises in the first hour but becomes normal after that. After the first hour the percentage of hemoglobin in the blood falls but returns to normal subsequent to the fourth hour. Hence, after sugar ingestion, osmotic phenomena cause an increased volume of blood. When the absorption is complete, the glycogenic function removes the dextrose from the blood, and the blood returns to its normal composition through the elimination of water by the kidney. Water alone or a solution of salt or of urea has no effect on the metabolism, hence the increase in metabolism is probably due to the increased number of molecules of dextrose carried to the cells and not to changes due to osmosis. Liebig's extract of beef is without influence on the metabolism. Fifty grams of olive oil causes a considerable increase in heat production. Glycocoll causes a very great increase in heat production, alanin also acts powerfully, leucin and tyrosin less so and glutamic acid not at all. It is concluded that the heat production may be increased by increasing the quantity of sugar and fat reaching the cells, or it may be increased through the direct stimulation of the cells by amino-acids, notably glycocoll and alanin.

Dr. Francis H. McCrudden, chemist to the Rockefeller Institute for Medical Research, New York, read a paper on "Nutrition and Bone Growth." Bone, like other tissues, undergoes metabolism throughout life. Old bone is continuously being reborbed and new bone laid down. If the new bone laid down is not qualitatively of the right composition, the result may be rickets, osteomalacia, osteoporosis, or osteitis deformans, depending upon the age of the patient and other factors. The bones act as a store for lime salts to be called on in time of need just as the subcutaneous tissue acts as a store for fat and the liver as a store for glycogen; and a flux of calcium from the bones started by a growing fetus, a hardening callus, metastatic bone formation, etc., may, under certain circumstances, lead to decalcification enough to result in osteomalacia and similar conditions. An important factor is the degree to which overproduction takes place, a factor involved also in immunity and, in fact, in all tissue repair. There were other disturbances which may be said to involve quantitative disturbance in bone growth, the rate of growth, rather than disturbances in the qualitative character of the bone produced. In some of these the failure to grow seems to depend on an absence of the "growing tendency" on the part of the bones; in others, some disturbance in the supply of lime salts available for bone growth seems to be at fault.

Dr. Lafayette B. Mendel, professor of physiological chemistry, Sheffield Scientific School of Yale University, New Haven, Conn., read a paper entitled the "Rôle of Proteins in Growth." He believes that some of the views held in the past regarding the interrelation of the food supply and growth are no longer tenable. Growth has often been associated in a causal way with the relative abundance of protein in diet. The parallelism between the protein content of milk of various species and rate of growth may be an example of correlation rather than of causation. Recent investigations have shown that the assumed association of growth with high protein intake is not confirmed by the evidence at hand. Growth is a function of the cells. This inherent capacity apparently cannot be exaggerated by feeding; but growth can be held in abeyance by various conditions. The development of a successful method of investigation by Osborne and Mendel has made it easy to approach some of the problems experimentally.

In the Section on Hygiene of Occupation Prof. Dr. L. v. Frankl-Hochwart, K.K. Universität, Vienna, Austria, read a paper on the "Occupation Neuroses." By occupation neurosis is meant a disturbance of the muscular innervation, which only sets in after a complicated activity of the muscles acquired by practice while the muscles in every other action obey the will. The differential diagnosis comes into consideration in a great number of other nervous diseases, viz., the cerebrospinal diseases, the tremors, tics, chorea, certain neurasthenic hysterical conditions (phobias, brachialgia, etc.), and intoxications. The just mentioned conditions are quite frequently confounded with professional neuritis, with true neuralgias (cramps), paralysis, atrophy, as observed after habitual monotonous work. Differential diagnosis is of special importance in angioneurosis (acroparesthesia), in dysbasia angiosclerotica, and in local diseases of the muscles, joints, tendons, and periosteum. True neurosis is mostly observed in men between the ages of twenty and forty years. As etiological factors one must consider the nervous heredity, the neuropathic diathesis, insufficient alimentation, alcoholism, and nicotinism. Professional overwork is one of the main factors; depressing conditions of life and the effect of fright are also predisposing factors. The symptomatology is best observed in the most frequent and most important neurosis: in writers' cramp. One must differentiate between four forms: (1) The spastic; (2) the paralytic (ataxia); (3) the tremor-like, and (4) the neuralgic. One occasionally finds as accompanying symptoms a slight weakness of the muscles and indications of disturbances of sensation. Those whose professional occupation is drawing and painting, and the stenotypists also, acquire the disease in the same manner as the copyists. Quite frequently one observes the neurosis of the upper extremities in musicians (pianists, violinists, buglers, etc.). In the latter one can observe disturbances of the innervation of the lungs and of the lips. To this group also belong the different varities of the vocal disturbances of speakers and actors, and of officers, caused by

habitually giving orders in a loud voice, and the neurosis of the voice caused by singing. Cramps are also observed in seamstresses, tailors, and persons engaged in similar occupations, also in barbers, in people who handle heavy hammers, in those who milk cows, in typesetters, in telegraphers, in cigar wrappers, in waiters, diamond cutters, cashiers, chauffeurs, etc. Sometimes similar conditions are observed in the lower extremities, for instance, in dancers, in those who while working use only one foot to turn a wheel, such as lathe workers, scissors grinders, bicyclists. In addition to the above mentioned cramps of the buglers, speakers and singers, there have been observed a few cases of cramps of the muscles of the head and of the neck; for instance, characteristic contractions while reading, also cramps of the eye muscles in microscopic work, in military drill, and in reading notes. Prognosis is not absolutely bad, but always doubtful. Recurrences are frequent. Everything which strengthens the individual psychically and physically will tend to prevent this neurosis. It is important to exercise the muscles in some way other than the habitual one; it is also important to insure instruction in manual work to prevent improper working habits. Overwork is harmful also, especially in early youth. The most important points in the treatment are: Cessation of all work which provokes the cramp, the adoption of general measures which have a beneficent effect on the general health; hydro-(thermo-)therapy, radiotherapy, electrotherapy, gymnastics, massage. In several instances writing apparatus was constructed; important are practical exercises in writing under the instruction of experts, also psychical re-education; after all psychotherapy seems to be the main factor in the treatment of this disease.

Dr. Louis Casamajor, New York, read a paper on "An Unusual Form of Mineral Poisoning Affecting the Nervous System" and questioned whether it was manganese. Dr. George M. Gould, Atlantic City, N. J., read a paper on "Eyestrain and Occupational Disease"; the evil effects of eyestrain are ignored by nearly all investigators, a convincing example being, in his opinion, the origin of myopia. Dr. G. Carlo Precerutti, Turin, Italy, presented a New Lens to Correct the Usual Defects of Sight. This lens was not only able to correct the usual defects of sight, but to prevent the serious alterations of the transparent media and of the bottom of the eye, in fact, cures them when they have begun, and augments the visual strength. In the lens has been embodied a radioactive substance dosed in such a way that through constant use the emanations are utilized, thus establishing a true cataphoric action on the organs of sight so that the lens corrects and cures at the same time.

T. Kennard Thomson, honorable vice-president of the American Society of Mechanical Engineers, New York, presented some notes on "Caisson Diseases," showing that sewage polluted soil in the Harlem River caissons caused much trouble with caisson disease at light pressure of compressed air which in pure air would have given no trouble. Also air rendered impure by workmen caused trouble and New York was taking great risk by polluting its rivers and bays. Dr. Seward Erdman, New York, described the acute effects of caisson disease and reported an analysis of the gas obtained from the right heart at autopsy. Dr. Peter Bassoe, Chicago, told of the "Remote Effects of Caisson Disease"; his paper mainly consisted in a further elaboration of the material investigated under the auspices of the Occupational Disease Commission of Illinois during the year 1910. The most common persistent results seemed to be deafness and tinnitus. Attention was called to the large number of men giving histories of paralysis and other serious manifestations years ago and now well and free from physical signs of disease. Alcoholism was very prevalent among the men who were studied.

"Caisson Disease and Its Prevention" was considered by Henry Japp, member of the Institute of Civil Engineers and of the American Society of Civil Engineers, New York City, in which he stated that our ignorance of caisson disease in the past has resulted in an increasing cost of operation by bringing about reduced hours of labor to minimize the chances of disease, by increasing wages to overcome the fear of disease, and by limiting the supply of labor through medical exclusion to prevent disease. Without doubt men are built to undergo pressure changes, as it is possible on the earth's surface to experience a range of pressure from 17½ pounds absolute in the deepest mine to 5 pounds absolute on the highest mountain, or a fall of 71½ per cent., which is the equivalent of decompressing from + 36¾ pounds to atmosphere. Paul Bert's mechanical theory that caisson disease is caused by the blood and tissues absorbing nitrogen under pressure, which escapes as bubbles during and after decomposition, is generally accepted, and cure by decompressing the liberated bubbles and prevention by slow decompression are universal. E. W. Moir's medical airlock on the Hudson Tunnel reduced the death-rate from 25 to 1 per cent., and on the New York East River tunnels this, combined with slow decompression, gave a death-rate of .19 of 1 per cent. Dr. Haldane's stage decompression method prevents fatal cases, and provides safety for divers in 210 feet of salt water, or + 92.4 pounds. This method consists of never permitting the maximum air saturation of the body on decompressing to be higher than 2.3 times the pressure in the airlock or than the atmosphere on emerging. This permits a quick drop to half the absolute pressure on entering the airlock, which accelerates the desaturation of the body much more quickly than the uniform method of decompression. In very deep diving, where the period of immersion is not great, the decompression period is not excessive, but in caissons and tunnels the immersion is comparatively long and the decompression period required appeared to the speaker to be too conservative and lengthy for practical purposes. On the East River tunnels 23,000 individual compressions were made from + 40 pounds, with a modified stage method on Dr. Haldane's principle, in forty-eight minutes without fatal or serious cases, leaving the maximum air saturation of the body on emerging at + 27 pounds. From this result the speaker has drawn up a table for decompression from tunnels. The methods of caring for the workmen were described and the regulations under which they worked were embodied in an appendix, as well as the proposed rules to be observed, which were submitted to the Commissioner of Labor of the State of New York by twenty-one engineers, doctors, and contractors.

The effect of the workmen's mental condition was mentioned as a possible influence on their susceptibility to caisson disease, just as fear is said to make men subject to yellow fever. Dr. Leonard Hill's conclusions from his recent experiments were given, and the desire was expressed that the Inter-

national Congress on Hygiene and Demography should draw up a table for decompression as a guide to future legislation.

A paper on "Prophylaxis of Labor in Compressed Air" was read by Dr. Herman von Schrötter, Vienna, Austria, in which he stated that the experimental results of recent years have enabled us to understand better the pathogeny of the various symptoms observed after rapid decompression. We have also more correct conceptions in regard to the rôle of oversaturated liquids, and of the conditions under which the release of gases in bubble form takes place in the organism. The decompression must take place, so that, while more rapid in the beginning, it slows down gradually and in proportion to the degree of saturation. In all cases a decompression in the contrary sense seems injurious. The muscular work facilitates, by its effect on the circulation, the elimination of gas during (and after) the discharge. Oxygen as a prophylactic and therapeutic means should, according to what we have already at another time insistently advised, enter more strongly into the practice of decompression. The use of oxygen could shorten the necessary duration for effecting a decompression unattended by danger. *Duration of Stay and Decompression.*—After labor under an overpressure of 1-1.5 atm., which need not be limited as to time (that is, 6-8 hours' shift is not too long), decompression may be effected in 10, that is, between 5-15 minutes, in which latter case initial acceleration of the decrease of pressure appears proper; after labor under an overpressure of 2 atm., decompression to 0.5 atm. in 3 minutes. Overpressure should be effected and then at an even rate of 0.1 atm., in not less than 4 minutes. After labor under an overpressure up to 3 atm., work must be shortened to 3.4 hours. Concerning decompression: the first decrease of pressure should occur in 3-5 minutes to 1.5 atm. Employ overpressure, then decrease the pressure at the rate of 0.1 atm., in not less than 4 minutes, or gradual decompression by means of an airlock, with about one-half, then one-quarter of the working pressure, with regard for physical activity, avoiding of harmful refrigeration (use of oxygen). In every construction work in which an overpressure of 1.5 atm. is employed, there must be a recompression airlock. How to arrange the prophylactic measures in each individual case depends upon the particular circumstances of the work, upon the requirements which labor in compressed air demands. In the technical preliminary measures for a construction to be built under compressed air, a physician, well versed in the matter, should therefore be consulted who, on the basis of the technical and local elements entering into the work, should determine the special regulations, based on the facts established, and correctly harmonize stay, pressure and decompression in order to reduce, as far as possible, the quota of danger. These, in such case obligatory measures shall from the begining have to be arranged in such a way that they will take into account the possibility of a wider basis as the work progresses, etc. The slow decompression, with a rapidity accelerated in the beginning as proposed by Haldane is preferable to a uniform decrease of pressure. Oxygen as a prophylactic agent should be used more than heretofore, especially in the case of the diver.

"The Effects of Exposure to Intense Heat on the Working Organism" was described by Dr. David L. Edsall, Harvard Medical School, Boston, Mass., a condition which he described some three years ago. The condition was characterized chiefly by muscular spasm, extremely common in some occupations, and seemed to occur during hot weather and chiefly in those regions where the summer temperatures rise quite high. Economically it has at times considerable importance in interfering with the efficiency of the working force. Occasionally the attack is fatal. Improved ventilation and the substitution of cranes and other mechanical appliances for manual labor in the heaviest and hottest parts of the work are the chief available preventive measures. The treatment is mainly symptomatic in controlling pain. Surgeon Charles N. Fiske, U. S. Navy, Washington, D. C., said that sunstroke was rare in the navy, but heat exhaustion may have either systemic shock or local muscular spasm predominating. The etiological factors with which the hygienist has concerned himself are chronic alcoholism, dissipation, debility, hard muscular labor, unrelieved fatigue, lack of sleep, insufficient circulation of air, wet bulb temperature above 85° F., lack of habituation, unsuitable clothing, fright, excess of protein and deficiency of carbohydrates in diet, insufficient assimilation of water, blood concentration, corpuscle destruction and arterial anemia, diminished toxin elimination through excess of cutaneous over renal excretion, predisposition from former attacks and others less likely.

Dr. Wilhelm Lindemann, Sanitätsrat, Bochum, Germany, read a paper on "Accidents and Diseases of Miners and Tunnel Workers," in which he stated that the most important hygienic measure for the prevention of ankylostomiasis is the use of transportable toilet-seats.

Sir Thomas Oliver, University Durham College of Medicine, Newcastle-upon-Tyne, England, read a paper entitled, "Injuries Caused by Electricity." We are constantly being reminded of the deadly effects of electricity. Contact with a live wire or an unprotected portion of machinery may kill a person immediately, it may injure him so severely that he dies in a few hours afterwards, or he is severely burned and recovers slowly. Death in electric shock resembles death caused by lightning. It is difficult to say what pressure electrical current or voltage is within the limits of safety. Of the two kinds of current the alternating is more dangerous than the constant, when the values are not too high. Currents of 100 to 150 volts are generally regarded as within the limits of safety, 200 to 300 as coming within the danger sphere and anything above 600 as likely to be fatal. There is no absolute certainty in this statement however. Mode of contact, duration of contact and whether made with one or both poles, the condition of the skin at the time, *e.g.* moist or dry, state of boots a workman is wearing and whether the soil is moist or dry, are circumstances which determine the consequences of exposure to electrical currents. The skin of the body offers resistance to the penetration of the current. When an electrical current penetrates the skin, none of its energy is lost; it is simply transformed into mechanical, thermal, chemical and electrolytic action. The injuries caused by electricity can hardly be regarded as burns, since they are not wholly due to extension from the surface but to internal heat. Cases of injury which came under personal observation were described in association with Professor R. A. Bolam; the author carried out a series of experiments with the view of ascertaining the causes of death in electric shock. In most of the animals death was due to

the arrest of the heart's action. Prevost and Battelli of Geneva found that currents of low tension cause death by the heart becoming paralyzed; with currents of high tension the breathing is first arrested, the animal is killed outright by inhibition of the respiratory center. Grange is of the opinion that hemorrhage into the medulla oblongata causes death by pressing upon the origin of the pneumogastric nerve. Jellinek found on lumbar puncture evidence of high cerebrospinal pressure in death after electric shock. He too is of the opinion that death is usually due to stoppage of the heart. In many experiments heart and respiration cease together, or respiration may be first arrested. Burns and the effects of electrical sparking upon the eyes are considered, also the methods of treatment to be adopted for the restoration of persons apparently killed by electricity.

"Diseases and Injuries Occurring in Electric Plants" was the title of the paper read by Dr. J. D. McGowan, Surgeon, Commonwealth Edison Company, Chicago, and it was his belief that the electric current *per se* does not cause any disease. "Accidents and Diseases of Ironworkers" was the title of a paper read by Dr. Friedrich Röpke, Solingen, Germany. In prophylaxis the guiding principle is: dust or gases must be rendered innocuous at the place of their origin. He had observed a few cases of mercurial poisoning among the fire gilders in the sword industry.

(To be continued.)

OUR LONDON LETTER.

(From Our Regular Correspondent.)

COMING SESSION—BRITISH ASSOCIATION—SECTIONAL PROCEEDINGS AND GENERAL DEBATES—MIND AND MATTER—ORIGIN OF LIFE—ISOLATION HOSPITALS —OBITUARY.

London, September 13, 1912.

The opening of the medical schools for the winter session is already the subject of conversation and those in any way connected with teaching are comparing notes of the arrangements made for keeping the traditional 1st of October at their several institutions.

Sir T. Crosby, the Lord Mayor, will take the chair at an old students' dinner of his own school of St. Thomas' Hospital. The occasion is to be marked at the London Hospital by the Schorstein memorial lecture to be delivered by Prof. Wardrop Griffith and in the evening a dinner will be held at which the venerable Jonathan Hutchinson has promised to take the chair and no doubt his surviving colleagues and numerous old students will put in an appearance. At the Middlesex Hospital the chief function will be the distribution of prizes; this will be conducted by Sir Charles Wyndham, who was originally educated for the profession and took the M. R. C. S. Eng. in 1857. The introductory address will follow by Dr. Lazarus-Barlow, and in the evening the inevitable dinner, when Dr. Campbell Thomson will take the chair. At Bart's a dinner in the great hall with Dr. Lewis Jones in the chair. At St. George's the introductory address by Mr. H. B. Grimsdale, whose subject is announced as "The Present Duty of the Medical Citizen," followed by the dinner, Dr. Penroe in the chair. At King's College Hospital the dinner is to suffice, presided over by Prof. Norman Dalton. At St. Mary's Dr. Gow will preside at the dinner, but earlier there is to be a distribution of prizes, when the Lord Mayor has promised to give a short address. Sir Rickman Godlee, president R. C. S. will preside at the University College Hospital dinner; Mr. Spencer at the Westminster. At Guy's the Pupils' Physical Society give their conversazione. At the Charing Cross Lady Mary Glyn and the Bishop of Peterborough will distribute prizes. At the Women's School Miss Jane Walker, M. D., will give the introductory, her subject, "Common Sense."

Members of the British Association have now returned, the meetings having concluded on the 11th inst. They seem to have enjoyed their trip, both the entertainments and the work of the sections. There were twelve of these and each with a chairman and his address. All sections were more concerned with pure science. Those most connected with medicine were physiology and chemistry, but even of these I can only mention a few points reported to me. In the former the president, Prof. Leonard Hill, talked of stuffy rooms, insisting that changes in the chemical composition of the air was not the cause of their evil influence and the specious standard of purity had deceived the public into permitting the elevation of skyscrapers and the sinking of cavernous places of business. Temperature, light, movement and relative moisture were the points to consider as to health. The monotonous lives of workers in such conditions while they continued would render useless sanatoria and dispensaries. Gas radiators and central heating were displacing the old open fires. The change improved the cleanliness and economized coal, but gave a monotonous, windless, warm atmosphere bad for the health. The efforts of engineers should be directed to cooling the air in public places and the bodies of people forming the audience.

There was a debate in this section on the "Relation of Mind and Matter," in which the hypotheses put forward by different schools of thought were more or less clearly described. But from what I can learn none seemed convincing and at the end Professor Starling declared the discussion had been a waste of time, a mere rehash of Thomas Aquinas complicated with incorrect physiology. Sir T. Clouston had argued that mental disease could be directly associated with alterations in the cerebral cells and that there were centers of mental inhibition which were nondeveloped in idiocy, imperfect in the primitive races and diseased in insanity. Dr. Haldane had contrasted the view that man consciously and purposively controlled, more or less successfully, his body through its environment, with the view that his conduct depended on that environment. If the former were adopted they were faced by the hard facts of the latter, adopting which the difficulty presented itself that mere physical and physiological processes could not offer an explanation of intelligent behavior.

In the chemical section, Professor Senier presiding, described their science as a complicated ideal structure of the imagination, a gigantic fairy palace, comparable to the wonderful stories of the "Arabian Nights." He traced some of the magical transformations of molecules and the conception of solid molecular aggregates and the hypothesis of isomeric phenomena. Passing to the practical education in the subject he urged that training in research should take precedence of elementary instruction, so far as national aid was given.

Two of the meetings of this section were held jointly with those of botany and zoology and were largely devoted to problems of growth and life.

One was notable for a discussion on plant pigments in which the chemists claimed equality with biologists in connection with the problems of heredity.

On Sunday there were official services in connection with the association at two churches, but the preachers only made indirect allusions to the proceedings. Canon Simpson urged the patient study of things as they exist and suggested that nature might be conquered by obeying it. Professor Denney told his audience that the Bible had not even a name for science, the purpose of Christ not being to anticipate knowledge but to reveal the Father. Science must be partial and its votaries marked off their boundaries and did not look beyond. There were doubtless references in other Protestant churches, but I have not heard of them. In the Roman Catholic one Rev. C. Widdowson directly controverted the presidential address. Sciolists in science and in religion were, he declared, the bane of both. That the fullness of being should shed out of itself all gradations of lesser and lesser was intelligible but that nothingness should endow the most majestic greatness revolted the sane mind. Yet they had been told evolution produced everything out of atoms and molecules. Emotions added nothing to flesh tremors; they might early find the atomic weight of toothache, the chemical composition of a sneer or the elements which combined to raise joy or grief. Surely they could not be expected to treat all that seriously. Monism itself was a revolt against such crude materialism. Physical science must ever remain impotent to fix finally the ultimate nature of things.

The debate of the week, fixed for Tuesday, was on the "Origin of Life," and, of course, embraced the presidential address; this is the subject which is always brought forward whenever the meeting is mentioned. Professor Minchin seemed to favor the view that the nucleus was the primordial form, as it was always present in living organisms; cells could not live when deprived of it, it was the first part to undergo division, was related to heredity and to ferments, and was the main part of the minutest organisms. When life appeared on the earth it was difficult to imagine how it could maintain its existence. Professor Wager thought that the previous speaker had helped them "no forrader." He regarded the cytoplasm as the fundamental part of the cell. Professor Keeble said that a savage who met a motor car and at once proceeded to explain its origin would be in a similar position to those explaining the synthetic life, but they were sillier than he. Professor MacAllum held with Tyndall that matter was endowed with the potentiality of life. The organism which was first formed was ultramicroscopic, perhaps under the two-hundredth of a micron. Prof. Benjamin Moore declared he still worshiped at the shrine of vitalism. He thought that life might still be originating. When the colloids got under sunlight they began synthetizing organic bodies and so the process continued. A picture consisted of the artist's soul as well as of pigment, so to those who could recognize, it there was a soul of living beings. Professor McCullam saw no hope of our ever being able to explain how life arose but would not dissuade others from searching. The alchemists who searched for the philosopher's stone founded chemistry and those who sought the elixir of life founded therapeutics. Dr. Haldane suggested that by analysis of the organic we might some day get down to the morganic (chemically speaking) and then see that this was an organic world, so we must study atoms and molecules to lead to a notion of the origin of life. Dr. Chalmers Mitchell said that was mere verbal nonsense. What they called life was only the result of observations about human beings. To extend it to anything else was pure metaphysics. Rev. T. Stebbing revived the old story of an Oxford Don who said he had listened to university sermons for forty years and was yet a Christian, and thought some of the audience might go home and tell their friends they had heard learned speeches on the origin of life and had left with the firm conviction that life never had an origin at all.

Next year's meeting is to be held at Birmingham from the 10th to the 17th of September and Sir W. H. White has been chosen as president. In 1914 the meeting is to be in Australia. Invitations for the two following years have been received from Manchester and Newcastle.

A report by Dr. Franklin Parsons on the utility of isolation hospitals has been issued by the local government board as a supplement to their last year's report of their medical officer. The construction and design of these hospitals is considered and suggestions are made for reducing their cost. Dr. Parsons visited twenty-four of these existing hospitals and reports upon them. The board's medical officer introduces the report in a preparatory letter, describing it as containing information very valuable to sanitary authorties and their officers who may have to prepare plans for new isolation hospitals.

The death has occured of Dr. Reginald Thompson, aged 78. He was on the staff of the Consumption Hospital, Brompton, as acting and consulting physician for about 30 years. He was M. D. Cantab. 1863; was elected F. R. C. P. in 1868. He was appointed secretary of the Royal Medico-Chir. Society in 1880 and V. P. in 1883. He wrote "The Different Aspects of Family Phthisis" (1884) and contributed on various subjects connected with consumption to the societies and journals.

The death of Mr. L. A. Bidwell, senior surgeon to the West London Hospital, took place on Monday, September 2, at 4 o'clock. He took the M. R. C. S. in 1887 and the Fellowship in 1890. Besides other appointments, he was surgeon-major in the Royal Hussars Yeomanry. He wrote a "Handbook of Intestinal Surgery" in 1905 and had been a liberal contributor to societies and journals, particularly on points connected with the surgery of the abdomen.

Surgeon-General (retired) D. A. Campbell Fraser, M. O. Edin., died on the 28th ult., aged 80. He served in the army medical department about 40 years, and had held staff appointments at Malta and Netley. Had been Red Cross Commissioner in the Russo-Turkish War and received the medal for Ashanti, 1873-4. He also had the Roumanian Star.

Staff-Surgeon R. N. Charles Ede (retired) has died a nonagenarian. The latter part of his life was in private practice, contrasting strongly with his earlier career. Qualifying in 1844 he entered the navy the next year and first served in the Pacific zone four years, and then was appointed surgeon and naturalist to the *Assistance*, going to the Arctic region in search of Sir John Franklin. They found the winter quarters and débris of Franklin's expedition. Surgeon Ede was in sledge parties by which further traces were found, and returned to the ship with frost-bitten and snow-blind patients.

Progress of Medical Science.

Boston Medical and Surgical Journal.

September 19, 1912.

1. Indications for the Major Obstetrical Operations F. S. Newell.
2. The Salvarsan-Calomel Treatment of Syphilis. W. F. Boos.
3. The Bacteriological Diagnosis, Intubation and Antitoxin Treatment of Diphtheria. E. H. Place.
4. The Significance of Symptoms in Pulmonary Tuberculosis. H. D. Chadwick and H. S. Wagner.

2. The Salvarsan-Calomel Treatment of Syphilis.—W. F. Boos believes that whether or not salvarsan alone is capable of curing syphilis is an open question. Its action is undoubtedly much more powerful and rapid than that of calomel, but perhaps it is not as enduring as calomel action. When an early and effective calomel treatment is used less salvarsan is necessary. In any event, a proper combination of the two drugs makes it possible to cure syphilis in one-sixth the time required when calomel alone is used; and the treatment is much milder. In secondary cases the author usually begins with a calomel treatment of 8 intramuscular injections: 2 of 70, 2 of 60, 2 of 50, and 2 of 40 milligrams. If the patient is afflicted with serious secondary symptoms such, for instance, as laryngeal syphilis with an intense and constant cough and almost complete loss of voice, he is immediately given two or three intravenous injections of salvarsan, three or four days apart, before the calomel treatment is begun. The injections of calomel are given every four to five days, and if the patient's condition allows he receives two more injections of 40 milligrams each when the first 8 are complete. The calomel makes the patients feel considerably prostrated in most cases, although some of them bear up remarkably well under the injections. During the calomel treatment the patient must take the very best care of himself; he should stop work if possible, he must go to bed immediately after each injection, and he must refrain from the use of alcohol for an indefinite period. It is noted that the intravenous injections of salvarsan, which follow the calomel after the lapse of a few days, quickly bring the patient back to a state of comparative well-being. The injections of salvarsan are made at intervals of from three to four days; and five or six injections are given in all. In ordinary cases men receive from 0.5 to 0.6 gram salvarsan at each treatment, while women are given somewhat less. The calomel must be given as a fine suspension in oil of sesame.

4. Significance of Symptoms in Pulmonary Tuberculosis.—H. D. Chadwick and H. S. Wagner emphasize the importance of watching for early subjective symptoms, as by them a diagnosis may be made before ulcerative processes occur to free the bacilli. The finding of bacilli depends much upon the persistence of the search made for them. Tuberculosis, even in advanced form, may be present without bacilli appearing in the sputum. In suspicious cases it is better to give patients the benefit of the doubt by telling them that their symptoms indicate early tuberculosis and that to prevent further progress it will require a radical change in their mode of living. If a patient is sent to a sanatorium with a doubtful diagnosis no harm will have resulted, even if the condition should prove to be a simple bronchitis or an influenza infection.

New York Medical Journal.

September 21, 1912.

1. Further Notes on the Sanitary Control of Prostitution in Some European Cities. F. Bierhoff.
2. Skin Diseases in Relation to the Nervous System. S. Pollitzer.
3. The Newer Teachings of the Diseases of the Alimentary Canal. M. I. Knapp.
4. Syphilis and Gonorrhea as Depicted in the "Songes Drolatiques de Pantagruel." C. G. Cumston.
5. Some Diagnostic Aids in Gastric Diseases. E. A. Aronson.
6. Clinical Observations of Trachoma. H. M. Friedman.
7. Ten Sex Talks to Girls. I. D. Steinhardt.
8. Mitral Stenosis and Pulmonary Tuberculosis. W. Narins.
9. Cardiac Disease and Pulmonary Tuberculosis. G. Seymour.
10. The Child and Constipation. N. G. Weill.

2. Skin Diseases in Relation to the Nervous System.—By S. Pollitzer. (See MEDICAL RECORD, VOL. 81, page 690.)

5. Diagnostic Aids in Gastric Diseases.—E. A. Aronson states that from study of the diagnosis of gastric diseases, both clinically and in the laboratory, he is compelled to admit that as yet there are no absolutely reliable diagnostic aids and that consequently much is left to be desired. Every case demands, in addition to a careful consideration of the subjective history, the application of every possible laboratory aid to the physical examination. It is still frequently a most difficult thing to make certain a differential diagnosis between a functional and an organic lesion. The positive diagnosis of an ulcer is not always easy, for even a hematemesis cannot be considered a cardinal symptom. No great ingenuity is required to diagnosticate a malignant growth if one can palpate a distinct tumor of the stomach and find all other signs and symptoms of malignancy. The early diagnosis of this disease, in the absence of such a mass, despite the most careful chemical study and the applicaion of all the known biological tests, remains the same difficult problem encountered by preceding generations of clinicians. The author is optimistic enough to believe that this difficulty will also be overcome in the future, and perhaps that one's greatest aid may lie in the further development of röntgenology

6. Trachoma.—H. M. Friedman notes that trachoma is a chronic, malignant, and highly infectious disease of the conjunctiva, attacking principally people living in crowded and unhygienic surroundings. It almost always commences in the palpebral margin of one of the upper lids; it is pathologically a diffuse subepithelial, white celled infiltration of the conjunctiva; its most serious complication is pannus; and a cure is effected by the replacement, in a characteristic manner, of the mucous membrane by scar tissue. The ideal treatment is any method which promotes scarring, with the extirpation of isolated areas which have finally refused to heal.

8. Mitral Stenosis and Pulmonary Tuberculosis.—W. Narins points out that mitral stenosis and pulmonary tuberculosis may occur in the same individual. This fact is now admitted by almost all authorities. Franke's statement that he never saw a case of tuberculosis following a mitral stenosis with well marked hypertrophy of the right ventricle is clearly only personal experience. In a series of positive cases of pulmonary tuberculosis treated at the author's tuberculosis clinic, there were sixty-two with cardiac complications of all sorts. There were twenty-five cases of mitral insufficiency. There were seven cases of mitral stenosis and one of mitral stenosis and insufficiency. The author concludes from his experience that the passive congestion of the lung due to the mitral stenosis acts in a favorable way on the tuberculous process in the lungs.

9. Heart Disease and Pulmonary Tuberculosis.—N. G. Seymour finds that one of the most frequent errors encountered in diagnosis is that of pulmonary tuberculosis in cases of uncomplicated chronic endocarditis; that the combination of these two conditions is not very unusual, and that therefore the recognition of an undoubted heart lesion does not preclude the possibility of a coexistent tuberculosis of the lung.

American Medical Association.

September 21, 1912.

1. How May the Science of Therapeutics Be Advanced? J. L. Miller.
2. High-Frequency Desiccation. Fulguration and Thermoradiqtherapy. Their Uses in Therapeutics. W. L. Clark.
3. Bacillary Dysentery. A Contribution to the Study of the Epidemiology. C. J. Hunt.
4. The Eradication of the Social Diseases in Large Cities. R. N. Willson.
5. Urobilin: Its Clinical Significance. Preliminary Report. R. L. Wilbur and T. Addis.
6. My Experience with Diabetic Patients Living Ten or More years. E. P. Joslin.
7. Successful Cultivation of Malarial Plasmodia. C. C. Bass.

8. A Routine Method of Opening the Heart with Conservation of the Bundle of His and the Sinoauricular Node. B. S. Oppenheimer.
9. Description of a New Urethrotome. H. McC. Young.
10. The relation of the Parathyroid Gland to Infantile Tetany. C. G. Grulee.
11. Cesarean Section Done Under Spinal Anesthesia for Eclampsia: Report of Three Cases. J. P. Marsh.
12. Subclavian Aneurysm with Successful Endoaneurysmorrhaphy. E. Drennan.
13. A Case of Sporotrichesis in North Dakota: Probable Infection from Gophers. G. M. Olson.

3. Bacillary Dysentery.—C. J. Hunt believes that while there is some warrant for the terms "dysentery" and "paradysentery," the more general one of "bacillary dysentery," insofar as preventive medicine is concerned, simplifies the problem both of diagnosis and of sanitary supervision. There is apparently a notable lack of recognition of the etiology and probably of the pathology of cases infected by members of the dysentery group, resulting in a longer continuance of the infecting source and a higher mortality; this is evidenced in the varied diagnoses such as "diarrhea," "winter cholera," "intestinal grip," "grip," "gastric fever," "intestinal disorder" and many others. Dependent on the casual association of the *B. typhosus*, outbreaks of bacillary dysentery may be followed within ten to twenty-one days by a marked increase in the number of typhoid fever cases. This occurred in five out of nine instances in Pennsylvania and may serve as a warning of the presence of the more serious infection; the immediate abatement of the sources would probably decrease the morbidity and mortality due to typhoid fever.

5. Clinical Significance of Urobilin.—By R. L. Wilbur and T. Addis. (See MEDICAL RECORD, Vol. 81, page 1115.)

6. Diabetic Patients Living Ten Years or More.—By E. P. Joslin. (See MEDICAL RECORD, Vol. 81, page 1119.)

7. Cultivation of Malarial Plasmodia.—C. C. Bass reports that he has succeeded in cultivating the malarial plasmodia in human serum, in Locke's fluid (from which calcium chloride, is omitted) and in human ascitic fluid. In the majority of cases it was found that dextrose must be added to the medium in order to secure growth of the parasites. The plasmodia grow in a thin layer near the top of the cell sediment, beneath which zone the parasites all die. The parasites have been cultivated only in the red cells of human blood and are destroyed by the leucocytes as soon as they are liberated from the erythrocytes, and also by the serum, Locke's fluid, ascitic fluid, or, by any of the other media experimented with. Plasmodia develop readily in the red corpuscles, apparently digesting the substance of the corpuscles, and segmentation can be followed with great satisfaction in the cultures. The most favorable temperature found for the cultivation of these protozoa is about 40° C. They will usually live at a lower temperature, but often will not grow, and as a rule will not multiply. Positive cultures have been obtained from twenty-nine cases of estivoautumnal, six cases of tertian and one case of quartan malaria. The cultures have been carried on as far as four generations from the parent culture and with proper attention to technique can doubtless be maintained indefinitely. Only the asexual cycle of the parasite has been observed in the author's cultures.

10. The Parathyroids and Infantile Tetany.—C. G. Grulee states that there is no absolute evidence that lesions of the parathyroids are responsible for cases of infantile tetany. The removal of the parathyroids in adults and animals produces a condition which, if not identical, closely simulates spasmophilia. In a majority of cases of infantile tetany there is found some lesion of the parathyroid glands. There is strong reason to believe that the same disturbance of salt metabolism occurs in the tetany of animals produced by thyroidectomy as in the spasmophilia of infants. It is likely that lesions of the parathyroids are causal factors in infantile tetany, but that it has not been proved that such lesions must exist in all cases.

The Lancet.

September 14, 1912.

1. Eye Symptoms and the Early Diagnosis of Diseases of the Nervous System. J. Hinshelwood.
2. Septicemia with Local Endocardial Lesion. With Records of Nine Cases. J. Henderson.
3. Carcinoma and Sarcoma of the Same Breast. E. H. Kettle.
4. Two Cases of Acute Pancreatitis; Abdominal Drainage; Appendicostomy; Recovery. W. Billington and B. G. Goodwin.
5. Chronic Edema of One Leg in a Child. E. O. Hughes.
6. The Prophylactic Use of X-Rays Before and After Operation for Malignant Disease. R. Knox.
7. The Care of Consumptives. A Review and a Forecast. F. G. Lyon.
8. Subcutaneous Rupture of the Kidney; Intraperitoneal Hemorrhage; Expectant Treatment; Recovery. E. G. Stanley.
9. After-Care Under the National Insurance Act. H. W. McConnel.
10. Health of Europeans in East Africa. A. E. Horn.

1. Eye Symptoms in Nervous Diseases.—J. Hinshelwood presents a number of examples showing the intimate connection which frequently exists between the eye symptoms and the diagnosis of diseases of the nervous system. He directs special attention to the fact that by careful and systematic observation of the eye symptoms in all cases of disease of the nervous system the physician is able in many cases to arrive at a diagnosis at a much earlier period than would be possible from consideration of the other symptoms alone.

2. Septicemia with Local Endocardial Lesions.—J. Henderson states that cases of infective or malignant endocarditis are now recognized to be really varieties of acute septicemia, often cryptogenetic, with localization on the endocardium, though the symptoms are not necessarily those of the local lesion. The condition is one which is undoubtedly much more frequent than the records show, as ofttimes there is no symptom or physical sign to suggest such a lesion. The more acute forms are most often recognized, but the more chronic types may only be recognized very late in the course of the disease, or may defy diagnosis to the end. Textbooks do not usually portray anything like a complete clinical picture of the disease—its mode of onset, its symptoms, and its course are so varied. The textbook classification recognizes various distinct types. Two special types are described, the typhoid and the septic, the former being the much more common. A third, and much less frequent type, is mentioned where the predominant symptoms are meningeal. In all these the cardiac symptoms are in the background. There is in addition a large group in which the cardiac features are pronounced, and often these prove to be the most chronic and most difficult to recognize as malignant. From a diagnostic point of view three cardinal signs may be recognized: (1) The presence of valvular disease as determined by cardiac examination; (2) the occurrence of embolism; and (3) the discovery of microorganisms in the blood stream. If these three signs occur together a confident diagnosis of infective endocarditis may, in the great majority of cases, be made, although often the diagnosis must be made on much more slender foundation.

4. Acute Pancreatitis.—W. Billington and B. G. Goodwin allude to the rarity of recovery from acute hemorrhagic pancreatitis and report two cases recently under treatment in the Queen's Hospital, Birmingham. In each case both sacs of the peritoneum were drained, appendicostomy was performed, and through the opening in the appendix large quantites of saline solution were introduced into the large bowel. The amount of fluid absorbed was surprising and the effect was most gratifying, a practically uneventful recovery following the operation in each instance.

5. Chronic Edema of One Leg in a Child.—E. O. Hughes records a case of this condition in a girl aged six years. It is classed provisionally at least, with those instances of non-congenital edema of the lower extremities in children, a fair number of which have by now been reported, and which resemble this one both in many of their clinical features, and in the absence of any known path-

ology—the title "trophedema" (Meige) being both vague and of doubtful warrant. A few of these cases have been unilateral. On the other hand, in the case of the author's patient the general character of the edema and its anatomical accuracy afford so complete a picture of obstruction of one external iliac vein that any other diagnosis could only be safely accepted if a direct exploration of the parts proved negative.

7. **The Care of Consumptives.**—T. G. Lyon concludes that no reliance can be placed on specific remedies. Sanatoria conducted on rational lines are essential in the treatment of those consumptives whose life-work is under the direction of others. Consumptives of humble means should be provided for by an extension of the present hospital system, aided by the State and supplemented by additional sanatoriums. The sanatorium treatment, owing to its slacking influence, is not fitted to patients in positions that require the display of initiative and entail responsibility. These patients are best treated apart from others, without isolation from their usual surroundings, and as far as possible in touch with their business.

British Medical Journal.

September 14, 1912.

1. The Nature, Origin, and Maintenance of Life. E. A. Schäfer.
2. The Influence of Muscular Exercise and Open Air on the Bodily Functions. L. Hill.

1. **The Nature and Origin of Life.**—By E. A. Schäfer.

(See MEDICAL RECORD, September 28, 1912, page 582.)

2. **Influence of Muscular Exercise and the Open Air on the Bodily Functions.**—L. Hill concludes that all the efforts of the heating and ventilating engineer should be directed towards cooling the air in crowded places and cooling the bodies of the people by setting the air in motion by means of fans. In a crowded room the air confined between the bodies and clothes of the people is almost warmed up to body temperature and saturated with moisture, so that cooling of the body by radiation, convection, and evaporation becomes reduced to a minimum. The strain on the heat-regulating mechanism tells on the heart. The pulse is accelerated, the blood is sent in increased volume to the skin, and circulates there in far greater volume, while less goes through the viscera and brain. As the surface temperature rises, the cutaneous vessels dilate, the veins become filled, the arteries may become small in volume, and the blood pressure low, the heart is fatigued by the extra work thrown upon it. The influence of the heat stagnation is shown by the great acceleration of the pulse when work is done and the slower rate at which the pulse returns to its former rate on resting. The increased percentage of carbonic acid and diminution of oxygen which has been found to exist in badly ventilated churches, schools, theaters, and barracks, is such that it can have no effect upon the incidence of respiratory disease and higher death-rate, which statistical evidence has shown to exist among persons living in crowded and unventilated rooms. The conditions of temperature, moisture, and windless atmosphere in such places primarily diminishes the heat loss, and secondarily the heat production—that is, the activity of the occupants, together with the total volume of air breathed, the oxygen taken in, and the food eaten. The whole mechanism of the body is thus run at a lower plane, and the nervous system and tone of the body are unstimulated by the monotonous, warm, and motionless air. If hard work has to be done it is done under conditions of strain. The number of pathogenic organisms is increased in such places, and these two conditions run together—diminished immunity and increased mass influence of infecting bacteria. The bodily mechanisms become trained to maintain the body heat by habitual exposure to open-air life. The risk lies in overheating our dwellings and overclothing our bodies.

Berliner Klinische Wochenschrift.

September 2, 1912.

Vital Coloration and Chemotherapy.—Goldmann continues his labors in this field, as to which the profession is much confused. He wishes to set it right. A true vital stain must remain in the tissues for a long time; it must not be too toxic; it must be able to penetrate into the cell interior, etc. Substances which come up to these standards are trypan blue, isamin blue, and pynol blue. Vital stains are of two classes, one of which acts rapidly, the other slowly. Trypan blue belongs to the former, for it stains tissues *in vivo* within three hours. Isamin blue belongs to the second class. The more dilute the solution and the slower the absorption, the more marked is the histological picture. The distribution of the vital staining is highly suggestive. In a pregnant animal it is notably in evidence about the animal's dugs. But if an animal which is vitally stained conceives, then the external tissues become decolorized and the staining matter appears in the placenta. Further, if a disease focus is set up in a vitally stained animal it attracts the staining principle. What is the meaning of this displacement? The internal organs which naturally attract the stain are the kidneys. This we associate with an attempt at excretion. No other organ with excretory outlet tends to store up the coloring matter. The ductless glands take up the latter in a manner not haphazard, but characteristic for each. A complete survey of the tinctorial qualities of the various tissues appears to show that the cells which stain are essentially migratory, histogenetic, and phagocytic, and their tinctorial property is the result of a peculiar chemotactic sensitiveness. We can therefore comprehend why the breasts of the gravid animal and the placenta attract the coloring matter because cells of this type naturally abound in such organs which also tend to store up glycogen and fat. The embryo is not stained, so that one may also regard the storing up of the stain by the placenta as protective. In the presence of the new physiological and pathological aspects of vital staining the pharmacological significance must recede for the time being. The latter is chiefly concerned with the utilization of the vital stain as a vehicle for some specific substance able to destroy pathogenic cells, bacteria, etc.

New Development in the Serotherapy of Pneumonia.—Géronne writes optimistically of a new phase in the use of antipneumococcus serum in pneumonia. At Wiesbaden the mortality has been running over 30 per cent., many deaths occurring a week or ten days after the crisis, while disastrous complications were common. Treatment seemed almost valueless. The national resource appeared to be early intravenous injection of a serum, but the author hesitated to use the one ordinarily available. A new preparation made by the local serum institute specially devised for intravenous exhibition was then introduced in routine application as soon as the diagnosis was established. The dosage was high for the purpose—20 c.c. at least for initial dose, doubled in severe cases, and repeated daily when benefit was not apparent. A successful serum should be able to modify favorably and promptly the course of the disease, and this occurred in almost all of the series. In some a shortening of the course and premature crisis was apparent. The local disease process did not appear to be affected, and it is even not impossible that resolution of the exudate may be retarded. In the two cases which seemed most conclusively aborted the patients continued to have rusty sputum for a number of days. A specific therapy entails its own drawbacks. When bacteria are killed their toxins are set free, when tumor cells are destroyed they give rise to sapremia, and when a toxemia is neutralized the local lesions may show aggravation.

Münchener medizinische Wochenschrift.

September 3, 1912.

Acute Blindness from Drug Poisons.—Harnack considers this subject with chief emphasis upon methyl alcohol blindness. One type of blindness, due to such dissimilar drugs as methyl alcohol, nitrous acid, and atoxyl, comes about because of the action of activated oxygen on the nervous elements of the eye. The process which causes blindness is an acute inflammatory-degenerative one attacking the said elements. Of other poisons able to destroy vision—quinine, cocaine, and filix mas—the mechanism is entirely dissimilar in that there is produced a violent spasm of the retinal vessels which has the same result as an embolus of the central artery. The obstructed vascular area perishes and the nerve elements undergo atrophy.

Familial Occurrence of Facial Paralysis.—Weber refers to a recently reported episode in which facial paralysis was known to have occurred in grandmother, mother, and child. A few other cases of this familial incidence were already upon record. To this material the author adds another family affected with so-called rheumatic facial paralysis. The first patient seen was a girl aged nine years who had waked in the morning with a right-sided lesion. All the branches of the facial were involved. There were no collateral phenomena, nor was there anything to explain the case. There was spontaneous recovery in about three weeks. The author had already treated two sisters, the patient's aunts, for the same affection, the mother and grandmother having been free from attacks. The cases of the aunts were similar throughout to that of the patient. Only in one case there were symptoms suggesting an aural reflex. This case was also more severe and protracted, and is the only one in which a second attack has thus far occurred. There were thus four cases in the same family. The limitation to one sex is characteristic of much familial incidence of disease.

Biological Diagnosis of Pregnancy.—Abderhalden continues his work upon this new resource. The technique is still very complicated and the method requires familiarity to give results. The reaction itself is sharp and unmistakable. Controls, however, are of great use when there is a possibility that the test materials have become too old for employment. The reaction is based on the fact that homogeneous albumin, which is, however, alien in the blood, is decomposed by the enzymes of the latter. Several tests may be employed. In one the blood serum or plasma of a granula when mixed with placenta albumin or peptone will alter the composition of the latter, as shown by the polariscope. Since this test might exceptionally fail the method of dialysis will serve as a check. A special polarizing tube and dialyzing apparatus are employed. When properly carried out pregnancy may be diagnosticated by the first month, and not only human pregnancy, but gestation in all animals thus far tested. Not only normal, but tubal, pregnancy, vasicular mole, and retained placenta have been recognized. The full details of the technique, as in all biological reactions, are too long for recapitulation.

Deutsche medizinische Wochenschrift.

September 5, 1912.

Artificial Impregnation in Epididymitis Duplex.—Rohleder, the authority on artificial impregnation, considers this very important phase of the subject. Many a great estate has had no direct inheritor because the owner had been sterilized by an early gonorrhea. Fortunately, double epididymitis is rare. Two or more problems arise in this connection. One is the possibility of a plastic restoration of the lumen of the epididymis. This has been effected in a few cases, perhaps. If the case is seen early enough it may be possible to cause absorption of the exudate and thus restore the lumen. The rest of the alternative consists in obtaining semen from the testicle, the latter being intact, and practising artificial impregnation. This latter course does not necessarily exclude attempts to restore the patency of the ducts. The author reminds us that with double epididymitis there is usually prostatitis, so that restoration of the lumen need not mean patency; and if healthy prostatic fluid is necessary for the activity of the spermatozoids artificial impregnation with the direct product of the testicle could fail, more especially because the passivity of the female in the act is accompanied by failure of cervical mucus, a second element in activating the sperm. These considerations, however, are largely theoretical. The author suggests that experiments be made with cases not over two years old; that the semen be first examined under the microscope; that the patient's prostatic fluid obtained by stripping also be examined. If the latter is healthy an ejaculate could be obtained by intercourse with a condom. This might be added to the semen under certain conditions. It is also possible to treat a diseased prostrate until the ejaculate becomes normal. The author professes doubts that a successful impregnation of any sort has occurred after double epididymitis. We only know that living semen can be obtained by testicular puncture, but in too slight amount to be injected into the uterus without dilution. The latter must guarantee that the spermatozoids will keep active until they can reach the ovum, not a simple matter under the most favorable conditions. The proper vehicle should be healthy prostatic fluid.

Physical Therapy of Psoriasis.—Axmann lauds non-pharmaceutical procedures for the management of psoriasis. Even malignant diseases show a higher percentage of actual recoveries than this benign affection, of which it is to be doubted if a single radically cured case has ever been seen. The author some time ago reported the use of carbonic acid snow to destroy permanent foci. He also uses *x*-rays and the uviol lamp on obstinate lesions. For recent small lesions he now recommends the use of cold, ice being applied for from fifteen to thirty seconds. It is thus possible to treat the entire back in one session. The ice is applied by a special device. Patients actually prefer the discomfort of the cold to that of grease, with its staining of underwear and bedding. This management should consort well with the dietetic-hygienic treatment.

Diabetes and Pregnancy.—Bingel states that but eighty cases are upon record in which pregnancy has accompanied true diabetes—a remarkable fact when we consider the frequent association of gestation with simple glycosuria. That failure of conception is due to diminished libido sexualis is difficult to believe because anaphrodisia is common enough in women who conceive readily. A more probable reason is a diabetic atrophy of the genital structures sometimes known to occur, or endometritis, which is common in diabetics. About one-third of the diabetic pregnancies have resulted in abortion. In some cases the women were healthy at conception, developing acute diabetes afterwards, but as a rule diabetes preceded conception. Gestation does not aggravate diabetes sufficiently to justify therapeutic abortion.

Spirocheta Phagedenis—A New Species.—H. Noguchi has succeeded in isolating a hitherto undescribed spiral organism in pure culture from a case of mild phagedenic ulcer on the external genitalia of a woman. For this organism the name *Spirocheta phagedenis* is proposed. *Spirocheta phagedenis* is a strict anaerobe and grows in the presence of fresh tissue in ascitic agar. It produces no apparent change in the media, but a somewhat offensive odor develops in the culture tube. *Spirocheta phagedenis* incites a slight inflammatory reaction in the skin of a *Macacus rhesus* monkey and in the skin and testicles of rabbits. Its etiological relationship to the phagedenic lesions on the external genitalia has not yet been determined.—*Journal of Experimental Medicine.*

Insurance Medicine.

SUGGESTIONS TO MEDICAL EXAMINERS.

BY THE INSURANCE EDITOR.

THE URINE.

Tests for Sugar.—If there is much albumin in the urine, it should be removed before testing for sugar, as it may interfere with the reaction. This may be done by rendering the urine faintly acid by the addition of two or three drops of acetic acid and boiling. Then filter the specimen to remove the coagulated albumin. The urine is then ready for the sugar test.

The urine must be fresh, as a small amount of sugar might be lost by decomposition.

The best reduction tests for the examiner in the field are those in which the salts of copper and bismuth are used, but as other substances besides sugar possess the power of reducing copper and bismuth salts, the reduction tests are only of negative value. The absence of reaction, then, indicates the absence of sugar, but the presence of a reaction simply shows that some reducing agent, probably sugar, is present.

In order to determine whether or not the reducing agent is sugar, the examiner must resort to the fermentation test, this being the only reliable positive test. The phenyldrazine test is no longer regarded as positive, as it has been discovered that the characteristic crystals may form through the influence of other substances besides sugar. Furthermore, the characteristic crystals are sometimes not produced even when sugar is present.

Fehling's Test. The two solutions should be kept separately in well-stoppered bottles in the dark. When the reagent is wanted, equal quantities should be taken from each bottle and well mixed. The resulting liquid is a transparent dark blue. One dram of this should be put in a test-tube and gently boiled. Then urine should be added, a few drops at a time, and the boiling continued. If sugar be present, the solution assumes an opaque color, and soon a dense, yellowish red sediment falls to the bottom. Should no change occur, urine must be slowly added until its volume equals but does not exceed that of the reagent. After the urine is added, boiling should not continue more than half a minute, for the reaction is prompt. Simple discoloration of the reagent does not indicate sugar, nor does the formation of a grayish cloud which is due to the precipitation of earthy phosphates.

Haine's Test. The formula for this solution was devised for the purpose of furnishing a reagent that is not liable to spontaneous decomposition. Late experience, however, has demonstrated that it will not always keep indefinitely as was formerly supposed, and that it is important for the examiner to observe, after boiling the test solution and before adding the urine, whether or not any of the copper salt has been reduced. If the solution remains clear on boiling, it has not deteriorated.

In testing with this solution put about 1 dram in a test-tube and gently boil. Then add the suspected urine, drop by drop, up to eight drops—not more—while continuing to boil. The same reaction occurs as with Fehling's solution. If much sugar is present it will show with the first drop or two, but in no case should more than eight drops of urine be added.

Nylander's Test. This is the best solution in which bismuth is used as a reagent. It is a modification of Boettger's test and consists of two grams (30 grains) of bismuth subnitrate and four grams (1 dram) of Rochelle salt (potassium sodium tartarate) dissolved by the aid of gentle heat in 100 c.c. (26½ fluid drams) of a 10 per cent. solution of sodium hydrate. It has the advantage over Fehling's and Haine's solutions of not spoiling and it is not so readily reduced, being unaffected by chloral, pyrocatechin or glycosuric acid. It is, however, less delicate than Fehling's, detecting only 1/10 per cent. of glucose and that imperfectly, but that is good enough for all clinical work. The most delicate method of applying the test is to fill a test tube about half full of urine and then add about one-third as much of the reagent, mixing them well together. Boil the upper portion, and if sugar is present a dark brown or black precipitate of metallic bismuth and bismuth suboxide is produced. Boiling should be maintained for one minute if necessary. The formation of a light-gray cloud is not significant, as it is simply due to earthy phosphates.

Fermentation. When one of the reduction tests previously described fails to show the presence of sugar, the result may be regarded as final and no corroborative test is called for. If, on the other hand, a reaction is obtained with any one of them, the strong probabilities are that it is due to sugar and the examiner must assume this to be the case until he proves by means of the fermentation test that no sugar is present and that the reaction was due consequently to some other agent. In this test the sugar present in the urine is fermented by the aid of ordinary yeast and the carbon dioxide given off is collected and measured. As fermentation proceeds, the gas collects in the upper part of an inverted tube, driving out the urine. The simplest and best way of applying the fermentation test is by means of Einhorn's saccharometer. The following precautions must be observed:

(a) The temperature should preferably be between 80° and 90° F.

(b) While fermentation is going on, the temperature must never rise above 115° F., for yeast cells are killed at that point.

(c) The temperature should not be constantly below 60°, for fermentation proceeds very slowly or not at all below this point.

(d) In every case a control test should be made. This should be done with a normal urine, known not to contain sugar. This control is of great value, for as all yeast contains a little glucose, the presence of a bubble of gas at the top of each tube shows the yeast is fermenting properly, and at the same time the examiner can see whether or not more gas is forming in the suspected urine.

(e) In a doubtful case at least twenty-four hours should elapse before declaring that the test gives no reaction.

(f) The urine must be free from antiseptics or preservatives.

Proposed Changes in Workmen's Compensation Act.—Recently the Washington State Medical Society went on record as the result of a conference with members of the industrial insurance commission, prominent employers, and others as favoring the following changes in the existing workmen's compensation act: The establishment of a first aid fund; removal of the $10 fee limit for expert testimony, establishment of a minimum charge of $5 for special examinations of injured workmen, and of a fee of $2.50 for accident reports, to be paid for by the taxpayers.

Book Reviews.

DIRECT LARYNGOSCOPY, BRONCHOSCOPY, AND ŒSOPHAGOSCOPY. By Dr. W. BRÜNINGS. Translated and Edited by W. G. HOWARTH, M.A., M.B., B.C. (Camb.). F.R.C.S. (Eng.). Pp. v-370. Price $5.00. New York: William Wood & Co., 1912.

MR. HOWARTH has rendered a very distinct service to the profession in translating this excellent work, and is to be congratulated on the result of his effort. It can be fairly said that Brünings' untiring zeal in perfecting his direct instruments and technique has served to make known the details of this highly specialized work throughout the civilized world. Thoroughness is one of the most insistent qualities of this famous teacher, and therefore in this work not a detail has been overlooked, so that even the unpractised physician who is confronted by his first foreign body patient may, after a careful study of this volume, approach the case with a feeling of assurance. There are chapters on local and general anesthesia with the complications that may arise therefrom, on the mistakes and difficulties one encounters, on the manipulation and care of instruments, on endoscopy in children, and on esophagoscopy. The book contains many excellent plates and figures and is the most comprehensive treatise of its kind which has as yet been published.

VORLESUNGEN ÜBER DIÄTBEHANDLUNG INNERER KRANKHEITEN. Gehalten vor reiferen Studierenden und Ärzten. Von Prof. Dr. H. STRAUSS, Direktor der inneren Abteilung des jüdischen Krankenhauses in Berlin. Mit einem Anhang "Winka für die diätetische Kuche" von ELISE HANNEMANN. Vorsteherin des Haushaltungs-Lehrerinnen Seminars und der Kochschule des Lette-Vereins in Berlin. Dritte, vermehrte und verbesserte Auflage. Price 8.60 marks. Berlin: Verlag von S. Karger, 1912.

THREE editions of this book have appeared within four years, which amply indicates the increasing circle of those who would profit by the valuable course of lectures on dietetics given by Prof Strauss in Berlin. These lectures are, however, presented in a more elaborate form than originally delivered, and after each one there is appended a comprehensive bibliography. The present edition contains many additions and revisions that have been demanded by recent research; this is particularly apparent in the sections dealing with gastric ulcer, heart disease, diseases of the kidney, gout, and diabetes. A new chapter on the dietetics of old age has been added. One of the important features of this volume is the comprehensive list of tables giving the chemical composition of the various nutrients and accessory articles of food both in the raw and in the prepared state. The section on "hints for the diet kitchen" contains a large number of valuable recipes in addition to the clear instructions regarding the preparation of food for the sick.

ON BRONCHIAL ASTHMA, ITS PATHOLOGY AND TREATMENT. By J. B. BERKART, M.D., late physician in the City of London Hospital for Diseases of the Chest; Corresponding Member of the Societé Royale des Sciences Médicales et Naturelles de Bruxelles, of the Physikalish Medizinisch gesellschaft of Würzburg, of the Société de Médecine de Paris, etc. Revised and abridged, third edition. Price, $2.00 net. London, Edinburgh, New York, Toronto and Melbourne: Henry Frowde, Oxford University Press, 1911.

THE present edition of this well-known work represents not only a revision, but also an abridgment of the former edition. The latter change has been effected by a discussion of only the most important practical points pertaining to the subject and the omission of needless theoretical discussions. The author deals in turn with a review of the current pathology, and with the clinical history, the pathological anatomy, the nature and causes of the dyspneal paroxysms, the diagnosis, and the treatment. His theory of the causes of asthma is mainly as follows: The dyspnea is a symptom of, or an accident connected with, some form or forms of bronchial catarrh of chronic nature. The dyspneal paroxysms are seen only in individuals in whom the general nutrition is more or less impaired. When the accumulated catarrhal products form an impediment sufficiently great, an intense dyspnea ensues, and lasts until the obstacle is for the time removed and expectorated. One of the measures that the author has found to be successful in the treatment of cases in which other and orthodox methods of removing the obstruction have failed, has been the injection of diphtheria antitoxin. In some unknown manner this has a solvent action upon the fibrinous exudation. Among the many other measures, dietetic, climatic, hygienic, and medicinal, which the author discusses in detail is the employment of frequent hot baths. He finds no contraindications to the use of morphine for meeting the pressing needs of the moment. Anyone who has ever treated a case of asthma, and no practitioner has ever been spared this duty, will find Dr. Berkart's volume a most illuminating and interesting one.

MANUAL OF SURGERY. By ALEXIS THOMSON, F.R.C.S., Ed., Professor of Surgery, University of Edinburgh, Surgeon Edinburgh Royal Infirmary, and ALEXANDER MILES, F.R.C.S. Ed., Surgeon Edinburgh Infirmary. Volume Second. Regional Surgery. Fourth Edition, Revised and Enlarged. With 274 Illustrations. Price $3.50. Edinburgh, Glasgow and London: Henry Frowde and Hodder & Stoughton, 1912.

THE second volume of the series deals with regional surgery and is as complete a manual of the branch of surgery as could be included in a volume of the size presented. The descriptions of the conditions given in this book of some 900 pages are models of terseness, while at the same time enough is said to afford the medical practitioner or student ample opportunity for gaining a good insight into most methods of surgical treatment. The illustrations are numerous and good.

THE CARE OF THE INSANE AND HOSPITAL MANAGEMENT. By CHARLES WHITNEY PAGE, M.D., Assistant Physician, Hartford Retreat, Hartford, Connecticut, 1871 to 1872 and 1873 to 1888; Superintendent Connecticut Hospital for the Insane, Middletown, 1898 to 1901; Superintendent Danvers State Hospital, Danvers, Massachusetts 1888 to 1898 and 1903 to 1910. Member of the American Medico-Psychological Association, the Boston Society of Psychiatry and Neurology, the New England Psychiatric Society, the Massachusetts Medical Society. Price $1. Boston: W. M. Leonard, 1912.

THE writer in his preface styles his book a manual from which a "working knowledge of the best insane hospital methods and possibilities" may be obtained, and from which those interested can qualify themselves for official hospital duties or as philanthropists in the "neglected field" of public administration of the insane. Much of his effort of late years, he states, has been given to the practical elaboration of methods employed by Dr. Conolly, superintendent of the Hanwell Asylum, England, many years ago. Conolly was one of the pioneers of "non-restraint" and non-coercion in the care and treatment of the insane; and the book is to a considerable extent a statement of the internal workings of institutions where "non-restraint" is the practice. The writer does not hesitate to express views in which he will have the cordial sympathy of many asylum superintendents. A hospital with one head and a friendly board of trustees unhampered by politics; the superintendent to combine medcial knowledge with business ability, and a passion for justice; and a competent medical staff, acquainted with up-to-date methods, are some of the features insisted upon. There are chapters on the management of patients and on the nursing staff; and an appendix illustrating the management of a case without "restraint," and the importance of the card index in hospitals. The book is a simple and direct statement of some of the problems of management of hospitals for the insane by one who has had thirty-five years of experience as a medical officer and who would therefore seem to be a competent authority. We commend it to those interested as in line with other good books on the same subject.

CLINICAL DISORDERS OF THE HEART BEAT. A Handbook for Practitioners and Students. By THOMAS LEWIS, M.D., D.Sc., M.R.C.P., Lecturer in Cardiac Pathology, University College Hospital Medical School, Physician to Out-Patients, City of London Hospital for Diseases of the Chest. Price $2.00. New York; Paul B. Hoeber, 1912.

IN this book Dr. Lewis has had the happy idea of amplifying the new knowledge of the mechanism of the heart beat and the methods by which it is gathered for the benefit of the general practitioner, giving only such of the new facts and conclusions, and treating of such of the new methods as are of service at the bedside. The several subjects treated of in the seven chapters of the book are: The Recognition and Identification of Disorders of the Cardiac Mechanism; Sinus Irregularities; Heart-Block; Premature Contractions; Paroxysmal Tachycardia; Auricular Fibrillation; Alternation of the Pulse. The book is one of the most valuable of recent contributions to the modern science of the heart and its irregularities.

FATIGUE AND EFFICIENCY. A Study in Industry. By JOSEPHINE GOLDMARK, Publication Secretary National Consumers' League. Introduction. By FREDERIC S. LEE, Ph.D. Containing also the substance of four briefs in defense of women's labor laws by Louis D. Brandeis and Josephine Goldmark. Price $3.50. New York: Charities Publication Committee, 1912.

THE purpose of this book, which is one of the latest publications of the Russell Sage Foundation, is to show that apart from its humanitarian aspects the shortening of the hours of labor actually conduces to heightening the efficiency and improving the products of industry. The physiological basis of fatigue is carefully analyzed and its manifestations in the various occupations are reviewed in detail. The author displays a sympathetic grasp of her subject and imparts her knowledge with unusual perspicacity of style. The subject matter is divided into two parts. Part I contains the following chapters: Introductory; The Nature of Fatigue; The New Strain in Industry; Some Specific Studies of Physical Overstrain in Industry; Economic Aspect of Regulation: Fatigue and Output; Regularity of Employment; Fatigue and Overtime Work; The New Science of Management: Its Relation to Human Energies; The Enforcement of Labor Laws; Labor Laws and the Courts; Prohibition of Women's Night Work: A Prime Necessity; Conclusion.

Part II summarizes the world's experience upon which legislation limiting the hours of labor for women is based. One cannot better characterize this volume than by quoting the following appreciation from *The Survey:* "It affords a powerful argument for the most advanced position yet taken by the Federal Supreme Court with respect to governmental control over health conditions in industry. The book represents several years' work by one of the officers of the National Consumers' League. Its aim is to present, as a new basis for labor legislation, the results of the modern study of fatigue. It seeks to show what fatigue is, its nature and effects, and to explain the phenomena of overwork in working people. It draws upon the scientific study of fatigue—one of the most modern inquiries of physiological, chemical, and psychological science—for aid in the practical problem of reduing the long working day in industry."

KIDNEY DISEASES. By W. P. HERRINGHAM, M.D., F.R.C.P., Physician to St. Bartholomew's Hospital, etc., etc. With chapters on Renal Diseases in Pregnancy by HERBERT WILLIAMSON, M.D., F.R.C.P., Assistant Physician-Accoucheur to St. Bartholomew's Hospital, etc., etc. Price $5.50. London: Henry Frowde; Hodder & Stoughton, 1912.

IT is a great pleasure to review a medical book in which both the scientific and the clinical aspects of a subject are so happily blended as is the case with the present volume. In addition, the reader's satisfaction is greatly increased by the author's facility of expression and command of an admirable literary style, which makes the work a very desirable addition to the excellent series of Oxford Medical Publications. As the title indicates, the scope of the book is very extensive and the whole range of renal affections, both medical and surgical, comes under consideration. The preliminary chapters dealing largely with the methods of diagnosis, the normal and abnormal constituents of the urine, etc., necessarily include a good deal of matter relative to laboratory procedures which in all cases, though, of course, not exhaustive, is thoroughly sound and reliable. The emphasis laid by the author on the desirability of invariably resorting to several tests when examining the urine for albumin is highly commendable in view of the frequency with which errors in diagnosis result from neglect of this simple precaution. In a later edition the phenolsulphonephthalien test will no doubt be inserted among the methods for determining renal efficiency in place of the complicated and little used procedure of Wright. Very interesting and thoroughly modern chapters are those on hematuria, family hematuria, and paroxysmal and other forms of hemoglobinuria. Edema is also well discussed, and though it might be said that the chapter on uremia is the least satisfactory one in the book it might also be said with equal truth that this is a subject on which it is at present impossible to write a chapter that is satisfactory. As is to be expected, in the chapters on nephritis, the clinician comes strongly to the fore, and in addition to adequate discussions of the pathological lesions well illustrated by case histories and microphotographs we find ample and very instructive directions in regard to the therapeutic and general management of the different forms and phases of the disease. Four chapters on renal disease in pregnancy dependent upon toxemia, pregnancy and chronic nephritis, hematuria in pregnancy, and pyelitis and pyelonephritis in pregnancy are from the pen of Dr. Herbert Williamson, and well deserve the graceful tribute paid them by the senior author in the preface. The latter third of the book is devoted largely to the suppurative renal disorders, hydronephrosis, new growths, calculi, syphilis, tuberculosis, etc., and evidently embodies the results of an unusually wide and intelligent clinical experience. The volume may be most warmly commended as a thoroughly recent and unusually satisfactory treatise on the highly complicated subject of renal disorders.

SEWAGE DISPOSAL. By GEORGE W. FULLER, Consulting Engineer and Sanitary Expert, Member of the American Society of Civil Engineers, the American Institute of Consulting Engineers, the American Society of Mechanical Engineers, the American Chemical Society, the Society of American Bacteriologists, the American Public Health Association, etc. Price $6.00. New York and London: McGraw-Hill Book Company, 1912.

THIS book is designed to be a guide to both the practical sanitarian and the student of the ever-pressing problems of sewage disposal. No other problem of municipal development is at present so perplexing as this one, which, like that of the efficient ventilation of buildings, has led to endless discussion and controversy, not to mention the promulgation of a variety of more or less impractical or unsatisfactory schemes for the relief of conditions which are growing daily more intolerable and dangerous. Not the public alone but health officials and sanitarians generally are demanding more light upon this complex subject.

To all of these Mr. Fuller's book affords real and substantial aid. In it the problems to be solved are clearly stated, and each statement is followed by an exhaustive and impartial review of the steps that have already been taken in the solution of the question. In doing this the author draws upon a wide personal experience in practical sanitation, extending over a score of years, and he is almost too careful to give due credit to all of his predecessors and collaborators in this work. His attitude of mind is judicial and free from prejudice; while he saves himself from becoming too academic by drawing a practical conclusion from every phase of the subject which he discusses. He insists that sentiment should be banished and that the end ought in each case be echieved in the most economical manner, both as regards expense and efficiency. He prefers the Imhoff tank, as the best means yet devised for the sedimentation of sewage, but points out its possible defects.

ENZYMES. By OTTO COHNHEIM, A.O. Professor of Physiology, Heidelberg. Six Lectures Delivered under the Herter Lectureship Foundation at the University and Bellevue Hospital Medical College. First Edition, First Thousand. New York: John Wiley & Sons; London: Chapman & Hall, Limited, 1912.

ALTHOUGH the text of this volume is composed of the lectures delivered at the University and Bellevue Hospital Medical College in this city under the Herter Foundation in 1910, the matter has been arranged in chapter form, so that all suggestion of discontinuity has been removed. The whole subject of enzymology is discussed in all its bearings, but in general terms so as to be appropriate for the needs of the average reader. The methods for the preparation, purification, and investigation of enzymes are described in the light of modern conceptions, but not in sufficient detail to make the book a guide for the worker in this field. Cohnheim's own views, of course, are given full expression and one finds in very succinct and readable form the results of the years he has devoted to the study of these mysterious agencies. The subject is one to interest every medical reader, and clinicians as well as laboratory men will derive much of value from the book. For example it is interesting to see that chymosin or the lab ferment of the older writers is not given a place in the list of eighteen ferments which Cohnhein says occur in the alimentary canal, his standpoint being that the clotting of milk which takes place in the stomach is not due to a special enzyme but is only an intermediate step in the process of peptic digestion. This conception means of course that a vast amount of work done by Hammarsten and his followers must be set aside, but it considerably simplifies the views as to the digestion of the proteids. This is only an instance of the progress that is being made in this fundamental study, and it goes without saying that the present volume forms an excellent résumé of the latest advances.

Society Reports.

AMERICAN ORTHOPEDIC ASSOCIATION.

Twenty-sixth Annual Meeting, Held at Atlantic City, N. J., May 30 and 31 and June 1, 1912.

THE PRESIDENT, DR. VIRGIL P. GIBNEY OF NEW YORK, IN THE CHAIR.

Suggestions for the Second Quarter of the Century.—Dr. VIRGIL P. GIBNEY of New York said that special attention should be called to the many diseases and deformities that had not been relieved by orthopedic measures. He mentioned, as instances in which perfect cures had not been secured, hip disease, Pott's disease of the spine, the spastic contraction in Little's disease, the more obstinate forms of rotary lateral curvature of osseous origin, and poliomyelitis, with its resulting deformities and disabilities.

An Anatomical Study of Many of the Cases of Lame or Weak Back, as Well as Many of the Leg Paralyses.—Dr. JOEL E. GOLDTHWAIT of Boston remarked that the lumbosacral, the lumbosacral transverse, and the sacroiliac joints bore a certain relation to each other in the production of a strain; and that the anatomical position of the lumbosacral cord and the spinal nerve roots with reference to the articular and transverse processes was an explanation of leg pain and paralyses.

Dr. J. T. RUGH of Philadelphia wanted to know whether there was anything in the previous histories of the cases to show that they presented the group of symptoms that Dr. Goldthwait had outlined.

Dr. C. L. STARR of Toronto asked whether there were not a series of the cases which gave absolutely no symptoms.

Dr. JOHN DUNLOP of Washington, D. C., had had a patient presenting a lumbosacral ossification on one side. There was no sign of a joint present, and the symptoms had come on after a slight accident on the opposite side from this bony ankylosis.

Dr. Z. B. ADAMS of Boston had found, in some patients suggesting the presence of stone in the kidney or ureter, a broad transverse process, which probably impinged on either the sacrum or the ilium of that side.

Dr. COMPTON REILLY of Baltimore asked whether there were ever any marked symptoms of nausea in these cases. He had had a patient who showed an *x*-ray in which the transverse process was shown to articulate with the sacrum and the iliac bone on that side. Some of her symptoms were marked pain at the menstrual periods, nausea for a long time, and pain in her back and limbs.

Dr. P. W. NATHAN of New York City considered the spine to be the most variable organ in the body, it being really a transition organ, particularly in its lower portions. He asked whether Dr. Goldthwait could demonstrate that these anomalies were not pathological, but merely subject to pathological conditions. He thought that lesions compressing nerves in this region would give distinct neurological symptoms, which could be definitely diagnosed.

Dr. JOHN DUNLOP of Washington, D. C., had noticed in the radiographs that the spine, in relation to the pelvis, did not seem to be symmetrical. He asked what effect that would have on the studies with respect to the crest of the ilium and the top of the sacrum.

Dr. S. M. CONE of Baltimore mentioned the case of a patient with a temperature of 103° and pain localized in the sacroiliac joint on one side. The *x*-ray showed an ossification on one side. He ordered a Wassermann test and a test for tuberculosis. It was a question whether it was ordinary infectious osteomyelitis. He wished to know whether any acute infection, syphilis or tuberculosis, could be an interpretation of some of these cases. The temperature had continued for a week. He thought it, of course, possible that spinal affection was at the base of the trouble.

Dr. A. H. FREIBERG of Cincinnati mentioned the case of a young woman, who had been referred to him because of an intense sciatica, associated with a decided asymmetrical position of the back. She had been pronounced to have all sorts of diseases. A careful *x*-ray plate showed a lumbosacral transverse process, and it appeared to him that a bone overgrowth was probably responsible for the pain. He undertook the removal of the bony process, which he found a very difficult operation; but it succeeded in relieving the patient completely. He asked whether there was a mechanical method of handling such patients, which would render such an operation as he had performed unnecessary.

Dr. H. P. GALLOWAY of Winnipeg, Can., wished to put on record a case similar to Dr. Freiberg's. The patient had suffered from mild sciatica for a number of years. The *x*-ray showed a spur on the transverse process, and Dr. Galloway recommended removal. There were no symptoms of sciatica after the operation.

Dr. GOLDTHWAIT, replying, stated that the specimens had all been taken from bodies that he had dissected. The *x*-rays were from his own clinic, and he could give the histories of them. He considered paraplegia a thing that must be reckoned with. In reply to Dr. Nathan, Dr. Goldthwait stated that the specimens he had shown were not simply the cauda equina, but were the roots that made up the different plexuses. In reply to Dr. Starr's question, Dr. Goldthwait said that he himself had not known that he had a peculiar formation of the transverse process of his last lumbar vertebra until the previous winter. With regard to treatment, he said that, recognizing these symptoms as being due to acquired conditions on top of a congenital malformation, the problem was to restore the condition to what it would be normally or was in early life. The individual should be balanced, so as to relieve the process of strain and irritation. If the pressure was all on one side and was distorting the spine, the patients could be relieved much less frequently than he had at first supposed. Not only were the nerves low down at the lumbosacral joint pressed upon, but the settling down of the processes might produce a pressure also on the nerves in the upper part of the lumbar spine. Dr. Goldthwait could not answer Dr. Reilly's question as to whether the condition would cause nausea. In reply to Dr. Nathan's second question Dr. Goldthwait said that it was for the members to decide whether the anomalies were of pathological importance. All he had claimed was that they were there. He thought that the lumbosacral joint would be subject to all the diseases to which any other joint was subject.

Spontaneous Gangrene and Allied Conditions in Orthopedic Surgery.—Dr. W. G. STERN of Cleveland stated that spontaneous gangrene, Raynaud's disease, erythromelalgia, acrocyanosis, and intermittent claudication were allied conditions, and were probably due to similar causes. Of fourteen cases that he reported, only five had been seen by the general surgeon; and then, only late in the disease, after gangrene had set in, for the purpose of amputation. Three of these cases had been transferred by the orthopedist to the general surgical service. Ten of the fourteen cases had been referred to the orthopedist early in the progress of the disease, on account of pain and discomfort in the feet and legs upon walking—most of them, under the impression that the condition was due to flat-foot. Seven cases had some degree of flat-foot, and several had been treated for the same with plates and exercises. One case had been held to be a sarcoma of the tarsus, while another had been suspected of being a tuberculosis of the ankle joint.

Dr. L. W. ELY of Denver spoke of the value of rest, and said that many years ago he had had a case in an adult, who had lost one foot by amputation for gangrene, beginning above the toe, and running to just above the knee. The other leg presented a well-marked case of intermittent claudication. The pulse was absent. It ceased about the middle of the leg. The patient had a well-marked phlebitis, and treatment was without effect. He was put on the flat of his back for six or eight months, and his symptoms all disappeared. Without rest he would have lost that limb also.

Dr. H. A. WILSON of Philadelphia asked Dr. Stern whether any of the cases had given a history of an onset after frost bite, with an exaggeration of the condition in the winter, and an amelioration in the summer. Dr. Wilson stated that such patients were relieved by applied warmth and complete rest. The circulation recovered, the gangrene disappeared, and there was an arrest in the condition, with a slight recurrence the following winter.

Dr. C. F. PAINTER of Boston remarked that until he had learned to associate etiologically with this condition the presence of various toxic conditions connected with narcosis, he had not understood the causation of these cases very well. There seemed to be two points connected with them: the fact that they occurred largely in persons that were fundamentally of a weak and unstable nervous system; and that they were found in those that gave a history of having used tobacco or some other toxic material to excess.

Treatment of Structural Scoliosis.—Dr. A. H. FREIBERG of Cincinnati stated that correction jackets for scoliosis had been in use intermittently for over a gen-

eration; but that they had failed of their object, chiefly because the muscle factor had been ignored, and because the proper mechanical principles had not been observed in making the correction. These principles, he said, were still ignored in many of the procedures that had lately been brought forward. The mechanics of correcting the torsion and the consequent chest deformity constituted a most important feature. The apparatus exhibited by Dr. Freiberg showed the application of these principles; but the possibility of maintaining the corrective effect, he admitted, had not yet been demonstrated.

Treatment of Scoliosis (Fixed Type) by Plates, Supplemented with Pneumatic Pressure.—Dr. JOHN PRENTISS LORD of Omaha stated that he had found frequent forced corrections under plaster to have rendered the best net results in such cases. The pressure surfaces were greater in casts than in braces, and might, therefore, be made to exert a greater corrective force, and thus maintain a maximum of efficiency. These casts had been fenestrated to the greatest possible extent, especially over concavities of the chest, to avoid chest constriction. The breasts of females were made free by ample fenestra. To gain still more efficiency and to add more pressure over the protruding ribs, he had used air-bags made from sections of the inner tubes of automobile tires, discarded tubes of good quality being used, and being inflated by means of the valve stems of bicycle tires.

A Jacket for the Treatment of Scoliosis.—Dr. MICHAEL HOKE of Atlanta had devised a joint that permitted universal motion and that, at the same time, was of such construction that it could be locked securely in any position in which it was placed. It was merely a matter of ingenuity to apply a series of these joints to the particular individual and the particular jacket in which it was desired to use them. He did not claim that this was as effective as plaster; but stated that sometimes circumstances arise preventing the use of plaster during certain periods, when this jacket might be substituted.

The Treatment of Rotary Lateral Curvature of the Spine.—Dr. B. E. MCKENZIE of Toronto stated that there were two essentially different and opposed methods of treatment: one, forcibly corrective and restrictive; and the other, forcibly corrective, developmental, and educative. The former, while correcting the deformity, failed to improve function; while the latter was effective in bettering both form and function.

A New Scoliosometer.—Dr. JAMES K. YOUNG of Philadelphia presented a new method of transferring the outline and tracing of scoliosis directly to tracing paper. The method, he stated, was simple, inexpensive, and scientifically accurate.

Some Material to Be Used in Padding Plaster Jackets.—Dr. C. F. PAINTER of Boston said that this material was used for the protection of the body from the pressure of the plaster. Ordinary sheet-wadding was packed up with a gauze bandage, in order to lessen the difficulties occasionally met with in the application of the sheet-wadding, which tended to slip.

Dr. JOEL E. GOLDTHWAIT of Boston, opening the discussion on this symposium, said that the most embarrassing question that one could ask the chiefs of the different clinics was regarding what they had accomplished with reference to the rotation in this condition. He himself had been able to do very little with it.

Dr. ABBOTT of Portland, Me., had shown that by putting the patient in the position of flexion, one relieved the locking of the articular processes and put the spine in the position of greatest flexibility. It then became possible to unrotate the spine, so that correction could be made. If the shoulders were dropped and the body bent to the side, one did not have a true rotation. If the shoulder was raised and the same position maintained, the body of the vertebra was rotated.

Dr. L. J. PORTER of Chicago had visited Abbott, and had obtained the impression that failure in trying to correct this deformity had been due to the fact that when the spine was locked, there was no possibility of rotating the vertebræ. The only possibility of correction in this position was in little children, whose ribs were so soft that they could be twisted back into place. Dr. Abbott had succeeded in doing in three or four months what Dr. Porter had not been able to do in years.

Dr. CLARENCE L. STARR of Toronto said that he had obtained a paralysis of the arm from the pressure of a jacket carried over the shoulder. The paralysis had come on three weeks after the application of the jacket, which was not tight. The paralysis had an onset similar to that of the ordinary crutch palsy, and had cleared up in five or six months

Dr. PRESCOTT LEBRETON of Buffalo remarked that there might be cases of lung trouble, or of flexed uterus, which might be harmed by this sort of treatment.

Dr. F. E. PECKHAM of Providence observed that if such work had been led up to by previous work in that direction, the medical mind having been prepared by a logical sequence of events for this ultimate result, it would have all seemed easy and natural; but the idea had apparently just flashed across Dr. Abbott's mind, and the trick was done. The result had come first, and the explanation afterward.

Dr. C. D. NAPIER of Brooklyn in following out the padding posteriorly over the kyphosis, and in trying to correct the rotation from posteriorly, had been disappointed in the result. Recently he had tried to follow out the idea of padding anteriorly on the ribs, and had found that it made a wonderful difference in the amount of correction obtained.

Dr. H. AUGUSTUS WILSON of Philadelphia asked what was done by Abbott as to changing the shape of the bones, as he felt that the results stated had been such as to make one ask what would prevent the recurrence of the deformity.

Dr. L. J. PORTER of Chicago said that when the first jacket was removed, the patient should be put into another, so as to prevent recurrence.

Dr. S. A. TWINCH of Newark said that his understanding was that Dr. Abbott applied over-correction, which was what was relied upon in the treatment of every deformity except curvature. No one thought of merely correcting bow-legs, but over-corrected them.

Dr. Z. B. ADAMS of Boston said that when the vertebræ had swung around to the side of the convexity in the back, in the dorsal region, and had become wedge-shaped, and when the ligaments on the side of the vertebræ had contracted,—he did not see how Dr. Abbott could untwist these vertebræ and bring them around into position or over-position.

Dr. C. H. BUCHOLZ of Boston reported a new scheme for recording scoliosis. In order to make the records uniform and to get the patient in the same position, Dr. R. B. Osgood of Boston had constructed a frame, with cross-pieces and padding, to hold the patient in the same position each time. Although this position was unnatural, it could be assumed every time. A stereoscopic photograph was used, which gave a beautiful view.

Dr. W. E. BLODGETT of Detroit said that he had never before understood why the vertebræ rotated so in lateral curvature. The explanation was that the raising of the ribs on the convex side produced an increased distance between the costal attachments at the sternum and those at the vertebræ. As the power of the sternum to give was limited, there was a tendency to rotate the vertebræ in the way in which they rotated, producing this rotary deformity.

Dr. N. M. SHAFFER of New York City had claimed, some years before, that deformities should be measured, just as the ophthalmologist measures the functions of the eye. He had compared lateral curvature to torticollis, which was the same sort of deformity in the cervical vertebræ as lateral curvature was in the dorsal. In a case of his own, lateral curvature had been caused by fusion of the ninth and tenth and the tenth and eleventh ribs, two inches from the vertebral column. Removing the fusion cured the curvature.

Dr. WALTER TRUSLOW of Brooklyn considered the *x*-ray as the final court of appeal, but said that it was sometimes difficult to get an *x*-ray taken.

Dr. Z. B. ADAMS of Boston said that fusion of the ribs *per se* did not cause scoliosis. In an examination of specimens in the museum at Boston he had found some that showed two ribs fused together, with no scoliosis whatever.

Dr. R. T. TAYLOR of Baltimore stated that after the appearance of Abbott's article, he had treid, without having suitable apparatus, to correct the deformity by means of posture and strength. The progress of the improvement was much more rapid than any he had before secured.

Dr. C. L. STARR of Toronto said that his colleague and he had found, in connection with the bending position and elevation of the arm, that they had made a marked change in the contour by putting a lift under the foot of the side that was convex, thus tilting the pelvis.

Dr. J. L. PORTER of Chicago stated that Abbott did not profess to correct the curvature at one sitting. The object of the treatment was to compel the rib and the vertebræ to rotate gradually and slowly. The apparatus was not well made, but its principle was correct.

Dr. J. E. Goldthwait of Boston remarked that if prolonged maintenance of the position insisted upon by Abbott were kept up, it might be harmful to the viscera; but it was necessary to maintain it for only an exceedingly short time. He thought it fair to recognize that it was not possible, probably, to maintain permanently the complete correction of all these cases. On the other hand, of the fact that improvement was possible, he thought that there could be no doubt,—and much more rapid improvement than with any other method that he knew of.

Dr. Compton Reilly of Baltimore asked whether the twist in the pelvis had been corrected in Dr. Abbott's cases.

Dr. A. H. Freiberg of Cincinnati felt that there was no reason why, if the spine could be maintained in this position of over-correction, that deformity could not be retained as well as could a club foot.

Dr. J. P. Lord of Omaha said that he had been carrying out the method of relief of chest constriction to a greater extent than he had seen done by many others. The Abbott jackets that he had seen had not been adequately fenestrated. He believed that the deficient aeration, due to the limited fenestration, would have a deteriorating effect. He had found the pneumatic pressure to be superior to the additional pads of felt.

A Consideration of the Carpal Arch, with Its Relation to the Function of the Hand.—Dr. Joel E. Goldthwait of Boston said that the bones of the carpus and metacarpus were arranged in the position of an arch, both transversely and antero-posteriorly, the convexity of the antero-posterior arch being toward the arm. The formation of the first carpo-metacarpal articulation was, he said, very peculiar. It was most important to the function of the hand to maintain these two arches.

A Simple Operation for the Relief of Contraction in Certain Cases of Volkmann's Paralysis.—Dr. Leonard W. Ely of Denver stated that this operation had been first worked out on a specimen in the laboratory. It was found that a simple division of the tissues between the tendons of the flexor sublimis digitorum and the flexor profundus digitorum and the bones in the distal phalanges would release the contraction. In regard to the causation of this condition, he thought that the experimental work of Lorenze and others had failed to prove their contention that it was the cutting off of the blood-supply that produced Volkmann's paralysis. He thought that the paralysis was caused by the injury of the nerve that might have been inflicted at the same time that the bone was injured, and not by the pressure of the splints upon the blood-vessels.

Dr. Sayre thought it possible that there was more than one cause making the contractions in these cases, and considered Dr. Ely incorrect in assuming that the experimental work had failed to show that cutting off the blood-supply would produce this effect.

Dr. G. E. Packard of Denver stated that it had been demonstrated that an elastic bandage would not cause this type of paralysis, but would produce a flaccid paralysis; so that the paralysis in Dr. Ely's case must have been due to the splints.

Dr. H. P. Galloway of Winnipeg had operated on several cases of ischemic paralysis by lengthening all the flexor tendons in the upper forearm above the wrist. As soon as they were all divided, the different fasciculi being kept together with forceps, it was easy to straighten the fingers. He could not reconcile this fact with Dr. Ely's hypothesis.

Dr. Ely said that he could not find that paralysis had ever been experimentally produced in an animal, unless the nerve had been included in the ligature. Although it was usually assumed to be caused by tight splints, it had never been proved that a temporary stopping of the blood could cause these particular anatomical lesions.

Dr. Charleton Wallace of New York City asked whether this severing of tissue was within or without the tendon sheath.

Dr. Ely replied that it was without the tendon sheath immediately attached to the proximal phalanx.

Plates for Static Foot Troubles.—Dr. William E. Blodgett of Detroit said that one was justified in making any kind of plate that would stop pain and still allow of function. A plate made to conform to the shape of the sole was often not so successful as one of an arbitrary shape. In making the cases no effort had been made by him to get the foot into the shape that it would take if it were not flat. The pain, in the majority of cases, he stated, could be stopped by a very simple plate. He had found that the ordinary foot would tolerate 11 per cent. of rise.

The Mechanical Treatment of Hip Disease.—Dr. George E. Packard of Denver believed that if sufficient mechanical treatment, in addition to proper hygienic measures, were instituted early in hip disease, a cure would often be secured with motion. Every means should be used in the early stages to effect such a result. Traction, fixation, and protection from weight-bearing should be persisted in as long as there seemed any possibility of obtaining such results. Early weight-bearing should not be allowed, as it favored ankylosis, absorption, and enlargement of the acetabulum. Dr. Packard thought if stiffness persisted after two years of treatment by traction, fixation, and protection, and there seemed to be little probability of recovery with motion; and if there was absolute freedom from sensitiveness, then weight-bearing, with fixation to prevent flexion and adduction, was the treatment of choice. Ankylosis was to be desired in many cases as the best possible result for the future comfort and permanent cure of the patient. The treatment should not be one of routine, but should be selected according to the indications in each individual case.

Results in Hip Tuberculosis After Mechanical Treatment (Without Traction) and Hygiene.—Dr. Henry Ling Taylor of New York City reported the cases of seven patients treated by means of the Phelps brace. Five children had their splints removed in the summer of 1910. All but one child had abscesses. They were all early cases, and of at least average severity. The average duration of the treatment to the time that the splints were removed was three years. In one case, which was a double one, a moderate flexion was corrected since the removal of the brace, and two patients had subsequent treatment for a weak knee. These two patients still used crutches, the others walking well without support. The abscesses healed and the patients regained good health. In all but one case, in which there was thirty degrees of motion at the hip joint, there was only slight motion, and the position of the leg became excellent. In none did the shortening exceed one inch except in the two girls with weak knee. *X*-ray plates showed more or less enlargement of the acetabulum, moderate erosion of the head (except in two), and the head in the acetabulum.

Dr. Robert W. Lovett of Boston, opening the discussion on the papers of Drs. Packard and Taylor, stated that orthopedists were not sufficiently careful about looking after the muscular atrophy following joint injury. He thought that more persons had stiff, irritable knees due to that than to any other cause. There was also a large element of disuse in this condition. He remarked that athletes would not allow their joints to be fixed, but used them with light bandages. Accompanying the muscular atrophy in some cases there was a distinct atrophy of the bone, he said, which diminished to one-third its normal width. A good many of the effects seen in chronic joint disease were possibly due to bone atrophy.

Dr. L. W. Ely of Denver asked how weight-bearing could cause a less amount of atrophy of the limb than a treatment that caused function of that limb. He said that muscular spasm was nature's method of putting the joint at rest, and could not cause trauma to the joint. It was motion that produced the pain. Trauma might have a slight causative effect in joint tuberculosis, but scarcely in the bone. When the tuberculous focus occurred in the bone the bone was subject to trauma. The only way to find the solution of these questions, he thought, was to ask "Why?" when any opinion was advanced regarding fixation and traction.

Dr. H. A. Wilson of Philadelphia said that weight-bearing was not the only method applicable to bony ankylosis, but that it got rid of some of the results of uncarefully applied fixation and confinement in bed. The physical improvement of twenty patients with tuberculosis of the hip who had been at Atlantic City all winter had been phenomenal, he stated. They never slept with warmth in their room, and had very little fixation. This showed that the emaciation seen when there had been fixation in bed and disuse was not present with this treatment.

Dr. F. H. Albee of New York City said that he could exhibit *x*-rays in which there was shown such tremendous rarefaction of the head of the femur that it gave no more density than the softer tissues in which it was embedded. He thought that this type of cases should have weight-bearing removed, and be either placed in bed with traction or put into a brace that would prevent weight-bearing, if not produce traction.

Dr. Virgil P. Gibney of New York City did not consider the *x*-rays to be always as reliable as some people thought. He stated that some radiologists thought that rarefaction meant tuberculosis, and others did not agree

with this view. Dr. Gibney was a believer in the value of a full history of the patient. In his later work he had used the plaster spica in all early cases. The results had been so uniformly good that he had wondered whether the condition might not be an infection of some kind. He was trying to get some ambitious member of the staff of the Hospital for Crippled and Ruptured to collect two or three hundred of these cases and get their end results. He had found that good radiologists could not tell whether it was a degenerative or a regenerative process that was going on in the head and neck of the femur. He himself thought that many of these cases were regenerative, and threw out bone to protect the parts about the joint.

Dr. Joseph Root of Hartford said that in every case there was a sensitive stage which could be distinguished without the aid of *x*-rays. It seemed to him that the child should be kept quiet at that time. He did not believe that any perambulatory extension could be of as much protection to the joint as the ordinary fixation.

Dr. Charleton Wallace of New York City three years before had examined a collection of pictures of coxa varas and tuberculous lesions. He had found that the plates that showed the least amount of bone destruction were the ones that had had only plaster-of-Paris treatment and rest in bed. The cases that had had brace treatment had more destruction of the head. Some had pathological displacements. The solution of the problem, he believed, would be in raising the resistance of the patients. They should be kept out of doors all the time, should get nourishing food, and should be kept from brain fatigue.

Dr. G. G. Davis of Philadelphia stated that there were two kinds of spicas, the short and the long. He was opposed to the former, and believed that a long spica, from the waist to the toes, gave fixation and rest, while the short spica did not. He considered absolute rest in bed necessary during the active stage of the disease, with as much fixation as could be obtained. After the patient was able to get out of bed the spica should be removed. Crutches should then be used, with a high shoe on the opposite side. Instruments should be resorted to only when all active symptoms had subsided. He thought that children did better at hospitals than at convalescent homes, where, although the general condition improved, the local condition deteriorated.

Dr. B. E. McKenzie of Toronto said that he had thought that traction was meant to serve a double purpose: that of keeping the head of the femur in such a position that it would not be brought violently into contact with the acetabulum; and that of preventing deformity. Cure of the disease was obtained, in his opinion, by enabling the resistance from within to throw off the affection. The part in which the tuberculous lesion existed should be exposed for hours each day to the sunlight, and this treatment should be continued for months. He believed that no long brace had ever supplied complete fixation of the joint.

Dr. C. J. Jager of New York City said that there should be a distinction drawn between the short spica and the Lorenz spica. The short spica would not fix the hip, but the Lorenz spica would fix it absolutely.

Dr. T. H. Myers of New York City stated that the focus was sometimes in the epiphyseal line, and sometimes in the acetabulum. In the former case the amount of immobilization needed was very different from that required when the findings showed that the focus was in the joint itself. He referred to a case in which the *x*-ray had shown a destruction of fully one-half the head, and said that he had seen the case two years after this and had found a regeneration of the head.

Dr. V. P. Gibney of New York City remarked that spindle-shaped femurstibias were no longer found, all being of good size at the present time.

Dr. J. E. Goldthwait of Boston stated that all were agreed that hip disease was a general disease, and that local treatment for it amounted to no more than protection. He thought that bone atrophy did not come from disease, but from disuse. In looking up the end results in some hospital cases that had disappeared from observation he had found that some of these patients had taken care of themselves better than those being treated. He mentioned the fact that the results obtained at a hospital in Switzerland by direct exposure to the sun at a mountain resort were superior to those obtained at the seashore or by any other treatment.

Dr. J. P. Lord of Omaha remarked that when the condition indicated that the head of the bone was liable to break down, traction was the indication. He did not consider the amount used now adequate to prevent the destructive process and mechanical displacement.

Dr. Wallace Blanchard of Chicago stated that it was friction that did the destructive work in the hip joint in the majority of cases. Lateral, as well as longitudinal, movement was necessary to this; and he had advised using both kinds of extension in order to produce traction in the direction of the neck of the femur.

Dr. Packard, closing the discussion, said that the object of his paper had been to emphasize the necessity of treating these cases according to their type and the stage of the disease.

Dr. Taylor said that there were two factors to consider, general and local hygiene. Both should be appreciated in their details and their divergent requirements in different classes of cases.

Further Observations on the Use of Intraarticular Silk Ligaments in the Paralytic Joints of Poliomyelitis Anterior.—Dr. W. W. Plummer of Buffalo presented this paper, which he had written in collaboration with Dr. Bernard Bartow of Buffalo. He said that during the past year they had employed this procedure exclusively in fifty joints. Many of the cases had been too recently operated on to be more than suggestive of the improvement anticipated, but it might be confidently stated that the procedure had been developed to a point that took it out of the experimental stage. While it was not advocated as an exclusive mode of treatment, it might become so in some cases. The joint should be carefully protected for a long period after the operation.

The Results Obtained by the Implantation of Silk Ligaments and Tendons for Poliomyelitis Paralysis.—Dr. Nathaniel Allison of St. Louis considered artificial tendons more valuable than the older operation for stability, arthrodesis. His method was to imitate the pull of normal tendons by means of silk cords, inserting these in the bone above and below and running the silk tendon in the sheath of the paralyzed tendon. In no case had there been infection, nor had the inserted silk caused trouble. The use of one or another kind of silk artificial ligaments or tendons he thought preferable to arthrodesis in children.

The Industrial Education of the Crippled and Deformed.—Dr. H. Winnett Orr of Lincoln stated that the care of cripples was a part of the modern tendency toward the prevention of dependency. Even after adequate hospital care many orthopedic patients lapsed into dependency for want of an occupation. It was necessary, therefore, that some kind of employment should be selected for these persons by a competent orthopedic surgeon, who should have subsequent supervision over them. The ideal arrangement, he considered, was for the hospital and training school to be combined in one institution. There was a great need for such institutions, only a small number of which were in existence. Cities and States should make such training in connection with orthopedic hospitals a part of their educational system .

Dr. H. Tunstall Taylor of Baltimore said that in Baltimore they had had the cooperation of both the city and the State in the educational training of such children. As soon as they were able to go they were sent to the schoolroom, where the regular school system of Baltimore was followed. After the child had been there for several months it was able to take its place in the proper grade in the public school. There was a definite selection of occupations suitable for the individual cases.

Dr. W. G. Stern of Cleveland stated that he had visited the New Jersey Training School for Feeble-Minded and Defective Children at Vineland, and that it was wonderful what educational training had done there to improve the arm muscles of children with spastic paraplegia, enabling them to learn trades. With a slight change the plan of this institution might be adapted for use in the conduct of schools for crippled children in other States.

Dr. C. H. Jaeger of New York City considered it remarkable what could be done with these cases. He thought that these poor defectives should not be consigned to the scrap heap before an attempt had been made to do something of this kind for them.

Dr. Orr did not think that such children should be put into competition with normal children, and said that they needed special educational methods.

An X-Ray Study of Gastrointestinal Findings in Multiple Arthritis.—Dr. George R. Elliott of New York City gave a lantern slide demonstration of these plates, nine being taken from ten selected cases of walking patients afflicted with classical types of chronic polyarticular arthritis. Nine showed ptosis of some portion of the viscera or stasis in the stomach or colon. One showed a markedly dilated stomach; and three, enlarged spleen. His conclusions were that, while the primary etiology of the disease did not lie here, it was an important factor,

which tended to keep up a vicious circle. The original infective toxins in many cases soon ceased to act; but the abdominal conditions, acquired and otherwise, fed the already diseased joints. He felt that the physician who neglected to have a proper examination, *x*-ray and otherwise, of the gastrointestinal tract, neglected his patient. Most of the abnormal intestinal conditions were remedial.

Some Conditions of the Pathogenesis and Treatment of Toxic Polyarthritis.—Dr. F. W. NATHAN of New York City said that there existed very little definite knowledge of toxic polyarthritis. The general opinion seemed to be that there was a definite joint disease as the result of autointoxication from the intestinal tract; but in the reports of the cases of undoubted autointoxication from this source no mention of joint symptoms was ever made. The conception that a toxic joint condition was the result of intestinal putrefaction seemed to rest on the basis that in a certain percentage of the cases there was indican in the urine. It had, however, been disproved that indican in the urine was of any diagnostic importance; and it had not been definitely shown that the cases reported as toxic arthritis of intestinal origin had any connection with the intestines. The treatment, he said, must be based upon general principles and directed toward the general condition. Care in the examination, attention to detail, and careful study of the individual cases were necessary if treatment was to be successful.

The Etiology of Chronic Arthritis.—Dr. LEONARD W. ELY of Denver stated that the cause of this group was still a matter of debate, but the infectious theory had been gradually growing in strength. He believed that all these diseases were infections, every bone and joint disease whose exact cause was known being infectious. He thought it better for the present to believe that a number of different organisms might be responsible for these diseases, especially as this view agreed with clinical evidence. In many of these cases of chronic joint disease a distinct source of infection had been found; and in some, the removal of the source of the infection had been followed by an improvement or a cure in the joint disease.

Cases of Acute and Chronic Arthritis (Acute Toxic Arthritis, Arthritis Deformans, Rheumatoid Arthritis, etc.).—Dr. MICHAEL HOKE of Atlanta had studied a series of forty-seven cases, extending over fourteen months, without regard to classification; and had found running through the whole series, while they were acute, a profound disturbance of metabolism. As the patients got better their metabolism became nearer to the normal. When their protein was cut down the excretion of uric acid rose coincidently with improvement in the patients. An ordinary healthy human being, he thought, was able to take care of intestinal putrefaction. The arthritic patient, however, could not take care of it. It harmed him, and should always be avoided.

Dr. J. E. GOLDTHWAIT of Boston, opening the discussion on the last four papers, said he was glad that the group of so-called mechanicians had gone so far as to recognize the fact that joint symptom was not a disease. It seemed to him that in the abdominal organs was to be found an explanation of one of the difficulties under which the human family labored, one of the penalties that they paid for being bipeds being a maladjustment of their viscera. This was of no consequence unless it led to some disturbance. A series of cases had been measured in the dissecting room by himself and Dr. Brown, and they had found that the anatomic types usually considered normal were rather uncommon. Many people, for instance, had only half of the small intestine. Of course they were not well nourished. The possibility that infective organisms might travel up the small intestine from the colon and get to a point at which absorption could take place was increased in such persons.

Dr. J. L. PORTER of Chicago referred to an interesting occurrence in animal experimentation. A nurse, who had formerly had severe tonsillitis, suffered with a chronic arthritis of the ankle joint. The tonsils were removed and the ear of a rabbit was injected intravenously with an emulsion made from the contents of an infectious focus in the larger tonsil. The ear of another rabbit was injected at about the same time with infective material secured at autopsy from the body of a professor in the Chicago University who had died with an acute pyogenic infection involving all his joints. Both rabbits developed the same type of infection, the changes in the joints being in the same location in the rabbits as in the patients from which the material injected had respectively come.

Dr. S. M. CONE of Baltimore wished to know whether the internal secretion itself, as a poison, produced the joint trouble, or whether it did so by its action on whatever organism might be present.

Dr. C. F. PAINTER of Boston said that a great many infections did not produce any symptoms, a great many anatomic disarrangements did not give rise to disturbances, and probably a great many internal secretions might be disturbed without causing anything that could be recognized as a clinical disturbance.

Dr. A. H. FREIBERG of Cincinnati thought that the orthopedic profession was in danger of falling into a kind of scientific empiricism. Unless they confined their studies more closely to the joint phenomena they were likely to be carried into the realm of internal medicine without getting much nearer to the solution of the question.

Dr. J. J. NUTT of New York City had noticed that in the treatment of tuberculous joints those children who were allowed free action of every joint possible and lived as normal a life as was consistent with care of the joints affected did remarkably well in comparison with those treated with more or less confinement. He had also followed out this treatment in some chronic rheumatoid arthritis cases, and thought that a great deal might be said in favor of permitting and encouraging all functions of the body that did not interfere with the correct treatment of the joint.

Dr. G. R. ELLIOTT of New York City referred to Still's disease and said that studies made by him had shown that it could not be longer regarded as a distinct disease entity. Still had claimed that it differed from arthritis in adults, in which the enlarged spleen was not found. In four of the ten cases that Dr. Elliott had just reported the spleen had been much enlarged.

Dr. F. W. NATHAN of New York City said that he had merely wished to call attention to the only possible method of solving the problems or progressing in the study of these conditions. Unless all the cases were taken, and definite clinical entities formulated as nearly as possible, separating the cases and bringing them into connection with definite pathological and clinical conditions, nothing could be learned about these cases. The joints, he said, were a mechanical apparatus. It made very little difference what the process in the joint was, the mechanical conditions were impaired; and the impairment was apparently the same in all, so that there was difficulty in differentiating the joint conditions.

Dr. F. E. PECKHAM of Providence felt that a very large number of cases were due to faulty physiology in the abdominal region somewhere. He thought that the time might at last come when most of these joint diseases, with their different pathological conditions, would be found to be due to one main thing. The treatment, of course, must then be applied to that thing, instead of to the end results in the joint.

Dr. L. W. ELY of Denver thought that, instead of building up clinical entities and studying their pathology, they should build up pathological entities and mould the clinical manifestations upon them. The changes in the bone and cartilage represented merely the disease of the essential elements of the joint, which are the synovia and the bone-marrow.

Stereoarthrolysis, Restoring Mobility in Bony Ankylosis of the Joints.—Dr. R. TUNSTALL TAYLOR of Baltimore said that ten months before he had begun laboratory and animal experimentation to determine a liquid, absorbable, animal substance that could be sterilized and injected by syringe between the denuded ends of the bones entering into the proposed new-made articulation, and that would immediately solidify in such a manner as to prevent contact for some six or eight weeks before being absorbed. Yellow wax, 0.1, and lanolin, 2.5, were the chief substances and proportions determined upon after careful study, melting at about 130° to 135° F. The advantages of this method were, primarily, the prevention of the reformation of bony adhesions in properly done cases; the absence of pain, none of the cases requiring any anodyne; the speedy voluntary ability to move the joint, as compared with other methods; the absence of fever and suppuration; the hemostatic effect of the wax on the bone ends; the absence of hematuria and ecchymosis, and the rapidity with which the operation could be done compared with other methods.

Absence of the Bony Femoral Heads and Necks.—Drs. JOHN RIDLON and H. B. THOMAS of Chicago were the authors of this paper, which was read by the latter, who said that absence of the bony femoral heads and necks, supposedly occurring in rachitic children, was a rare condition, as proved by the bone pictures taken later in the life of the individual cases, in which bone salts had been deposited. *X*-ray pictures taken at different angles would sometimes give evidence of a head and neck in a supposedly congenital absence.

Bone Transplantation in the Treatment of Club-Foot, Pseudarthrosis and Pott's Disease.—Dr. Fred H. Albee of New York City stated that in case of club-foot in older children, in whom adduction of the front part of the foot predominated, a wedge of bone had been ingrafted into the scaphoid; in several instances, with most gratifying results. In several cases of pseudarthrosis of long standing a strip of bone about five inches long by one-half by one-third from the crest of the healthy tibia had been inlaid into the cortex of the end of each bone fragment and fixed with heavy kangaroo tendon through drill-holes in the recipient bone-fragments. A firm union had been secured in each case, and in one in which a Lane plate had previously failed. In thirty-two cases of Pott's disease a prismatic shaped piece of the tibia had been implanted into the spinous processes of the diseased vertebræ, with most striking results.

Dr. S. M. Cone of Baltimore, opening the discussion on the last two papers, asked whether it was easy to get a protected wound, to protect the transplant where Dr. Albee had to cut into the contracted tissue on the inside and put in the transplanted scaphoid.

Dr. G. G. Davis of Philadelphia believed that the present means of treating Pott's disease were so unsatisfactory as to justify resorting to radical measures. Even after a quiescent stage had been reached the deformity increased. The disease extended over many years, and frequently broke out afresh and killed the patient. He was a firm believer in the regeneration following the transplantation of bone in these various processes. He thought that the procedure was not so serious as to preclude its being used.

Dr. John B. Murphy of Chicago said that Dr. Albee's treatment was the first ray of light on the management of spondylitis. It was a prophylaxis against deformity. Putting in a bone was easy to do. One could apply the treatment of the transplanting of bone from the same individual, having contact of bony surfaces with the periosteum, as soon as the child began to show stiffness and fixation; and there would be a uniform regeneration of the bone in the transplant. A graft of bone, once transplanted, would not grow in length, but only in circumference. If the periosteum was left on, the bone would not spread. The entire rôle played by the graft, he thought, was that of supporting the Haversian vessels. The graft must be human bone. He believed that this treatment would be ideal treatment for ununited fractures; and that when there was a defect in development these grafts might be used with effect.

Dr. J. T. Rugh of Philadelphia asked whether it made any difference which side of the graft was placed to the firm half of the process. He also asked whether in certain fractures of the neck of the femur that refused to unite, the insertion of a piece of this bone would tend to bring about bony union.

Dr. B. R. McKenzie of Toronto had not noticed that anything had been said about transplanting bone when there was deficient bone congenitally. Nothing had been said by Dr. Thomas about complete absence of the femur. Dr. McKenzie had seen four cases in which there had been nothing except an indefinite nodule at the upper end to indicate where there was a remnant of the femur left.

Dr. Rugh said that in a case of congenital absence of the lower two-thirds of the tibia he had substituted the fibula, and that it had become practically of the same size as the tibia, and was keeping pace with the growth of the latter.

Dr. T. H. Myers of New York City said that two of Dr. Albee's *x*-ray illustrations showed the diseased bodies separated by considerably more interval than they would have been before he had straightened them. The old idea had been that these would not heal unless the surfaces came together.

Dr. Goldthwait of Boston stated that he had seen a case in which both fibulæ had been transplanted to take the place of an absent tibia. There was still deformity of the foot, but both legs had developed so that the child could run about and play without difficulty.

Dr. H. P. Galloway of Winnipeg was a firm believer in the principle that if ankylosis could be brought about in tuberculous joints the disease would be cured. This was not easy to do in the sacroiliac joint. He asked whether the transplantation of a bone graft into the scroiliac joint would bring about ankylosis in that joint.

Dr. Abraham Jacobi of New York City had found that his fractures would heal readily when he fed his patients on phosphorus. His cases of Pott's disease and tuberculous ankles got decidedly better in a shorter time with phosphorus than without it. Tuberculous disease, not only in the lungs, but in the soft parts and in the bones, would do well when systematically treated on arsenic. One should not forget that there were other things besides operations, and that a great deal could be done to strengthen and purify the system for the purpose of making an operation more successful. Arsenic, he had found a semi-specific in tuberculous disease. He thought that better results would be obtained if the patients were in good condition, and that this could be brought about by the use of phosphorus and arsenic.

Dr. J. B. Murphy of Chicago said that the tendency had been to go entirely away from medication, but that surgeons were coming back to the things that combated tuberculosis in bone, lung, and every other organ.

Dr. Albee, in closing the discussion, stated that the disadvantages in the use of metal and other foreign bodies were obvious. One could not trust metal to hold tension in bone. If motion persisted in tuberculous disease it constituted a danger and favored a relapse of the condition. The autogenous transplantation of bone was very important, as Dr. Murphy had said. The graft should be placed against the unbroken side. When he had first begun, Dr. Albee had placed the cut side next to it; but he had since turned the graft around, split the periosteum, and put the periosteal side against the unbroken spinous process. He thought that the plug of bone would be worth trying in the case of fractures of the neck of the femur. He saw no reason why the transplant should not be put directly across from the sacrum to the ilium, as this would fix it more simply and with less operative procedure.

Congenital Absence of the Fibula.—Dr. Prescott Le Breton of Buffalo reported ten cases of this rare condition, one of which was operated upon with satisfactory results; he also showed some photographs and *x*-rays of these cases.

Officers.—The following officers were elected for the ensuing year: *President*, Dr. A. R. Shands of Washington, D. C.; *Vice-Presidents*, Dr. J. D. Griffith of Kansas City and Dr. David Silver of Pittsburgh; *Treasurer*, Dr. G. G. Davis of Philadelphia; *Secretary*, Dr. Ralph R. Fitch of Rochester, N. Y.

The next meeting will take place at Washington, D. C., in May, 1913.

AMERICAN ELECTROTHERAPEUTIC ASSOCIATION.

Twenty-second Annual Meeting, Held at Richmond, Va., September 3, 4 and 5, 1912.

The President, Dr. William D. McFee of Haverhill, Mass., in the Chair.

Report of the Committee on Direct Continuous Current, Including Electrolysis, Electrochemical Surgery, Ionization, and all Apparatus Connected Therewith.—Dr. G. Betton Massey of Philadelphia reported that there was nothing new in the way of apparatus under this head. The committee felt that it was still necessary to reiterate the necessity for accurate meters and controllers that have sufficient resistance and smoothness of current increase to permit the application of the current strengths that would be employed without sudden increase or decrease. A great impetus had been given in England and Continental Europe to the newer developments in medicinal ionization

Report of the Committee on High Frequency Currents.—Dr. Frederic de Kraft of New York reported that during the past year many different types of multiple spark gap had been constructed and tried. He had succeeded, with the help of Wappler Brothers, in constructing a multiple spark gap of the simplest possible type, with nine very small gaps. The result in increasing the rate of oscillation to be obtained from the D'Arsonval spiral was truly amazing. When the bipolar method was used there was entire absence of Faradic effect. The brush effect—the Oudin effleuve—was more marked, many times longer, and of greater density.

Report of the Committee on Phototherapy.—Dr. Edward C. Titus of New York read this report. It contained a continuation of the observations offered last year upon the physiochemical effects of the ultra-violet and blue-violet rays upon both normal and abnormal conditions of the skin; an abstract of an article upon the beneficial effects of strong, clear sunlight in the treatment of bone tuberculosis; and an account of investigations made during the past year by Dr. T. T. Gaunt of New York and the writer upon the anesthetic action of true blue light, the method of employment, apparatus, and therapeutic applications.

Report of the Committee on Radiography, Radiotherapy, and Apparatus.—Dr. G. E. Pfahler of Philadelphia reviewed in detail the advances made along this line during the past year.

Report of the Committee on X-Ray and High Frequency Tubes and Apparatus.—Dr. FREDERICK M. LAW of New York in this report called attention to the points of interest in connection with *x*-ray tubes constructed and used in a practical manner during the past two years.

Epidemic Poliomyelitis.—Dr. WILLIAM BENHAM SNOW of New York drew the following conclusions: Acute poliomyelitis, an infectious disease, possibly contagious, is characterized by congestive infiltrations, particularly marked in the meninges of the spinal cord, sometimes involving the meninges of the brain and the substance of the cord. The indications after the onset are to increase local resistance and promote the elimination of the infiltration, particularly from the cord and meninges, as soon as possible, in order to relieve the pressure upon the ganglion cells, and thereby restore their function, relieving the resulting paralysis. For removing infiltration the static wave current applied with marked energy has been demonstrated to be remarkably effective, which is undoubtedly due to its mechanical effects upon the tissues. For increasing the local resistance and possibly removing the virus, radiant light and heat, the direct D'Arsonval current and static wave current are remarkably effective, as evidenced clinically, and should be employed in the earliest stages and until recovery is complete. In the subsequent stages the static wave current to the spine, radiant light and heat and mechanical vibration to increase the metabolism in the paralyzed parts, together with voluntary exercise and exercise induced by electrical stimulation, as with the static induced current, are indicated. Under such technique, except in the violent early cases which promptly succumb, the prognosis is good when cases come early under observation, fairly good in later cases, and beneficial in most neglected cases.

Exploitation of Apparatus; Suggestions for Reform.—Dr. A. B. HIRSH of Philadelphia in this paper made a plea for reform in the marketing of physical treatment apparatus in the United States. The statements made by many manufacturers regarding their apparatus were often indefinite, inaccurate, exaggerated, and misleading. This Association should take a firm stand for the removal of this abuse. The time had come not only for separate annual reports on all electrical apparatus, but for investigation and report on the printed claims for their efficiency. By such official action this organization would place itself in its special field on the same high level attained by the American Medical Association which authoritatively tested and classified all drug remedies.

The Relief of Localized Arterial Spasm by Electricity.—Dr. FREDERIC DE KRAFT of New York read this paper. Arterial spasm resulting from autotoxemia, sources of local irritation, excessive use of tea or tobacco, the emotions, and overeating might be successfully treated by the general application of the d'Arsonval current, followed by a thorough application of the resonator effleuve to the cervical and dorsal spine. The wave current applied to the abdomen was valuable in warding off future attacks.

Some New Modalities.—Dr. ARTHUR W. YALE of Philadelphia described a new mode of administering the static current, to which the term static condensed current had been applied. He also described his method of administering ozone, in which the generator was connected in the usual manner to a source of high potential current, and in place of the bulb a tank of pure oxygen was attached by means of a rubber tube.

Examining and Recording Chronic Cases, with the Treatment of Some by the Continuous Current.—Dr. J. W. TORBETT of Marlin, Texas, made a plea for a thorough and systematic examination of every case. Unless this were done, important conditions might be overlooked. In the climate in which he lived it was often impossible to get a current from the static machine. Under such circumstances the galvanic current could often be used with beneficial results.

The Present Status of High Frequency Desiccation.—Dr. WILLIAM L. CLARK of Philadelphia said desiccation should not be confounded with fulguration, or with high frequency cauterization and coagulation. The first devitalized by drying the tissue; the second shocked and produced hyperemia, but did not destroy; and the third was essentially the same as the ordinary cautery, though perhaps deeper in effect. The desiccation spark was not hot enough to carbonize, but of sufficient heat to cause rapid dehydration of the tissue, rupturing the cell capsule and converting the area treated into a dry mass. The initial current was obtained from a static machine of large output and stepped up by an accurately attuned resonator. For superficial desiccation one pole was used; for deeper destruction the bipolar method was employed. While this method of treatment had its limitations, its field of utility was distinct, whether used alone or in conjunction with operative or other measures.

Treatment of Splenic Affections by Diathermy and the X-Ray.—Dr. FREDERICK H. MORSE of Boston reported several cases of autointoxication with enlarged spleen which he had successfully treated by the *x*-ray and the direct d'Arsonval current.

Further Information Concerning the Double Spark Gap Static Current of Electricity.—Dr. FRANCIS B. BISHOP of Washington, D. C., gave a technical description of his method of using the double spark gap static current of electricity.

A Résumé of 400 Cases of Tuberculosis in Which the X-Ray Has Played an Important Part.—Dr. J. D. GIBSON of Denver, Colorado, said he had used his method of treatment on 400 cases during the past fifteen years. Eighty-five per cent. of the cases were still living. The cases included all stages of the disease. The treatment was particularly applicable to the second and third-stage cases. He did not consider any case beyond hope of improvement. In addition to the ordinary hygienic and dietetic measures, he applied the *x*-ray alternately to the front and back of the chest, the treatments being given every other day. In addition he used the static brush discharge and ozone inhalations, although he did not attach much importance to the latter method of treatment in these cases.

High Frequency Electricity in the Treatment of Exophthalmic Goiter and Perverted Thyroid Secretion.—Dr. WILLIAM G. LEWI of Albany, N. Y., said the conclusion seemed inevitable that all the symptoms of perverted thyroid secretion were due to the effect of the thyroid toxin on the sympathetic nervous system, and that treatment with high frequency electricity gave better and far more permanent results than any other method of treatment, excepting where a resort to surgery was necessary. In all cases of exophthalmic goiter where an operation was to be performed the patient should have as a preliminary to operation a course of high frequency treatment, to the end that the distressing symptoms might be lessened, if not altogether relieved, and the patient put in the best possible condition for any surgical procedure that might be required.

Rheumatism.—Dr. ROSA D. WISS of Meridian, Miss., reported a case of long-standing rheumatism which was quickly relieved by the direct current, anodynes locally, and eliminative treatment.

Lessons from Failures.—Dr. F. HOWARD HUMPHRIS of London, England, in this paper gave as the most common causes of failure the armamentarium, inadequate knowledge, unsuitable cases, lack of perseverance, inattention to detail, over-confidence or lack of confidence, fatigue, idiosyncrasy, electrophobia.

Fulguration and Thermoradio-therapy—A Preliminary Report.—Dr. WILLIAM SEAMAN BAINBRIDGE of New York gave a preliminary report of the tests now being carried on at the New York Skin and Cancer Hospital by the Research Department, in the treatment of malignant new growths by fulguration and thermoradio-therapy. (See MEDICAL RECORD, July 6 and 20, 1912.)

Measurement of Röntgen-Ray Power by Tousey Method.—Dr. SINCLAIR TOUSEY of New York summarized as follows: A portion of the film is exposed to 1/10 of a candle power of incandescent electric light for 1 second at a distance of 1 meter; or to the equivalent 5 seconds with a 4 candle power lamp at a distance of 14 meters. Other portions of the film are exposed to the *x*-ray at 1 meter for different numbers of seconds. The film is fully developed. If 10 seconds of *x*-ray produces the same density as 1/10 C. P. M. second of incandescent light, the *x*-ray is 1/100 Tousey power.

Treatment of Chronic Deafness by High Potential Electric Currents.—Dr. D. H. YATES of Madison, Fla., reported several cases of chronic deafness, including one case of a young man who had been deaf since birth, successfully treated with the static current.

The Static Charge.—Dr. CHARLES F. MILLS of New York City in this paper gave some facts as to the nature, origin, location, absorption index, direction of transmission and dissipation of the static charge.

Officers.—The following officers were elected for the ensuing year: *President*, Dr. F. Howard Humphris, London, England; *First Vice-President*, Dr. G. E. Pfahler, Philadelphia; *Second Vice-President*, Dr. Edward C. Titus, New York; *Secretary*, Dr. I. Willard Travell, New York; *Treasurer*, Dr. Emil Heuel, New York; *Registrar*, Dr. Frederick M. Law, New York; *Trustees*, Dr. William D. McFee, Haverhill, Mass., and Dr. Frederick H. Morse, Boston.

Place of next meeting, New York City.

Miscellany.

The Doctor His Own Surgeon.—Paul Reclus has commented on the courage and stoicism necessary for the act of what he calls "autotomy," or surgical operation upon one's own body. He has described at some length four examples of this heroic procedure. The first story is that of a French surgeon who, having acquired a small outgrowing tuberculoma of the right index finger following an operation wound, determined to excise it under cocaine anesthesia. This he did, surrounded by his class, in a curiously unsurgical way, by fixing the instrument—first a scalpel, then a sharp spoon—in the left hand and performing all the necessary movements with the diseased *right* hand. In spite of this novel technique the result was quite satisfactory. His only discomfort was a little nausea at the unpleasant sensation of scraping his own periosteum; this was, however, corrected by a sip of hot coffee. In the second case the surgeon operated on himself for bilateral ingrowing toe-nail, apparently without pain and with absolutely satisfactory result. The hero of the third story was a Turkish military surgeon attached to Professor Reclus's own clinic, who was operated on for double inguinal hernia under local anesthesia with such complete success that he determined to remove for himself a troublesome varicocele. The procedure was quite painless and the result perfect. The fourth "autotomy" was performed by M. Regnault, a naval medical officer, who was led to undertake a radical cure of his own hernia. He anesthetized the area of operation by injecting cocaine into the several layers of tissue concerned, after a preliminary injection of morphine into the subcutaneous tissues of the thorax. He guarded himself from disaster by enlisting the help of two colleagues, who stood by prepared for action in case they were needed. However, all went well, and there was neither pain nor mishap.—*The Lancet*, September 21, 1912.

The Question of Fees.—G. W. McGregor states that fees among general practitioners have not advanced commensurately with the cost of living. This rapid age demands quick service, which necessitates the telephone and the automobile, each of which increases the expense of doing business. Formerly a few hundred dollars sufficed to equip the stable, whereas now the first cost is doubled and quadrupled, and the upkeep is beyond computation. It is self-evident that this state of affairs leads to one of two conclusions: larger fees or bankruptcy. Following the line of least resistance leads to the latter. No thinking layman will deny the fact of the large increase in cost of the finished product of the medical college—the doctor—a product that was nurtured through the high school, groomed through the preparatory school, trained in the academic college, moulded in the medical school, finished in the hospital, and polished in the postgraduate school—with spurs to win in the running. The man well dressed has more self-respect than the man shabbily clad. His horizon widens, and his chest and waist measurements expand. To him life seems worth living. But to the average practitioner even the low eminence of a good living in its broad sense is denied him on the basis of fees as they are listed to-day. The fees, in the rural sections at least, are certainly too low, and the fear of protest by the family against a rise is not well founded, judged by actual demonstration in those towns where the rise has been adopted. A little banter about the "doctors' trust" is only a pleasantry, and the higher fee is as cheerfully paid as the lower. The demand of medical schools for a higher preparatory education, and the necessity of maintaining a higher level through the entire course, means a larger outlay of money which must be recouped in practice. No man who rightly and modestly esteems his ability can preserve his self-respect by accepting a pittance for his services. No man who has to worry over his finances can do his best work. It hampers him at every step, cramps his mind, and starves his body. Let the fees be advanced.—*New York Medical Journal*, September 14, 1912.

A Physician to Guide the Destinies of the Chinese Republic.—Dr. George Ernest Morrison, who for fifteen years has been the *London Times'* correspondent at Peking, has been offered and has accepted the position of political adviser to the President of the Chinese Republic. Dr. Morrison was born in Victoria, Australia, in 1862, and studied at Melbourne and Edinburgh Universities. When only twenty years old he undertook a pioneer expedition to New Guinea. The next few years saw him, now roving, now practising medicine, in this country, the West Indies, Spain, Morocco, and ultimately in the Far East. His celebrated walk of more than two thousand miles across Australia was rivaled by a three-thousand-mile walk across China, and then by a walk across Manchuria to Vladivostok on the Pacific. Dr. Morrison traveled alone, dressed as a native. These and his other journeys were undertaken, not to satisfy a restless spirit, but to acquire knowledge at first hand. The result, so far as China was concerned, was that he knew the country better than did any Chinese statesman, for no one of these had studied it from as many angles. Little by little he came to be consulted as one who could speak with comprehensive knowledge, and he was frequently consulted, especially during the three critical years before the Boxer atrocities startled the world in 1900, and also during the anxious time just before the beginning of the Russo-Japanese War in 1904. The following year, at the Russo-Japanese Peace Conference at Portsmouth, no one among the one hundred and twenty newspaper correspondents awakened more sympathetic respect than did Dr. Morrison. The appointment of such a man is a significant sign of President Yuan Shi-kai's recognition of the fact that a young republic like China would do better with a tutor than without one.—*The Outlook*, September 14, 1912.

A Light Without Matches.—Every motorist has probably at some time been in the predicament, especially if a non-smoker, of being overtaken by darkness while on the road, without a single match. There is a simple method of obtaining a light, the knowledge of which may on occasion prove important. Unscrew one of the spark-plugs, and let it lie on the cylinder head. Wrap a small wisp of waste around the end of any stick, or tool, and soak it in gasoline. Lay this close to the spark-plug and turn the engine over until this plug sparks, when you will have a torch to light your lamps (and, in emergency, your cigar).

Piping Leaks Waste Acetylene.—It is no "pipe dream," but a reality, that over fifty per cent. of the cars using acetylene headlights have leaky pipe lines. Investigation has also shown that through these leaks more gas escapes than is burned in the lamps. The chief source of the leaks appears to be in the rubber tubing. In many cases this has been in use for many months, and through exposure to the weather and natural wear, cracks result. A few cases are found in which the brass pipe line has become chafed in spots, while in other instances leaks are found in the lamps themselves. Renewal of the rubber tubes semi-yearly and inspection of the metal pipes will often save the loss of many cubic feet of gas.—*Automobile Topics.*

Medical Record

A Weekly Journal of Medicine and Surgery

Vol. 82, No. 15.
Whole No. 2188.

NEW YORK, OCTOBER 12, 1912.

$5.00 Per Annum.
Single Copies, 15c.

Original Articles.

GOUT OF THE INTESTINES.

By ALEXANDER HAIG, M.A. AND M.D. OXON., F.R.C.P.

CONSULTING PHYSICIAN TO THE METROPOLITAN HOSPITAL, SENIOR PHYSICIAN TO ROYAL WATERLOO HOSPITAL FOR CHILDREN AND WOMEN.

IT is interesting to see that gout explains nearly all the "diseases" of this part of the body, and in the new light which it throws on their etiology and pathology we see clearly that these troubles are not and never have been diseases in the sense of definite pathological entities, but correctly speaking are mere incidents in the course of food poisoning by uric acid.

To follow an anatomical order, we shall here get a complete explanation of nasal and pharyngeal catarrh, catarrh of the neighboring larynx and trachea, catarrh of the esophagus of the stomach, gastroduodenal catarrh and jaundice, ulceration of stomach and duodenum, colitis, appendicitis, and some forms of piles. We shall also get a complete explanation of the immunity of the small intestine from these troubles.

This causation also explains completely the incidence of cancer of these same parts, as it is now seen to affect exactly the same parts as gout does and in the same order. This fact therefore clinches the relationship between gout and cancer and shows that if cancer is due to parasitic invasion its parasite is, like that of catarrh, influenza, tubercle, and malaria, unable to attack those individuals or those parts of the body which are free from the gout poison—uric acid.

And so we may note at the outset that these troubles affect just those parts of the alimentary tube which either are acid, owing to acid secretions, or are exposed to the introduction of acids in food, or to cold on the surface of the body, or to cold food (iced foods and drinks); while they as carefully avoid those parts which are alkaline and owing to alkaline secretions are less exposed to the bad effects of acids and cold.

The attempt to cover in the space of a single article so wide a field must be my excuse if my remarks about some of these conditions are very short, and if I take as granted and known what I have already said elsewhere.

Thus in the *British Medical Journal*, 1908, Vol. I, p. 1100, also "The Etiology, Prevention, and Treatment of a Common Cold," Bale, London, price 3d., and in "Uric Acid as a Factor in the Causation of Disease," Ed. VII, Ch. IX, I have shown that catarrh of the nose, pharynx, larynx, trachea, and bronchi, as seen in the course of a common cold, is a gout or rheumatism of these tissues which may be precipitated by cold or a microbe or by both acting together; that in treatment we do not require to trouble about the parasite in any way, provided we remove the uric acid by means of an alkali (pot. cit. or sodii bic.) and that those whose bodies have been cleared of excess of urates by several years on natural uric-acid-free foods are immune to catarrh in all forms, and to any of the parasites associated with it.

These people are similarly immune to gout of the intestines and are most unlikely to suffer from cancer in this or any other part.

But to return to our immediate subject, the nose, pharynx, and larynx are all exposed to the action of cold and of microbes, and if cold can precipitate upon these parts a few particles of urate this will give rise to the congestion which we call inflammation and in the irritated area the microbes can flourish and the process thus begun may then travel along these tubes by continuity from end to end.

This explains what takes place in an ordinary catarrh, and the vicious circle of this phase of food poisoning is at once cut through by means of an alkaline solvent which removes the urates; immunity is afterwards acquired by keeping them out by a diet which is free from poisons. This relation to alkali and alkalinity also explains for us why gastroduodenal catarrh may stop at the duodenum and why gastric congestion and ulceration are relieved by alkali (see later).

The esophagus is only occasionally affected by gout, which here generally takes the form of myalgia, causing pain as the bolus of food passes down over the seat of irritation. This may be an incident in a catarrh descending from the pharynx, or may be produced by the action of certain hot, acid or otherwise irritating foods. The esophagus is but little exposed to cold as compared with the pharynx, for instance, hence gout of the esophagus is less common than that of the parts above it.

According to Mr. Roger Williams, "The Natural History of Cancer," London—William Heinemann, p. 380—the tongue and mouth are much more affected by epithelioma than the esophagus, but the esophagus suffers more than the intestines apart from the stomach and rectum, the two latter being, as I remark, the most acid parts of the alimentary canal.

Catarrh of the stomach and duodenum is liable to be set up in the food poisoned by several things such as descent of catarrh by continuity from above, the local action of cold, the local action of acids, corrosive and irritating substances in the food, and under certain abnormal conditions by the excessive action of its own secretion. Thus the epigastrium is often exposed to cold, *e.g.* when the clothing in front of the body is unfastened or diminished while cycling or motoring against the wind, then precipitation of urate (gout) may take place in a moment and the rest follows. Once you have set up a local precipitation the process goes on of itself. Ices or iced drinks, or acid foods or drinks may act in the same way and start a process which will go on of itself long after the cause has been forgotten.

This etiology explains also a point noted by Mr. Mansell Moullin in his paper on "The Significance of the Symptoms in Cases of Duodenal Ulcer," *Lancet*, 1912, Vol. I, p. 566, namely, that the trouble returns again and again in the same part of the stomach or duodenum. The explanation is exactly the same as that of the formation of a gouty tophus in the toe, once some urate has been thrown out there, it attracts more and more till there is a lump as large as an egg. In the same way the urate in the wall of the duodenum not having been completely cleared out after the first attack of gouty irritation, more is easily attracted to the same spot whenever the blood is full of it, or when cold, acids, or some slight alteration in the digestive process increase the local acidity and congestion. Thus trouble of this nature may go on either in the stomach or duodneum more or less intermittently for days, weeks, months, or years, till the patient from long illness becomes debilitated and collemic, or till the stage of life alters, or till some one gives sufficient solvent to clear out all the urate from the gastric or intestinal wall, or till food poisoning is put an end to by ceasing to swallow xanthin. I have seen numbers of cases where patients have suffered for fifteen or twenty years from such gastric or intestinal irritation, gastritis, gastralgia, heartburn, etc., simply because no one had given a solvent of uric acid, or not in sufficient quantity or sufficiently long continued; where a solvent has at once relieved and a change of diet has then kept them free from all further trouble of this nature. It is indeed small wonder if many years of such constant or recurrent irritation frequently pave the way for cancer, and we here see clearly one way in which change of diet may prevent this deadly sequel.

The causation of gastrointestinal dyspepsia, defective secretions, deficient bile secretion is thus quite easily explainable, for these symptoms are obvious results of congestion and catarrh of certain portions of the alimentary tract. Several of these signs together with bilious attacks, migraine, and vomiting are obviously mere incidents in the course of chronic food poisoning affecting at one time chiefly the circulation and, causing high blood pressure, migraine, eye symptoms, retinal changes, at another chiefly the local tissues, causing catarrh, dyspepsia, altered gastric and duodenal secretions, with more or less marked failure in the digestion and metabolism of food.

In regard to the treatment of such a case my rule is that every chronic or recurrent gastric or duodenal pain may be a gout of the part if (1) it comes in a retentive stage of life, (2) if the patient has signs of uratic irritation elsewhere, especially in the joints, (3) if it comes in relation to excessive gastric acidity, and (4) if it is made worse by local cold or by acids (wine, fruit, etc.) in the food. Then if my diagnosis is correct it will be promptly relieved by solvents and infallibly cured by the uric-acid-free diet.

With reference to gastric and duodenal ulceration, Mr. Mansell Moullin clearly shows in the above-named article (p. 565) that the primary cause is chronic and recurrent local congestion which leads sooner or later to a rupture of the surface with removal of its epithelial coat and then the acid gastric juice does the rest. He considers that the pain is due to muscular spasm of the congested part (colic of the stomach, pylorus, or duodenum), though if the congestion goes on and leads to ulceration this will increase the pain. He also considers that hemorrhage is often due to bleeding from a congested surface, and, except when it is copious, is not to be regarded as a sign of ulceration.

No doubt there is a further cause of gastric or duodenal ulceration in embolism or thrombosis, which by producing local congestion, resembling that caused by gouty irritation, leads up to a break in the epithelium and so to local digestion. But there is no more frequent cause of embolism than endocarditis or of thrombosis than the effects of uric acid on the blood and its circulation, so that here again we have to deal with nothing but food poisoning and its primary and secondary effects. We must also bear in mind that any irritation, however it originated, is liable to be kept up in the urate laden by the precipitation and reprecipitation of urates in the acid and irritated parts. For the more a tissue is irritated and inflamed the more acid it becomes and the more completely will all the urate in the blood be attracted to it and deposited within or upon it. There is no end to such a process except the end of the urate supply, or a change in the stage of life which substitutes a collemic or solvent stage for a retentive one, and this not in one place only but throughout the whole body. (See "Uric Acid," p. 236.) This is the way that alkalies act in relieving those gastric and duodenal troubles, and in all tissues affected by uratic catarrh; it is not a mere matter of the neutralization of acid gastric juice, but the blood everywhere is rendered a good solvent of urates and tends to take them up from the tissues in place of throwing them out; and with their removal the local irritation, by whatever name we have called it, subsides. Hence, as I have pointed out in the case of bronchial catarrh, we must give sufficient alkali and continue it sufficiently long to greatly increase the alkalinity of the blood and to diminish often to nil the acidity of the urine, and it is by failing to do this that many fail to get complete and conclusive results.

We need not now say very much about the relative immunity of the rest of the small intestine, it is a simple result of its alkaline contents and secretions. But this immunity is relative only, for if anything overcomes its alkalinity, *e. g.* acids in the food, or produced by fermentation, or if it is acted upon by such metals as lead or mercury which precipitate urates into its tissues, we may get gout even here and it is likely to take the form of colic, *i. e.* muscular spasm, as this is the first reaction of such intestinal tissues to the irritation produced by urate compounds with the metals, and flatulence is the sign of a minor stage of the same form of irritation. Such flatulence and colic can always be relieved by a sufficient supply of a solvent to reverse the process and take up the urate into the blood stream.

We may now pass on to the large intestines where the reaction of the canal and of its contents again become acid and where we should expect just what we find, that the structures in its walls are again liable to acute and chronic catarrhal processes, due, as before, to the local action of acids or of cold or any irritating substance which may originate local uratic precipitation and thus start a process which will continue of itself.

Such is the origin of a gouty catarrh, which here again may spread throughout the whole of the large bowel, or after an acute blaze up may become chiefly local in one part of it, just as after an acute and general arthritis one or two joints may remain

seats of chronic local and recurring irritation. This similarity of course and duration also means identity of causation. Such a catarrh may become chronic, associated for weeks, months, and years with the passage of more or less large quantities of mucus, it may remain more or less general over the whole tube or become chronic in certain regions, *e.g.* the cecum and appendix or the sigmoid flexures, where it may ultimately give rise to thickening, adhesions, distortions, associated with most obstinate constipation, or may go on to more or less severe local ulceration, perhaps as in the case of the appendix ending in perforation. The obvious clinical relation of many cases of appendicitis to gout is thus easily and completely explained.

Then again some forms of piles are quite clearly related to exposure to cold, as for instance by sitting on cold stones or on damp ground, or to the taking of acid fruit or of fruit out of season, or of fruit which comes from a warm climate but is consumed in a cold one, and if any of these things acting apart or together sets up a gout of the fibrous tissues of the lower rectum or anus we get a local general or venous congestion essentially similar to those described above and curable in the same way by a recognition of the fact that solution and removal of urates is the effect we must produce. Any of these causes acting singly or in combination might equally have affected some other portion of the intestinal tract, but just as they fail to affect the small intestines below the duodenum, so will they be most likely to act on any part of the intestine which is most acid or is at the time most subjected to irritation from the nature of its contents or surroundings.

Any application of cold to the abdomen or lower extremities is always dangerous for the urate-laden. But those who have taken the trouble to get moderately free from these poisons have more or less decided immunity up to absolute freedom, and this freedom is, practically speaking, a measure of the amount of urate they still have in their blood and tissues. On the other hand prolonged exposure to cold may eventually produce trouble in any one, however free from urate their diet may be, for the effect of exposure to cold for a week or ten days is to accumulate a store of urate in the liver, spleen, or elsewhere in the body, and those who have a store have lost their freedom and are, to the extent of their store, as liable to uratic catarrh as those who feed wrongly; and this catarrh will affect any seat of local irritation, either the part exposed to cold or any other part of the intestine, or of the body whose alkalinity is for a time diminished. Thus it may affect the seat of old uratosis, adhesion, ulceration, etc., or a new part which has been exposed to severe cold, irritation, or injury.

As we see in "Uric Acid," (*loc. cit.*, p. 432), sprue is an intestinal trouble sometimes related to exposure to cold. People go to sleep in warm climates only lightly covered and perhaps do not wake in the morning till they are chilled and cold owing to a great change of temperature. In this way there may originate in the food-poisoned a gout of the intestines which is called spruce or "hill diarrhea." This is in many cases quite successfully treated by solvents, and may be cured, like other catarrhs, by the uric-acid-free diet; but, apart from these, it is liable to be repeated and eventually to become chronic and almost incurable. So far as I can judge, its primary symptoms seem to be those of catarrh and catarrh anywhere in the body is gout.

Thus it happens that I have cured some cases of sprue which had come home to die, simply by making them uric acid free; no catarrh can survive that. Most of the symptoms of sprue, viz., diarrhea, undigested food, especially undigested fat, and absence of normal bile coloring matter, are common incidents of duodenal congestion and catarrh as seen in this country. Some consider sprue to be related to dysentery and this again is but a gout of the intestines, it does not attack the uric acid free and many cases are cured by the uric-acid-free diet. The common treatment of sprue by warmth and milk diet is testimony to the same effect. Ipecacuanha, again, a specific for dysentery, has a good effect on catarrh in every part of the body, and the relation of colitis, colonic catarrh, and dysentery to starvation is again very easily explained if we regard them all as gout of the intestines. Here, also, just as in catarrh of the respiratory tubes, microbic invasion may play a more or less important part in causation, but as a rule I believe we need waste no time on the microbes if we first dissolve out the urates and then keep the patient uric acid free for years.

What is true of sprue apparently applies equally to acute summer diarrhea of children in this country, for this also is in many cases a catarrhal process and catarrh everywhere is gout. Coming as it does in our hot season, or as the hot season merges into autumn, the conditions present, namely hot days and cold nights, resemble to a remarkable extent those that give rise to sprue.

All the wrongly fed children in this country are full of uric acid, and the hot weather brings this into the blood in large quantity. On this there follows a chill of the abdomen owing to a restless child kicking off the bed clothes and the result is a gouty or catarrhal enteritis with vomiting, diarrhea, and rise of temperature.

Here, just as in the similar catarrh of the bronchi, you have only to give enough alkali (at least 20 gr. every two hours) to get the urine quickly alkaline, and the temperature falls within forty-eight hours and the vomiting and diarrhea cease.

Alkalies have often been used in summer diarrhea, but never, so far as I know, in a dose comparable to that which cures bronchitis, and ipecacuanha has been found useful in it just as in the other similar troubles mentioned above.

If the treatment by alkali were to be widely used we should soon see how much of our summer diarrhea was due to gout and gout only, just as we now know that all bronchitis which is not part of a specific disease is not dangerous, as it can be quickly cured by alkali.

In summer diarrhea the alkali does best when given alone, even bismuth is a hindrance to its action rather than a help, but where the diarrhea has led to collapse you have to deal with a heart which is feeble and dilated from defective nutrition, and then the alkali may be combined with small doses of strophanthus or digalen; but ammonia and all stimulants which are also retentives of uric acid are, just as in the case of bronchitis, out of place. It is much more important to put an end to the inflammation than to stimulate.

And just as it is now clear that catarrh spreads through the respiratory passages and other portions of the body owing to the fact that microbes flourish in urate-laden tissues and as there is at least considerable suspicion that similar conditions favor the spread of tubercle (see "Uric Acid," *loc. cit.*, p.

394) why may not cancer also do the same in the same way, tissues irritated by urate deposits and accumulating waste products favoring its spread? Indeed owing to the researches of Mr. H. C. Ross we now know that some waste products closely related to uric acid excite cell proliferation and tumor formation. (See "Induced Cell Reproduction and Cancer," by H. C. Ross, London. John Murray, and "Further Researches into Induced Cell Reproduction and Cancer," by H. C. Ross and others, 1912.)

The effects of correct diet are probably twofold, for not only are urate-laden tissues with defective circulation and deficient removal of waste products favorable breeding grounds for many kinds of microbes as well as for endo- and ectoparasites, but tissues which are free from urates and waste products and have a natural quick capillary circulation are most unfavorable for them.

Syphilis again may furnish another instance of a parasitic organism profiting by the conditions brought about by uric acid poisoning in tissues and their circulation. The effect of mercury as well as of iodides is to clear the blood of uric acid and to free the circulation from its lethargic grip, hence it produces conditions unfavorable to the parasite, and not to this one parasite only but to many. And here we come into position to understand the cure of syphilis by diet without drugs, for the uric-acid-free diet produces the same effect on the circulation that mercury does, only the effect is permanent in place of temporary. (See "The Schroth Cure," by Dr. S. Moller of Dresden. London: George Standring, pp. 37 and 66.) This diet relationship may explain why syphilis was less prevalent in olden times when there was less flesh eating, and there was no tea drinking in Europe till the sixteenth century. Thus I note that Dr. Norman Moore said in the recent debate on syphilis in the Royal Society of Medicine (*British Medical Journal*, 1912, Vol. I, p. 1426) that syphilis was unknown in Europe till the end of the fifteenth century. When writing about the Schroth cure a few years ago I did so under the name "Hunger and Thirst Cure," for patients may object to admit that they have been through the Schroth cure owing to its use for specific disease.

It is not needful to do more than point out that cancer affects just the same parts that gout attacks and avoids other parts, *e. g.* the small intestine, with suggestive regularity. Catarrh in the nose and pharynx leads to the formation of polypi and these may become cancerous. Cancer may also affect the nose and eyes and the parts near them, parts also affected by catarrh. Mr. Roger Williams (*loc. cit.*, p. 385), says, "The great predisposition of the skin of the face, especially that of the nose and its vicinity, to develop cancer is remarkable." It is remarkable that cancer attacks the stomach and duodenum and the parts adjacent such as the liver, gall-bladder, and pancreas, and then we have again considerable immunity for the small intestine which diminishes decidedly in the large intestine, especially as we pass to the left of the middle line and its contents become more concentrated and more acid. It is also remarkable that the small intestine has considerable immunity from non-malignant tumors, such as fibromata, myomata, papillomata, and polypi; and we have already known for a long time that fibromata of the uterus are related to gout. ("Uric Acid," p. 715.) It is also probable that these non-malignant tumors are, owing to the chronic irritation which they tend to keep up and intensify, frequent starting points of malignant growths.

Mr. Roger Williams (*loc. cit.*, p. 381) says that tongue, mouth, face, and lips account for about 9-10 per cent. of cancer cases, and on p. 384 he notes after speaking of the great preponderance (61 per cent.) of intestinal cancer in the rectum, that only 5 per cent. is found in the great length of small intestine and that the duodenum is rarely affected.

It is hardly likely that so large a number of facts and so complete a parallelism, involving gout, non-malignant and malignant tumors, can be explained by anything short of identity of causation. Thus the local natural history of cancer and its incidence in the intestines emphasizes what the diet history of the world shows, that gout and cancer go everywhere together hand in hand, being both of them less common in warm and more common in cold climates, because they are but two results of one and the same cause—local irritation by food poisons.

Among minor points which my knowledge now enables me to explain quite easily, I may mention Mr. Mansell Moullin's observation (*Lancet*, 1910, Vol. II, p. 995) that an operation has a great effect in relieving or curing local gastric or intestinal congestion. He attributes this largely to the fact that the operation lowers blood pressure and this may explain it (see "Uric Acid," pp. 625-6), but I may add that if the patient and his nutrition are considerably upset by the operation there will come, two or three days after the operation, a marked fall of urea and acidity, and such fall of acidity is practically equivalent to a course of alkali, the action of which I have already spoken of.

He also points out (*Lancet*, 1912, Vol. I, p. 563, and *Lancet*, 1910, Vol. II, p. 996) "The Essential Cause of Gastric and Duodenal Ulcer," that duodenal ulcer is considerably more common after thirty in males than in females, but this is easy to explain if we are dealing with a gout of the intestine, for thirty is in the second or great retentive stage of life ("Uric Acid," *l. c.*) and retention is always more marked at that age in males than in females, as the latter excrete excess of uric acid at each monthly period and as a result of this suffer comparatively little from gout till after the menopause.

Mr. Mansell Moullin also remarks that pain is worse after meals and especially at night, but so is the pain of gout in any other part, for after meals, and especially at night, there is a rise of acidity. The effect of food is at first to increase alkalinity, during which stage it may do good. But this effect does not last long as its later effect is to cause a rise of acidity and do harm. He also refers (p. 564) to the notion that alkalies relieve merely by diminishing the acidity of the gastric juice; but I quite agree with him that this is not a complete explanation of their action and that here, as in bronchial catarrh and other uratic irritation, they relieve by dissolving uric acid and removing it from the irritated tissues.

As he also points out (*Lancet*, 1910, p. 997), strong acid may be put into the stomach or it may be cauterized without producing any pain, so that it would require something much stronger than normal gastric juice to produce pain. His conclusion, with which I quite agree, is that the pain is due to local congestion complicated by muscular spasm, and this, as we now see, is a common result of urate irritation both in the stomach, intestines, and the uterus.

He looks upon colic as painful spasms of muscle due to local irritation, and this is no doubt the way in which lead, mercury, copper, tin, and other metals produce colic through uratosis; and flatulence, as I have long known, is but a minor condition of the same thing. Any exposure to cold, acid fruit, acid wine, or cider may in the urate-laden produce first flatulence and then colic, and what relieves the one relieves the other. On p. 566 he speaks of the curative effects of alkalies and starvation; and starvation is equivalent to a course of alkali, the effect of which it increases. An exactly similar treatment by alkali and starvation is most useful in the case of ordinary bronchial catarrh.

Mr. Mansell Moullin also lays much stress on the effects of septic poisons swallowed from the mouth when teeth and gums are in a bad state. But these have little effect either on the stomach or the joints when swallowed by the uric acid free, though to be uric acid free always diminishes to a considerable extent the tendency to such things as Riggs' disease, dental periostitis and other local uratic troubles, the Riggs' disease thus proving itself to be but one further instance of the combined action of microbes and urates.

The relation of duodenal ulcer to burns is attributed by Mr. Mansell Moullin to septic absorption, but any shock to the body of a gouty man is a potent cause of gastroduodenal congestion from collemia, and an interesting case he mentions (p. 566), that of a young man who got jaundice following slight traumatic synovitis or other injury, could, as he notes, hardly be due to sepsis, but is easily explained by shock inducing collemia and circulatory congestion in the stomach, liver, and duodenum. This young man was probably in the first collemic stage of life and therefore specially likely to be affected in this way; a few years later he will cease to be so easily affected. Mr. Mansell Moullin says we are still very ignorant regarding the vascular and nervous supply of these regions, and as regards the circulation I quite agree—we have still much to learn.

He also refers to the way in which what appears to be a trivial exposure to cold will cause a relapse of all symptoms after perhaps a considerable period of immunity, and this is, as I know, quite true for the food poisoned, but not for the uric acid free.

So far as I know there is no necessary limitation of gout to any one layer of the intestinal walls; urates may be precipitated in any layer at any moment and continue to affect that layer or spread either inwards or outwards to neighboring layers, according to the amount of urate available and the local conditions affecting either its precipitation from or its resolution in the blood stream. There is no condition tending more strongly to local precipitation than the presence of urates already in the tissue, and it is by aiding solution and removing all previous deposits that alkalies cure. But cure is only complete when removal is complete.

The frequently observed relation of all such processes to gout and rheumatism is thus easily and completely explained, and the relationship is so frequently met with that some have been even inclined to look upon gout as a gastrointestinal toxemia; but I am sure that this is an inverted reading, catarrh and uratosis are the first step after an excess of uric acid has been poured into the body by unsuitable food, and then catarrh and uratosis lead on to chronic dyspepsia and so to debility, anemia, neuroses, and neurasthenia, some of which are thus but mere stages in the course of food poisoning.

Whether all new growths and cancers originate in seats of such chronic local irritation has still to be found out, but it is certain that many do so.

I regard local treatments and intestinal antiseptics and irrigations as of little use. The first thing to do is to get the blood into a condition to dissolve out the urates, and this also is the effect of heat, which is both directly and indirectly a solvent of uric acid. For the same cause foods that cause local irritation can have but little effect so long as the blood is in a condition to dissolve and take up urates in place of throwing them out. Probably the local effect of many irritants is small, but great harm is done when that effect is constantly increased and kept up by uratosis. In this way the seat of a recent fracture in a bone may give its urate-laden owner some six or eight distinct periods of irritation in the course of the twelve months of changing seasons; but if he becomes uric acid free these gradually cease to trouble, so that after a year or two he may quite forget where the fracture was. It is exactly the same in the case of the viscera of which we are speaking, comparatively slight irritation or exposure to cold may start trouble when there is plenty of urate available.

I myself in my food-poisoned period certainly suffered from "hunger pain" and used to carry biscuits to bed with me. I doubt whether I ever had gastric or duodenal ulceration, but I often had congestion and colicky contraction of muscles (the cause of the pain) due to a local uratosis (gout). But such sensations are now memories only; they disappeared years ago along with the other symptoms of a food poisoning which has long ceased, but which could, I believe, be easily reproduced by a further dose of poison. It was often thought that I suffered from gallstone when I was a boy, but the diagnosis was held to be inadmissible on account of my age (early twenties). What I really had was colic of certain areas in the stomach and duodenum due to uratosis, and 5j of sodii bicarb. in 10-15 oz. of warm water promptly relieved.

Salicylates act in exactly the same way by dissolving out and removing the urates which cause the irritation; but certain conditions, viz., good strength and nutrition, fever, highly acid food, favor the solvent action of salicylates, while the opposite conditions, viz., debility, starvation, subnormal temperature, favor the action of alkalies. It matters very little which you give, but give those which are favored by the general conditions present in the given case. Then in all cases which are thus relieved by solvents the uric-acid-free diet will finally prevent and cure, and if, as seems probable, a diet poor in protein aids recovery from cancer, it here acts in just the same way as it does in the parallel conditions of gout and catarrh.

In the light of these facts we can see that bread not only constipates by the action of the astringent salts it may contain, but that by the acidity of the wheat, the added acids of baking powders, and of fermentation it is a cause of gout not only in the joints but in the intestinal canal, and thus aids in the production of chronic catarrh, fibrosis, and adhesions and the eventual conversion of a functional constipation into an organic. Even apart from the xanthin which its fibrous coverings contain, wheat is not and never has been a natural food for man, and the only individuals of the species who show any evidence of being able to thrive upon it are those who, living laborious lives, excrete day by day from their skin glands considerable quantities of the acid it supplies.

The causation of uterine fibroids, as also of fibroids and fibrosis elsewhere, is very often a mere matter of recurrent monthly irritation by gout. The first stages of the process are accompanied by pain of a colicky nature, which tends to appear just as the postmenstrual collemia is coming to an end and retention takes its place. Such pain may be met with from about the fifth to the tenth day after the cessation of the period, and the uterine and intestinal fibrous tissues are the parts in which the urates are retained. (See "Uric Acid," p. 153, *et seq.*)

Underfeeding, starvation, or the hunger and thirst (Schroth) cure may relight an old or smouldering colitis, just as a single day of hunger or the dropping out of a meal or two may relight an old pharyngitis or tonsillitis by getting some old urate deposits into solution; for it is urate in solution which causes the irritation and not the biurate deposit, which is often seen in the tissues without a sign of recent inflammation round it. A course of alkali, which acts in the same way as hunger or starvation, may also make things worse at first by getting some old deposits into solution, but continue to give it plentifully, and, with the complete removal of the urate, the trouble will gradually subside, and then a precisely similar course of alkali given a few weeks or months later will not light up any trouble as all the urates are gone.

As the urate is being got into solution it may not only cause local iritation, it may be redissolved and reprecipitated in other distant parts, even to the extent of bringing out the picture of acute rheumatism, a sequence which is specially likely to be met with in dealing with the large quantities of urate sometimes present in the body and blood in Bright's disease, for instance.

Hence in those who have once had a colitis, even perhaps years previously and entirely forgotten, hunger or starvation or a change of food to something that is more alkaline than usual (*e.* g. potato), may suffice to light up a colitis once more, but continue the solvent process, and when all the urate has been dissolved out and excreted the local irritation will subside, and, if the body is now kept clear of urate excess, need never be relighted. These symptoms and phenomena are all matters of urate solubility under constantly varying conditions of food, climate, drugs, and time of life.

We see then that gout of the intestines is a catarrhal process, affecting first of all the mucous coats of the alimentary canal. It may be limited to the mucous coat or spread to neighboring fibrous tissues. It goes through various stages of congestion, with mucous, mucopurulent, and purulent exudation, and is more easily cured in its early stages before the exudations are purulent. It may go on to ulceration, fibrous tissue increase, adhesion, and distortion of structure, more rarely to definite accumulation and deposit of urate in bulk (biurate) visible to the naked eye; but a certain amount of interstitial accumulation to be found by chemical analysis is not uncommon. It affects chiefly and in the first place parts exposed to cold, acids, heat, or irritant substances. It may spread from these parts either by fibrous tissue continuity or by the spread of microbic invasion hand in hand with urate precipitation and defective circulation and metabolism through the tissues.

The chronic irritation it produces in these tissues may, like the similar irritation similarly produced in other tissues, though called by other names, pave the way for cancer, and cancer, like the catarrh which precedes it, affects, as we now see, chiefly the parts exposed to cold, acids, heat, and irritant substances. Both cancer and catarrh avoid those parts which are not so exposed, or which owing to warm position, alkaline secretion, and a large supply of alkaline blood are but little liable to urate precipitation. They both also affect largely the acid parts, stomach, and rectum.

These intestinal troubles not only occur in constant relation to gout and rheumatism in other tissues, but in common with bronchial and other respiratory catarrhs are all made worse by acids, cold, and retentives, and all made better by alkalies, heat, and solvents of uric acid, so that the diagnosis in any given case need not long remain in doubt.

And once this diagnosis has been correctly made it is a matter of certainty that the uric-acid-free diet, properly inaugurated and continued, will remove eventually not only all signs of and all tendency to catarrh but many even of the fibrous tissue changes and distortions. We thus get an explanation of the fact that some parts of the intestines are specially liable to both gout and cancer and can see that a similar explanation may be given of the spread and special tissue habitats of tubercle and syphilis, so that in fact, as I have said before ("The Circulation as a Factor Which Determines the Effects of Microbic Invasion," MEDICAL RECORD, September, 1910), if a man is free from food poisoning he is practically free also from the more serious forms of microbic and parasitic invasion.

AGAR TUBES FOR THE ESTIMATION OF THE PANCREATIC FERMENTS.*

By MAX EINHORN, M.D.,

NEW YORK.

PROFESSOR OF INTERNAL MEDICINE AT THE NEW YORK POSTGRADUATE MEDICAL SCHOOL.

THE accessibility of the duodenal contents including pancreatic juice for examination has created a more frequent demand for the analysis of the pancreatic secretion.

Besides testing it for reaction whether neutral, acid, or alkaline, specific gravity, appearance, and admixture of mucus, the principal point of importance is to ascertain the presence or absence of its three ferments: amylopsin, steapsin, and trypsin, and if possible their approximate amount. The usual methods serving this purpose are somewhat complicated. It has appeared to me that if the tests were simpler the examination of the pancreatic function would be more often undertaken by the clinician, and in this way be of more assistance in diagnosis.

My aim was at first to make use of Mett's tubes for the determination of the trypsin ferment and to arrange for similar tests for the remaining ferments. Mett's tubes proved unsatisfactory for this kind of work, the albumin frequently failing to disappear, notwithstanding the presence of trypsin. Fermi's gelatine tubes which I used in conjunction with Rosenbloom are much more appropriate, the only disadvantage being that they have to be kept at the temperature of the room. In as far as the tests for steapsin and amylopsin are better made at blood temperature, it requires separate specimens, some to be kept at the room temperature and others at blood temperature. In dealing with small quan-

*Read before the American Gastroenterological Association on June 3, 1912, at Atlantic City, N. J.

tities of secretion, as is often the case, this is a drawback.

For amylopsin starch-tubes have been used by Wohlgemuth. My attempts to employ the same kind of tubes for the amylopsin tests failed utterly. If we took a high percentage of starch, 8 to 10 per cent., in the tubes, it would not liquify, but would remain as a solid mass in the tube, while on using a lower percentage (5 per cent.) it would flow out completely without the presence of the amylopsin.

These tubes not working satisfactorily, it occurred to me to use test substances in agar vehicles. The principle is the following: Agar tubes,—mixed with albumin, starch, fat,—allow the ferment action to take place in them by osmosis. If the test substances added are colored with indicators, which undergo a change when acted upon, it is easy to ascertain the presence of the ferments, and also to estimate their approximate amount by the volume of tube changed given in mm.

The manner of making the different kinds of tubes is as follows:

I. Starch Tubes.—Agar powder, 2.5; starch, 5.0; tincture of iodine (U.S.P.), 2.0; distilled water to make, 100.0.

Rub the starch and agar in a mortar with sufficient water to make a smooth paste, add the tincture of iodine and then the balance of the water. This mixture is placed in a flask and heated to the boiling point. It is then drawn by suction into a capillary glass tube (inside diameter one and one-half millimeters) which has previously been warmed in the flame. The tube and contents are allowed to cool and are then cut into three centimeter lengths. These are sealed at each end with melted paraffin.

II. Olive Oil Tubes.—Olive oil, 1.0; agar powder, 2.5; phenolphthalein test solution (U.S.P.), 1.0; potassium hydroxide test solution (U.S.P.), 0.5; distilled water to make, 100.0.

Rub the olive oil and agar together, add sufficient water to make a thin paste, then add the test solution and finally the balance of the water. Proceed then the same as with starch tubes.

*III. Hemoglobin Tubes.**—Hemoglobin powder, 1.0; agar powder, 2.5; distilled water to make, 100.0.

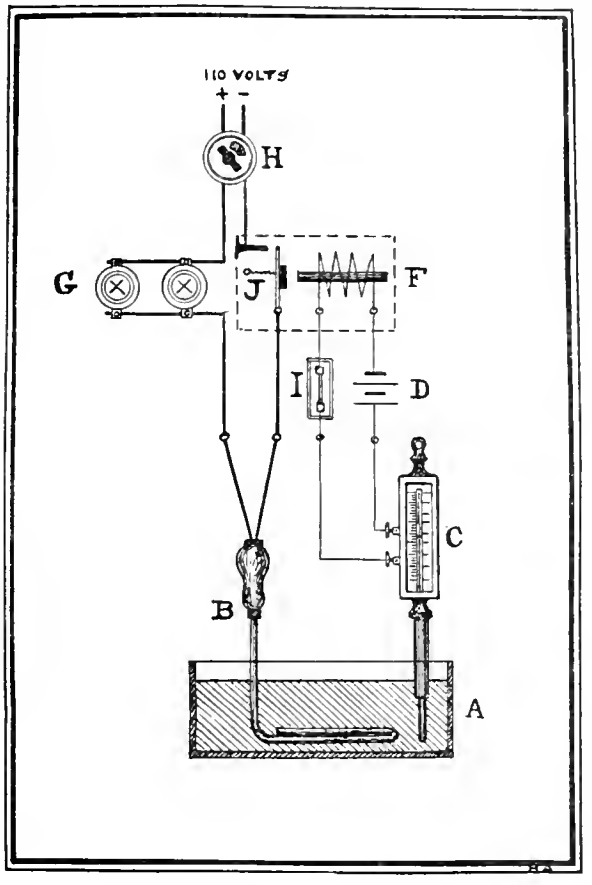
Rub the hemoglobin with about 10 c.c. of water until it is smooth, add the agar powder and the balance of the water; then proceed in the same manner as with the starch tubes.

When these tubes are acted upon by the ferments the dark blue starch tube, the red olive oil tube, and the brownish hemoglobin tubes will all be discolored, beginning from the end of the column touching the fluid for quite a distance upward, generally depending upon the amount of ferments present.

While in our first experiments the control tests with boiled specimens showed no changes, later on we noticed that these also, particularly the starch and olive oil tubes, became discolored sometimes to a considerable extent. This circumstance threatened to spoil the entire method. The cause of the discoloration in the boiled specimen cannot be the action of the ferment, as the latter has been destroyed. It is simply due to a disappearance of the coloring matter (iodine in the starch and phenolphthalein red in the oil) through osmosis, while the test substances themselves have in reality undergone no change, *i.e.* the starch still exists as starch and the olive oil likewise as neutral oil.

In the unboiled specimen, however, the discoloration brought about is due to an intrinsic change of the test substances; the starch has changed into sugar and the neutral olive oil has been split into fatty acids and glycerin.

This differentiation can be easily demonstrated by pushing out the agar columns from the glass tubes and dipping them—the starch ones—into a weak iodine solution, and the olive oil ones into a weak phenolphthalein alkaline water solution. The unboiled specimens will show that the starch agar



ABRAHAM'S ELECTRIC THERMOSTAT.

A represents a vessel filled with water containing a heating coil, B, and a Fahrenheit thermometer, C, having one platinum wire fused in the glass stem at the 100 degree division, and another platinum wire fused in the bulb. The thermometer is in circuit with the dry batteries, D, and a 75 ohm telegraphic relay, F. The heating coil is in series with the incandescent light bulbs, G, and the relay, F. The switch, H, controls the main circuit, illustrated by the heavy lines, and the switch, I, the battery circuit, illustrated by the light lines. When the mercury in the thermometer rises to the 100° mark, it makes contact with the platinum wire fused in the stem and closes the battery circuit which operates the relay, F. This interrupts the main circuit and shuts off the current from the heating coil, B. As the bath of liquid cools, the mercury in the thermometer, C, falls until the contact is broken. This shuts off the battery current from the relay, and again allows the main circuit to be closed by the action of the spring, J, which actuates the armature of the relay.

column does not turn blue, provided amylopsin was present, and that the olive oil agar tubes do not assume the pinkish red color. They retain the discoloration, while the boiled specimen stains in these solutions.

Method of Procedure.—Take one each of the starch, oil, and hemoglobin tubes, scrape off the paraffin at one end, tie them together with a piece of cord and put them vertically into a bottle containing the duodenal secretion. The latter is usually slightly alkaline, if not it should be made so by adding a few drops of sodium hydrate solution. Add a few drops of toluol and keep the bottle at

*I am indebted to Mr. Herbert Abraham, chemist of the Standard Paint Co., for suggesting the use of hemoglobin for the above purpose, and to Mr. John Seitz of Elmer & Amend for making the agar tubes for me.

blood temperature and corked for sixteen to twenty-two hours. It is best to make also the same test with boiled duodenal contents, in such a way that a comparison between the two specimens could be undertaken. The examination is made in the following way: the agar tubes are taken out from the bottle, wiped off, and inspected. The amount of discoloration in each tube is noted. The starch and oil tubes are further examined by pushing out the agar columns from the glass and dipping the one (starch) into a weak iodine solution and the other (olive oil) into a weak alkaline phenolphthalein solution. The portions remaining colorless indicate the amount of the ferments.

As a thermostat I use an electric automatic apparatus devised by Mr. Herbert Abraham.* The accompanying diagram shows the details of the electrical thermostat which is used for maintaining the water bath at a constant temperature of 100° F.

The above electrical thermostat of Abraham does not occupy too much space and is easily handled. It is particularly useful to practitioners who have no complete laboratory at their disposal.

The steapsin test with the olive oil phenolphthalein tube has the drawback that the juice must be made alakaline, for otherwise the same reaction will take place without steapsin. I have, therefore, been looking for another method which would bring on a color change due to the splitting of fatty acids and not be affected by other acids. Chlorophyl olive oil did not materialize, nor did Sudan red (III) olive oil agar tubes act in the desired manner. I have to investigate this matter more thoroughly. The hemoglobin tubes work very well, but are not sensitive enough, and it would be desirable to arrange for some improvement here also. I tried recently to have the hemoglobin tubes in two per cent. agar instead of two and one-half, which seems to do better.

The method of testing the ferments with the agar tubes seems to me to be simple and worthy of recommendation, although some details will have to be worked out a little further.

20 East Sixty-third Street.

HISTORY OF THE LITHOTOMY OPERATION.

By MAX KAHN, M.A., M.D., Ph.D

NEW YORK.

DIRECTOR BETH ISRAEL HOSPITAL CHEMICAL LABORATORY

(From the Department of Biological Chemistry of Columbia University, College of Physicians and Surgeons.)

While the history of medicine has been fully written upon by various European authors, the antiquities of surgery have not been much dwelt upon. In ancient days, when it was considered plebeian on the part of a physician to perform surgical operations, there of necessity developed a special guild of craftsmen whose business it was to treat undignified diseases for which the learned doctors refused to prescribe. These empirics, the barber-surgeons and charlatans of yore, untrained in learned conversation, unacquainted with the writings of the philosophers, attained great skill in their practice. Empiricism is ever the beginning of true science. In the history of surgery there is no more interesting chapter than the story of these chirurgeons.

Especially undignified was it deemed to perform lithotomy. Cutters for the stone were considered as altogether below the notice of the worthy doctors. Rated on a level with the undertakers and embalmers, they pursued their unhonored profession, and, though lacking in dignity and lucre, they perfected their art and did much to alleviate human suffering. The history of medicine in particular, like the history of humanity in general, is but the story of pain and suffering. There is no more painful disease than kidney or bladder stone, and it is no wonder, then, that in all nations we find mention of methods, old and new, for the improvement of stone cutting.

A surgeon was usually a lithotomist. When the ancients praised a surgeon they indirectly contributed toward the fame of the cutter for the stone. In the Persian *Vandidad*, or Book of Law, there is great praise for a certain physician who was also a surgeon: "Thrita was the first man of the race of Paradhata, helpful, discerning, powerful, rich, intellectual, to combat sickness and death. Ahura-Mazda, in answer to his prayer, caused countless healing herbs to grow, and gave him a metal operating knife."

In an old Hindoo papyrus we find particular directions how to perform lithotomy. They used the lateral section: "The hand being put on the abdomen and the stone being shoved down, the physician introduces the index and middle fingers of the left hand, the nails being cut, into the rectum of the patient, until he feels the stone. He then brings it between the anus and the urethra and presses on it till it stands out like a knot. Then follows the incision with the knife on the left side, the breadth of a grain of wheat from the raphe; under certain circumstances also on the right side, according to the size of the stone."

The Chinese with their more than Oriental imaginative powers, treated urinary diseases with horrible concoctions. They had peculiar ideas of therapeutics. "The red blossom of the hibiscus is employed as an emmenagogue; saffron, on account of its yellow color, in jaundice; and beans, for their shape, in kidney disease." The instruments that they used were so crude and their manipulations so lacking in dexterity, that they did not make much progress in practical medicine.

It is interesting to note that the Aztecs, whose civilization seems to have had no connection with that of the Asiatic or European nations, developed a medical science which peculiarly resembled the practitioners' art in Egypt and in Persia. Though they practiced theurgy more than they did surgery or pharmacology, still they made remarkable strides in the use of surgical instruments. Lacking iron, they fashioned their knives from obsidian. They opened abscesses by the crucial incision, and they scarified edematous swellings. They also used clean horse and human hair for suturing.

The Bible gives explicit directions for dietetics, forbidding some meats and recommending others, always strongly urging cleanliness. Circumcision is especially ordained, and, undoubtedly, the ancient Hebrew empirics practised lithotomy and were as successful as the average cutter for the stone. The great advances made by the Hebrew physicians were in the Middle Ages, and in the Talmud there are many directions that a modern surgeon would do well to follow.

In the Odyssey, Homer praises the physician ex-

*Herbert Abraham: "Improved Instruments for the Physical Testing of Bituminous Materials," Proceedings of the American Society for Testing Materials, Philadelphia, Pa., vol. xi, 1911, pp. 678-9.

ceedingly. "A physician outweighs many other men (in value)."

ἰατρὸς γὰρ ἀνὴρ πολλῶν ἀντάξιος ἄλλων

The Homeric physician, like the Homeric magistrate, daily made his rounds and prescribed on the market place for the patients who came to see him. Wealthier patients were treated in their own homes or in the homes of the physicians (ἰατρικὰ ἐργαστήρια). These houses were well fitted up for instruction and contained all the necessary appliances wherewith to perform operations. The rooms were well lighted and the students were allowed to try their hands on minor operations, especially on the poor, non-paying patients.

Hippocrates, the ancient apostle and teacher of ethical and scientific practice, gives many concise directions in his Corpus Hippocraticum and makes special mention of lithotomy. In his famous oath which every physician swore to with reverence and fear, appears this clause: "I swear by the gods to cut no one for the stone, but to leave this operation to those whose profession it is." This clause was inserted not that the physician was unable to perform the operation, but that it was beneath his dignity to soil his fingers with immodest manipulations. Quacks and empirics were indeed grateful for this delicacy on the part of the doctors.

The Pythagorean school, which preceded Hippocrates, neglected most of the surgical operations and employed for their remedies cure-alls composed of fanciful combinations, whose ingredients were frequently odious to the taste and imagination. These physicians recommended salves and poultices, and especially were they skilled in theurgical usages. Their expiations and spells and magical incantations were a lore in themselves. They believed in theory. "Theory is the flower, not the root of experience."

One of the aphorisms of Hippocrates would suggest the helpless condition in which the physician found himself in the face of illness: "Do good, or at least do no harm!" They considered it a sign of lack of surgical dexterity if one should fail to pass a catheter into the bladder, and if the presence of a stone in the bladder was not recognized. Nephrolithiasis and vesical calculi were observed to be common diseases. Many theories were advanced by the followers of Hippocrates as to the etiological factor in this disease. A theory that is worthy of note is the supposition that prevailed, that lithiasis was due to some impurities in the drinking water, as lime or sand, and that these were collected in the kidney and bladder and there formed stony concretions.

Though surgery was practised by most physicians, the operations of lithotomy and castration during the age of Hippocrates were relegated to the untutored empiric. The latter performed these operations while the physician and the priest stood by, the one recommending suitable ointments for the wound, while the other prayed to the gods to send a speedy cure. Abscesses in the neighborhood of the kidney, also possibly due to stone, were treated by nephrotomy as soon as edematous swelling became visible.

After Hippocrates, the great progress made in medicine was in Alexandria. There, under the learning-loving Ptolemies, the doctors found good patronage and could, therefore, pursue their studies of herbs and anatomy. Herophilus of Chalcedon, pupil of Praxagoras and Chrysippos (300 B. C.) was famous for his great knowledge of medicine and for his surgical skill. It was he who discovered the torcular Herophili in the cranium. He was a brilliant anatomist and he made much progress in anatomical terminology. He treated retention of urine by a particular kind of a catheter which long afterward bore his name. Eudemos and Manteas were two other great surgeons of that era. But the Alexandrian school made more progress in theorizing than they did in practice, and this disgruntled the practically inclined, who, as Celsus says, were more interested in the treatment than in diagnosis and prognosis. A few of their tenets are very illuminative of their beliefs:

"The husbandman and the navigator are not trained by disputations but by practice."

"Diseases are not cured by talk, but by drugs."

"The important question is not what causes disease, but what dispels it."

Heraclides of Taras was a pupil of Manteas, but he sided more with the men who were striving to obtain practical rather than theoretical knowledge. Learned as he was in pharmacology, he was also noted for his surgical abilities. He made great progress in the treatment of fractures and dislocations, and he was especially famous for his herniotomy operations. He did not consider it below his dignity to cut for the stone, and indeed he improved the operation of lithotomy.

As a lithotomist, Ammonios had no equal among the ancients, and patients flocked to him from foreign lands. He not only was proficient in doing the perineal section, but he invented an instrument whereby stones that could not be extracted through a small incision might be crushed and washed out. He is perhaps the first famous surgeon who had recourse to lithotrity, or crushing of the stone, and for his great skill and dexterity he was called λιθότομος.

It seems that lithotomy was destined to play its share in a political intrigue of that time. The story extant does not at all reflect credit upon the surgeons of that epoch. In order to get rid of Antiochus, the ten-year-old son of Alexander, King of Syria, Diodotus, his guardian, hired certain surgeons to kill him. Under the pretence that the child was suffering from stone in the bladder, they performed lithotomy on him, and so managed it that he did not survive the operation.

With the decline of Greece and the development of the Roman power there was a continuous migration of Hellenic physicians to the city on the Tiber. The boorish Romans, untutored in the fine arts, could not appreciate the cultured Greeks. Cato, the great philosopher, would not permit a Greek physician in his household and indeed he wrote several epistles against allowing the Greeks to practise in Rome. It is true that on many occasions the foreign physician, driven to it by poverty, aided certain wealthy patricians in their debauches and in their plots for poisoning their enemies. It is instructive to note the fate that befel Archagathos, a Greek immigrant in Rome. At first he was greatly honored and his skill and dexterity were so much praised that the Senate of Rome conferred on him the thanks of the city. But once in his large and lucrative practice he lost a patient, who died following an operation. The fickle mob forgot his great abilities, and in their rancor drove him from the city, confiscating his property (219 B. C.).

The greatest empiricist was Themison. His pupil, Thessalos of Tralles, son of a weaver, and

contemporary of Nero, was the greatest quack of his day. He very much restricted surgical interference in case of disease. He believed in practising on the minds of his patients and, indeed, his prescriptions contained many harrowing ingredients. He was the greatest exponent of what is now known as the Methodist School of Medicine. Another follower of Themison was Meges of Sidon (20 B. C.), who invented several new instruments for facilitating the lithotomy operation.

A. Cornelius Celsus (25 A. D.) was one of the greatest encyclopedists of ancient Rome. He so logically and clearly reviewed the history of medicine up to his time, that we owe to him much of the knowledge that we possess of ancient medicine. In his book "De Medicina Libri Octo," we have a complete résumé of the history of medicine previous to him and during his time. It is written in elegant Latin and its diction rivals Tacitus' history. Books 5 to 8 are devoted entirely to the art of the surgeon. In book 4, chapter 10, we find this oft quoted statement: "Notae vero inflammationes sunt quattuor, rubor et tumor, cum calore et dolore." He gives an excellent account of the lithotomy operation, describing fully the indications and contraindications for that procedure. He also describes an operation for subcutaneous urethrotomy on patients who have their urethra blocked by a calculus.

The Pneumatist School, founded in the first century A. D. by Athenaios of Atteleia, contended that all phenomena were dependent on the vital air. They studiously investigated the causation of disease and divided the etiological factors into extrinsic causes, intrinsic causes and the causes due to evil spirits. Stone in the bladder, they considered as evidence of some internal disturbance of the body (αἴτια συνέκτικα) instead of its being due to some extrinsic substance ingested in drinking water.

Archigenes and Heliodorus were two famous surgeons of that time. The latter has made notable contributions to the knowledge of hypospadias and stricture. Leonidas of Alexandria improved many operations and was especially noted for his skill in cutting for hemorrhoids. A special volume on bladder stone disease was written by Aretaios of Cappadocia in the latter half of the first century after Christ. He described in detail the technique of the operation, and gave good advice as to symptoms and prognosis.

In the second century A. D., Rhuphos of Ephesus wrote a learned work on urogenital disease. In the treatment of inflammation of the urinary bladder, he forbade the use of the catheter, and he especially enjoined care in avoiding irritation of the diseased mucosa. He also described vesical hemorrhage and cystic paralysis. In his diagnosis of vesical calculus, he gave explicit directions for a bimanual examination for the recognition of the presence of a stone in the bladder. He prescribed for all the urinary affections, and detailed the lithotomy operation.

Galen, the greatest successor to Hippocrates in ancient times, makes the statement which is quite current even now, that renal calculi are of the same origin as the gouty deposits in the joints of patients suffering from podagra. In one of his books he states that vesical calculi occur chiefly in boys. In the treatment of stone disease he prescribed cures identical with those for gout. Ass's milk, and wine mixed with honey were thought to be especially efficacious. Of drugs, he used diuretics like myrrh, parsley, caraway, ammoniacum, and the powder found in sponges. In the chapter on treatment he described catheters and a calculus forceps whereby stones could be extracted through the incision, or else crushed before delivery.

Perhaps the greatest surgeon of antiquity was Antyllos. He stated careful directions for performing lithotomy. He gave details concerning the indications and contraindications for that operation.

In Rome specialization was carried to the highest point. A doctor would not for a moment entertain the idea of performing any manual labor on his patient. Galen, speaking of Roman practice, says: "Since I lived in Rome I had to make many concessions to the customs of the capital and leave most of these things (surgical procedures) to the so-called surgeons, eye doctors, aurists, hernia specialists (lithotomists), etc."

Quintus Seremus Samonicus (211 A. D.) recommended goat's urine to be drunk in vesical calculus. He also reviewed the treatment, both palliative and operative, of all urinary diseases. Perhaps the first man to write an extensive monograph on renal stones was Philagrios of Epirus, who practised in the first century A. D., in Thessalonica. Only a few isolated fragments of his work remain, but these are enough to show that he was learned in his craft. He discussed minutely the causation, diagnosis, and treatment of renal and cystic lithiasis.

Caelius Aurelianus was a medical encyclopedist who lived in the fifth century. His masterpiece is a compendium of the whole knowledge of medicine entitled, "De Morbis Acutis et Chronicis." In the chapter devoted to the discussion of the diseases of the genitourinary system, he dilated upon the symptoms and diagnosis of bladder stone. Among the diagnostic signs he described the characteristic attack of renal colic. He stated that the pain radiates to the pubes, navel, perineum and scrotum. The diagnosis was to be effected not only by subjective symptoms, but also by a sound, which was to be introduced into the bladder and with which the stone was to be felt.

In the Talmud we find many references to hygienic laws, and also directions for performing surgical operations. Many operations are roughly described, but circumcision is especially detailed. The surgeon was to wear a leather apron and was to keep himself very cleanly. They knew that the less a wound was manipulated, the surer was the cure. One of their recommendations was not to touch open injuries, for "the hand causes inflammation." Among the surgical instruments mentioned are large and small knife, trephine, lancet, and a device known as the *Nail* for blood letting. The treatment of vesical stone is quite curious, and among the various procedures we notice the following: "Catch a louse from a man and another from a woman; fix the one upon the breast of the woman and the other upon the male organ of the man; then let them urinate upon a blackberry bush while somebody watches whether the stone escapes."

In the sixth century there lived Aetios, who wrote the famous work called "Tetrabiblon." He spoke in an erudite manner on the history of surgery. He mentioned Philargios as the originator of the method for the removal of impacted stones by urethrotomy. In chapter 24, he described a case of vesical mole (the first case reported). The perineal route for the removal of cystic calculi was carefully described, and many important admonitions

were given to the practitioner. He suggested that the knife used for the lithotomy operation should be protected by a tube. He also described cutting for the stone in women.

Alexander of Tralles (525 A. D.) wrote an excellent treatise on the differential diagnosis of renal calculi. He especially laid stress on the differentiating signs from intestinal colic. Pain in renal colic (he asserted) is more severe and more circumscribed and is chiefly felt in the loins. Examination of the urine reveals a gravel-like sandy deposit. Another point in the differentiation is the fact that cathartics will relieve an attack of intestinal colic, but will have no effect on the crisis of kidney stone.

Paulos of Aegina, who lived in the seventh century A. D., wrote voluminously on medicine. He was the first to advance the theory that gout is a disease of metabolism. According to his view, "as a result of insufficient assimilative powers of the various parts of the body, there is formed from the superfluous food, together with indolent habits of life, a morbid humor, which is first attracted by a weakened joint, but may also lodge itself in the liver, spleen, kidneys, etc." In the chapter on urinary diseases, he gives interesting descriptions of catheterization and lithotomy.

With the decay of Byzantine civilization, there was a general cessation in the progress of all science. The superficial gloss that replaced true culture evinced itself in the shallow writings of that time. The intolerance of the church and the idea that whatever was old was excellent, and that nothing modern could be of value, stagnated human endeavor. Instead of expressing their own ideas, they modified and rewrote the thoughts of the ancients. There was a dearth of talent, and the ingenuity of those who were exceptionally brilliant was wasted on purposeless tasks.

Theophilos, with the characteristic empty verbosity of the schoolmen, wrote a treatise on the examination of the pulse and on uroscopy. Another author, Jeannes Actuarius, who lived in the thirteenth and fourteenth centuries, also wrote voluminously on the examination of the urine and on sphygmology. In his monograph "On the Urine," many kinds of sediments are named according to their colors and consistencies, and graduated glasses for the measurement of the depth of these deposits are recommended.

During the Middle Ages, the Arabs functionated as the archives wherein the knowledge of the ancient Greeks and Romans was preserved. They retained in original and in translation the philosophy of Plato, the learning of Aristotle, and the knowledge of Hippocrates. The greatest physicians and surgeons of the medieval period were Arabs and Jews. The Christian potentates had Hebrew court physicians and, though they persecuted his brethren, they were careful in protecting their doctor.

The Arabian Hippocrates is Rhazes, who lived in the ninth century. He was a conservative who believed more in the usage of simples than in the radical treatment of disease. "When thou canst cure by diet use no drugs, and where simple measures suffice, use no complex ones." was one of his aphorisms. His work is entitled "*Al Hawi*," or the Contents of Medicine. Rhazes considered retention of the urine to be due either to stone or to cystic paralysis. He taught that if medicines are unavailing in this disease, recourse must be had to the catheter.

Avicenna, another great Arabian physician (980 A. D.), described lithotomy fully. Abul Kassim and Avenzoar were noted surgeons of that epoch. The latter considered it below his station to perform surgical operations. In his young student days Avenzoar had acquired very valuable practical experience, and though he did not undertake any operative procedures when he was already famous, still his acquaintance with surgical technique caused him to be much sought after by all classes of patients. Lithotomy alone he would have nothing to do with, because of the indecency and the immodesty. Abul Kassim thus gives the directions for the removal of a bladder stone in a woman: "The finger should be introduced into the rectum of virgins, into the vagina of married women; then an incision should be made, in virgins to the left and below into the labium, in married women between the urethra and os pubes, so that in both cases the wound is oblique."

Moses ben Maimon, known as Rambam, the greatest Jewish physician and philosopher, might well be considered here, since he practised among the Arabs. His book of Aphorisms was studied in all the universities. Though he usually agreed with Galen, he pointed out wherein the Pergamite erred. He commented upon the operation for circumcision, but he did not consider lithotomy of enough dignity to be written about.

Due to the fact that the Arabian doctors would not treat gynecological diseases if they had to expose the genitalia of their patients, there developed a caste of women surgeons, whose function it was to aid the female patients in those diseases to which the physician refused to attend. These female practitioners attended the women in their confinements and gave them the necessary clysters and injections when the case required them. Some of them became very proficient and were able to perform lithotomies and embryotomies.

Among the Teutonic nations there developed a variety of surgery similar to that of the ancient Hindoos. Skulls have been found of very ancient Vikings who have had their cranium trephined and have survived the operation. Payne in his book on Anglo-Saxon Medicine details many operations then current for setting of fractures, reducing of dislocations, treatment of open injuries, and methods of amputation of gangrenous extremities. The Druid priests and priestesses performed lithotomy, using very rough instruments and drugging the patient before the operation. In the last century it was yet common among the members of a certain tribe of Australian aborigines called "Kalkadoona," to cut the urethra with a flint knife, and in case this instrument was not handy, to use a sharp mussel shell.

In the fourteenth century there were current in England peculiar prescriptions for all diseases, and we find the following advised as an excellent lithotryptic:

"For to breke the stone that ys in a man—Take a quike hare in marche and sle hym and tak all the bloud and put the hare in the bloud, guttys, scyn, heyde, and feyte, and a lytel milk and put al these into a pot so that the pot be ful, and take elysaudre route and the sed of Saxfragie and the route of filipendula and the route of tyrmentylle and the curnellys (kernels) of chyrrystones and gromel sed and the pise (?) that is in a maive, and of dawe bred, take al these and put hym in water or in ale at nygt and gyf hyt the man that haf the stone and

he shall keuery (recover)." Those patients suffering from gravel disease were advised to drink the following:

"Who-so hath the stone—Take gromeyle sed and parsile and the ryde netyle (Red Nettle) and violet and rechelus and cyrnellys of chirestones and stamp hym and tempre hym wyth ale and drink hyt."

There were current in those days many vulgar ideas and remedies about the stone disease. In 1575, Gascoigne, in his "New Art of Venery," remarked that "*his pyssel serves to scour the gravel of the stone.*" Another author hinted that "*Ale made with hoppes is unwholesome for the stone.*" From Lean's Collectanea, I have gleaned several French admonitions regarding nephrolithiasis:

"Contre ceux qui conseillent et ordonnent l'acte vénérien contre la gravelle, pierre et autres maux de reins." And again,

"S'il y a raison de dire qu'il ne faut verser de l'eau en la chambre de celui qu'on a taillé pour la pierre."

"D chausser toujours première la jambe que respond au costé de la douleur pour guérir de la nephritique."

Gilbert of England, called "Laurea Anglicana," was famous for his prescriptions. He used to treat bladder stone by giving the patient to drink the blood of a he-goat which had eaten diuretic plants.

In the Middle Ages, with the advent of the power of the church, learning was fostered only in the monasteries and abbeys, and the monks, besides shriving the soul, took upon themselves the duties of doctors. Certain monasteries in Italy became famous for the medical and surgical skill of the monks. In the Abbey of Monte Cassino, near Naples, many remarkable cures were performed. It is related that Saint Benedict himself, removed a bladder stone from King Henry II of Bavaria (983 A. D.) while the monarch was asleep; and not only that, but he cured the wound during the night. Another instance of the perpetration of a remarkable pious fraud!

Until some time in the middle of the fourteenth century, the priests cared for the bodies of their flock as well as for the spirit. But they made no progress in the surgical arts, and only followed the ancient directions of the pagan doctors. In certain cities there developed trained guilds of lay surgeons, and in some towns in Germany, these were hired by the community to treat the indigent. In various cities herniotomists were appointed to operate on all patients suffering from rupture. Later on the German towns even regulated the fee that a lithotomist was to receive. Thus in certain communities he was granted a license with the strict enjoinder that for each lithotomy operation he receive fifty-one marks, if the patient recover, and half that sum if he die.

The doctors, that is the college graduates who spoke only Greek and Latin of Hippocrates and Galen, were not supposed to touch their hands to the knife. In the city of Uberlingen, there is on the records a tragic-comic episode that befel a certain Doctor Val. Butzlin. The latter had engaged Master Conrad Angelberger, a professional herniotomist, to operate on the scrotal hernia of his son. The surgeon seems to have utterly failed in the operation and the burghers smiled at the plight of Dr. Butzlin. The case is thus reported in the quaint German of that time: "Doch hat er, wiewol er siner kunst ein bewerter und erfarner maister sonst gewesen, dazumal so grob gefelt, dasz er dem guten jungen den gesunden stain geschnitten, den schadenhaften hat er ime gelasen. Also ist er umb das klainet vergebenlich und one alle not kommen."

John Arden is perhaps the first surgeon worthy of that name in England. He lived in the fourteenth century and was a native of the town of Newark. Inventor of many admirable instruments, he greatly improved the surgical technique of his time. He was famous for his success in the treatment of fistula-in-ano, and for his cutting for the stone. He was the author of several treatises which are preserved intact in the British Museum.

The most famous schools of medicine during the dark ages were in Italy. The University of Salerno was celebrated for the very great men that graduated her classes. Ruggiero of Palermo (1210 A.D.) was the most noted of the Italian surgeons. He was the first to describe hernia pulmonalis. He was respected for the skill with which he performed the most dangerous operations. He frequently practised stitching the intestines and he was the first medical writer to use the term "seton." Among the operations he described were resection of the lower jaw and central lithotomy. His works are incorporated with the writings of Roland of Parma, a student of his. In the fourth book of their work entitled "Glossulæ Quattuor Magistrorum Super Chirurgiam Rogerii et Rolandi," there is a complete description of symptoms and treatment of vesical calculus.

Another famous Italian anatomist and surgeon was Mondino dei Luzzi, also known as Raimondino, who was born *circa* 1276. In his lectures he stated that renal stones, if small, pass through the ureter; if large, they are incurable except by operation, and *that* is to be avoided. The operation for performing lithotomy was thus described: "The patient being in the proper position, the stone is conducted to the neck of the bladder by the finger in the rectum; and incision is made, and the stone is pulled out with an instrument, called the *trajectorium*."

Among the Italian physicians was the far famed woman doctor, author of "De Mulierum Passionibus," who lived in the middle of the eleventh century. Dramberg and Henderson doubt very much whether this individual, who bore the name Trotula or Eros Julia was a woman. In her book "Erotis Medici, Liberti Juliæ, quem Aliqui Trotulam Inepte Nominant, Muliebrum Liber," mention is made of herniotomy and lithotomy.

In the fourteenth and fifteenth centuries there was no marked progress in surgery in general, or in lithotomy in particular. When a certain new discovery was made in surgical technique, it was kept secret that only the descendants of the inventor might profit by it. This would put one in mind of the Chamberlen family who had in their possession the secret of the delivery forceps, and only made it public when Roger van Roonhuysen of Amsterdam bought it of them for a certain sum of money. A similar case occurred in the sixteenth century. Lawrence Colot, a contemporary of Ambroise Paré, improved the lithotomy operation. He used the staff and the other instruments of the "apparatus major," but he kept these improvements secret and his descendants derived much profit from this monopoly.

In the sixteenth century a radical step was made in the treatment of vesical stone. Pierre Franco was a noted French surgeon. He was born in Eurriers near Sisterom in Provence. He practised in

Freibourg, Berne and Lausanne, and enjoyed a national reputation. In 1556 he published his description of the suprapubic method for the removal of cystic concretions, in a treatise entitled, "Traite contenant une des parties principales de la chirurgie, laquelle les chirurgiens herniares exercent." An Italian surgeon of the same century, Antonio Benivieni (1502) of Florence, was noted for his peculiar method of removing vesical calculi in women by dilatation of the urethra.

In England, James Douglas (1675-1742), an excellent anatomist and one of the most brilliant surgeons of his time, was the first to demonstrate the high operation for stone. He published "The History of Lateral Incision for Lithotomy." Another surgeon, William Cheselden (1688-1752), also an Englishman, was a famous lithotomist and ophthalmologist. He reported unfavorable results with the Franco operation and he, therefore, modified a lateral lithotomy operation of a contemporary of his, Raw. His reputation was very great and his skill was so admired that there are many legends connected with his name. He is reputed to have performed the operation of cutting for the stone in fifty-four seconds. His mortality figure was very low. He lost six out of eighty patients upon whom he had performed the perineal section. John Yelloly remarks of him: "Cheselden is generally considered as having lost only one patient in ten and a half in his hospital lithotomy practice, but the summary referred to, of twenty deaths in 213 cases, applied only to the success of his improved lateral operation. His great success was with children."

Frère Jacques was a Franciscan monk. In his youth he worked as a day laborer; he never had any schooling. Though he had no knowledge of anatomy nor for that matter any cognizance of any medical science, he was one of the most famous lithotomists of his time. He invented the lateral method of cutting for the stone, and he is said to have done five thousand lithotomies. Le Cat (1700-1768) was another Parisian of that time who was a noted lithotomist. He is also famous as an opponent of the doctrines of Haller.

In 1753 Hawkins invented a cutting gorget for lithotomy. Benjamin Bell in a "System of Surgery" (1783) described in detail all operations in vogue at that time for the treatment of renal and cystic calculi, recommending especially the lateral lithotomy section of Frère Jacques and reporting very sinister results with the suprapubic incision of Franco. Towards the latter part of the eighteenth century, an episode occurred which is quite worthy of mentioning. A certain Mrs. Stevens of London was reputed to cure bladder stones with the aid of various remedies. Only the wealthy could afford to pay the extravagant fee that she demanded, and there arose, therefore, a clamor from the poor classes demanding that Parliament buy the secret from the woman. Accordingly the House of Commons passed a bill that the secret be purchased for the sum of five thousand pounds. Their surprise was great, however, when they learned that the terrible remedy was simply milk of time!

About this time there was a tendency to crush the stone rather than submit the patient to a cutting operation. Ammonios of yore was the first to do lithotrity, but he did it only to facilitate delivery of the calculus through a small incision in the perineum. Frère Jacques suggested that crushing be always resorted to, but this advice did not gain much ground. In 1819, Gunthuisen of Munich, and in 1824, Civiale of Paris, wrote fully on the method of lithotrity and reported very brilliant results with this procedure. Jean Civiale was born in 1722 in Threzac. His works on bladder diseases are entitled: "Nouvelles considerations sur le retention d'urine" (Paris, 1823), and "De la lithotritie" (1826).

In the nineteenth century, with the advent of asepsis and antisepsis, the lithotomy operation has been gradually improved. The greatest progress made in this respect was by American surgeons. Alexander Eddy Hosack of New York, who was the first practitioner in this city to administer ether anesthesia, wrote a paper entitled, "Twenty-three Cases of Lithotomy by a Peculiar Operation, All Successful." In it he states that following a German idea, he operated without dividing the prostate gland, and in all cases were his efforts rewarded with complete success, so that not only did he have no mortality but all his patients retained their powers of procreation (an unhoped-for result in his day).

In 1876, Dr. Henry Bigelow of Boston, one of the most famous American surgeons of his time, described a method whereby the mortality rate was reduced to three per cent. This procedure he termed lithopraxy or rapid lithotrity.

Nephrolithotomy was first performed in 1882 by Henry Morris for the removal of a stone from a healthy kidney.

Amongst other noted American lithotomists, several should be mentioned. William Baynham (1749-1814), a native of Carolina, was a famous operator for vesical stones. He gained William Hunter's praise for his method of injecting anatomical specimens. Benjamin W. Dudley (1785-1870) was a pupil of Sir Astley Cooper. He it was who founded the medical school of the University of Transylvania in Lexington, Kentucky. He was fond of using the blunt gorget in his lithotomy operations. Though he used the lateral method, he had no death in a series of one hundred lithotomies. Dr. Eve of Nashville, Tennessee, was also a noted cutter for the stone.

There are several famous men in literature and in medicine, who have suffered from renal or bladder stone. In England, the land which is noted for its hearty drinking, gout and gravel have claimed many a victim. The redoubtable Sir John Falstaff was very much in doubt whether the pain in his great toe was due to syphilis or gout. He self-consolingly remarks: "A pox of this gout! or a gout of this pox! for the one or the other plays the rogue with my great toe. It is no matter if I do halt. I have the war for my colours, and my pension shall seem more reasonable. A good wit will make use of anything, I shall turn diseases to commodity."

It is not surprising, therefore, that the corpulent knight should send his water to be examined by a doctor:

Falstaff: Sirrah, you giant, what says the doctor to my water?

Page: He said, sir, the water itself was a good healthy water but for the party that owned it, he might have more diseases than he knew for.

[Henry IV—part 2—i—2.]

In another part of Shakespeare we find special mention of "loads o' gravel i' the back" and "bladders full of imposthumes" as complications of syphilis.

English physicians were many times themselves

sufferers of podagra and stone. Sydenham was afflicted with both of these diseases, and he thus described his method of treatment:

"In the morning, when I rise, I drink a dish or two of tea, and then ride in my coach till noon; when I return home, I moderately refresh myself with any sort of meat, of easy digestion, that I like (for moderation is necessary above all things), I drink somewhat more than a quarter of a pint of canary wine, immediately after dinner, every day, to promote digestion of the food in my stomach, and to drive the gout from my bowels. When I have dined, I betake myself to my coach again and when business will permit, I ride into the country, two or three miles for good air. A draught of small beer is to me instead of a supper, and I take another draught when I am in bed, and about to compose myself to sleep."

He suffered from gout from the age of twenty-five, and at the age of thirty-six he began to have gravel. His agonies were extreme and he longed for death. Speaking of a patient who is afflicted with these illnesses, he says: "He suffers until at last he is worn out by the joint attack of age and of disease, and the miserable wretch is so happy as to die."

Another physician, the great Italian pathologist and anatomist, Jean Baptiste Morgagni, was a sufferer of nephrolithiasis. His remedy was to take half a drachm of the carbonate of potash night and morning, gradually increasing the dose till he took three drachms during the day "The acid of the urine became saturated, the pains in his loins diminished, his urine became less loaded and potash was at length found in that fluid in excess."

Michel Eyquem de Montaigne, the greatest French essayist, was a firm disbeliever in all things medical. Emerson has called him "Montaigne the Skeptic," and we needs must believe that he was very skeptical when it came to dealings with doctors. He suffered from painful colics all his life, and, in order to cure himself, he traveled to all the famous mineral springs in order to drink of their healing waters. He seldom consulted a physician, and if he did, it was only to listen to his advice and follow out those instructions which *he* considered logical. "My aversion to medicine," wrote Montaigne, "is hereditary, like my disease. My ancestors detested medicine by some occult and natural inclination." When his best friend died, he blamed the physicians for his calamity. "The doctors," he says, "do not know anything about the police of this little world. Because they would not stop a dysentery for fear of bringing on fever, they killed me a friend who was worth more than them all put together." He especially feared the lithotomy operation, and he forbade anybody to operate upon him even in the direst necessity.

Among other victims of "this sharp and craggy stone that cruelly pricks and tears," we may mention Bacon, Boerhaave, Newton, Harvey, Fothergill, and Scarpa. Benjamin Franklin, though he suffered much from podagra as his interesting dialogues with "Madame Gout" would testify, did not seem to have been a victim of gravel. Soldiers, though they were fearless on the battlefield, rolled with agony when that leveler of all human ranks, pain, gripped their very vitals. Napoleon Bonaparte, Peter the Great, Louis XIV, George IV, Cromwell, and doubtlessly other warriors and rulers yielded ingloriously to this fell disease. Even the statesman, Horace Walpole, found his fluent tongue and brilliant oratory unavailing during the periodic attacks of the passing of the stone.

REFERENCES.

1. Neuberger: "History of Medicine."
2. Baas, J. H.: "Grundriss der Geschichte der Medicin," 1889.
3. Issensee, E.: "Geschichte der Medicin," 1840-1845.
4. Encyclopedia Brittanica, under article on Surgery.
5. Berdoe, Edward: "The Origin and the Growth of the Healing Art," 1893.
6. New International Encyclopedia.
7. Payne, J. F.: "English Medicine in Anglo-Saxon Times," 1904.
8. Henslow, George: "Medical Works of the Fourteenth Century," 1899.
9. Baas, Karl: "Zur Geschichte der mittelalterlichen Heilkunst im Bodenseegebiet," in *Archiv für Kultur Geschichte*, iv, 137 (1906).
10. "Nouvelle Biographie Générale," 1857.
11. Henderson: "The School of Salerno."
12. Daremberg, Ch.: "Histoire des Sciences Médicales," 1870.
13. Edgar, J. C.: "Practice of Obstetrics," 1907.
14. Yelloly, John: "Renal Calculus," in Transactions of the Philosophical Society of England, cxxix, 1830.
15. Francis, Samuel W.: "New York Physicians," 1886.
16. Furst, L.: "Geschichte der judischen Aerzte in Italien," 1861.
17. Collins, W. Lucas: "Montaigne," 1879.
18. St. John, Bayle: "Montaigne," 1864.
19. Picard, F.: "Sydenham sa vie—ses œuvres," 1889.
20. MacMichael, William: "Lives of British Physicians," 1830.
21. Keen: "System of Surgery."
22. Wood, F. C.: "Clinical Chemistry."
23. Osler: "System of Medicine."
24. Ball, J. M.: "Andreas Vesalius."
25. Lean, V. S.: "Collectanea," vol. ii, p. 513, 1903.

1056 Hoe Avenue.

SOME BLUNDERS MADE BY NATURE IN TREATING DISEASE.

By AUGUSTUS MAVERICK, M.D.,

SAN ANTONIO, TEXAS.

It was Voltaire who made the remark that "the physician amuses the patient while nature cures the disease." Unfortunately there has always been much that is true in this aphorism, but if the author of the "Age of Louis XIV" could return to-day with a gangrenous appendix or a plaque muquese he would have to confess that the physician is becoming as useful as he is amusing. As a matter of fact, the physician has always owed his livelihood to nature's inability to care for the sick. If nature was famed for its skill at relieving pain, draining abscesses and killing invading parasites, the physician would starve to death; but judging by the stream of newborn healers which pours from our colleges as fast as the printers can turn out the diplomas, nature leaves a large field for improvement. There is still a lot of talk of adhering strictly to natural methods in the treatment of disease, but those who talk the loudest must confess that in severe diseases where we "leave nature to take its course" the outlook for the patient is always the worst. To turn a very ill person over to nature is like sending a dying consumptive to Egypt. Compare the breathless victim of pneumonia or the stuporous typhoid patient, untouched by cold water, awaiting the verdict of the unknown, to the surgical case of gallstones or the prey of the anapholes well dosed with quinine. Is nature's treatment for pain, by causing the sufferer to faint from exhaustion, better than the physician's hypo of morphia, or is nature's effort to squeeze a kidney stone through sixteen inches of tubing, one-fourth its diameter, more preferable than ether,

antisepsis and the knife? It is common to hear a drug or system of treatment recommended because "it is nature's own remedy." Would it not be better to say that it is *our* own remedy and twice as good as anything nature has to offer? Would this be blasphemous to a system of government which puts us on earth to fight unceasingly for our life? It is the surgeon who to-day is leaving the least to nature and doing the most for his patient; it is the internist who lags behind in his treatment under the delusion that what is natural is best and is making nature his guide rather than the experimental laboratory worker.

Inflammation and Scar Tissue.—Not long ago an Eastern surgeon in suturing a wound of the intestines left the lumen too small and chronic intestinal obstruction resulted. The surgeon suffered severely in the hands of local gossips, for the most inexperienced holder of a medical diploma was expected to know how to sew a gut and still leave it open. Yet, this trick is performed every day by nature in healing dysenteric and syphilitic ulcers of the bowel; the wound is bound with scar tissue which shrinks with age and finally strangles the gut it came to heal. Scar tissue is nature's cureall for wounds. When a cut is made through the skin the edges are brought together by a delicate network of scar tissue threads and so neatly is the work done that in time only a seam is left to mark the once unsightly deformity. This scar at first is pink from a rich supply of capillary vessels, but as scar tissue grows older it is its nature to contract and squeeze shut the vessels which give it life; so that in time a white, tough, puckered scar remains. All this is of no great consequence on the skin, except for a possible distorted face or crippled hand, but it plays havoc within the body where the structures are more delicate. Take the heart valve which is left ulcerated by an attack of endocarditis; the inevitable scar tissue starts its patchwork and makes a neat job of covering over the denuded areas, but instead of leaving well enough alone it goes on contracting and in time a useless, puckered bunch of valve leaflets remains, the heart works in vain to overcome the backflow of blood and the days of the victim are numbered. Among numerous other examples of serious results from scar tissue may be mentioned strictures of the pyloris, rectum, and urethra; deformed joints; cirrhosis of the liver; Jacksonian epilepsy; chronic Bright's disease, and arteriosclerosis. Even with a strictured pylorus the victim manages to find some enjoyment in life, but this is not all that is sometimes in store for him; only too often the scar tissue sets up such an irritation of its own that cancer takes root as the result. That this is frequently the final stage in nature's long drawn-out effort to heal an ulcer of the stomach, a torn cervix uteri, or a scarred gall-bladder is unfortunately common knowledge. No quack ever handed his patient a worse deal than this. In old age the organs have become so riddled with this weedy substance, scar tissue, that life is squeezed from the body many years before the proper time. Suppose we had a scar tissue which, after it had performed its duty, stayed pink and soft and never shrank—what an ideal remedy this would be!

Acute inflammation is also a fair example of the crude way disease is often handled by nature. All the swelling, pain, and discomfort of an infected area is not due to the invading germ but to the natural remedy. Of course we should be grateful for any protection at all from foreign irritants, but we must confess that this process is frequently rather far fetched. Does not the swelling about the glottis, which cuts off the air from the little chap, the victim of croup, seem a rather drastic treatment for a slight irritation of the larynx, and is not this also true for the infant who cannot suckle because nature is treating a slight cold in the head, and again, the patient who is dyed a deep yellow because the bile ducts are swollen shut from a catarrh which otherwise would pass unnoticed? When inflammation goes on to suppuration and an abscess forms it is certainly time for us to interfere; left to itself the abscess may, after a long and torturing interval, dry up and leave adhesions tugging on neighboring structures, or it may, with agonizing pain to the patient, point and drive its deadly contents straight into the peritoneum or some other vital field. Who is there to-day with an abscess of the appendix who will place himself in nature's hands when a surgeon is nearby?

The tendency of different mineral salts from the body juices to collect about irritating foci is often applauded, and well so, for it is in this way that a tuberculous area is imprisoned. However, there are times when this process does more harm than good. Take a mass of typhoid bacilli which is proving a nuisance within the gall-bladder; nature turns loose an abundance of bile salts which deposit about groups of bacilli to form thick shells. Are the bacilli walled off and made harmless by this method? Yes, but there are left ten to a hundred or more gallstones which play the very devil with the unlucky owner.

Overdosing.—We have learned by experience that moderation in treating disease is as important as moderation in everything else, and that the most harmless remedies become poisons in overdoses. Nature often gives overdoses and thereby does more harm than good. Fever is a good example. Fever is now recognized as nature's attempt to make the blood too hot for the comfort of invading microbes. A moderate amount of fever evidently aids the patient, but when it becomes excessive the question arises: which is causing the most damage, the bacterial toxins or the heat? The headache, anorexia, malaise, rapid heart, hurried breathing, scanty kidney elimination, nervousness, delirium, stupor, cloudy swelling and the whole train of symptoms of the acute infections—how many are caused by the disease, the toxins, and how many by the natural remedy, the fever? The benefit derived from the use of plain cold water in typhoid fever will help to answer this question. Another example of a natural remedy carried to excess is the hypertrophied heart. When imperfect closure of the valves demands more work of the heart its muscular walls thicken to supply the extra power. If this method made up for the deficiency and kept step with an ever-increasing deficiency, well and good, but it does not. The heart goes on enlarging and pounding away far beyond the demand made upon it and the patient relieved of some little tendency to dropsy or shortness of breath now suffers more distressing symptoms. If this ability to increase in size were unlimited the natural treatment of heart disease might remain merely troublesome and not prove dangerous, but there comes a time when the growing muscle cannot receive enough blood to nourish it: it is the old cry of no food, no work, and the heart, unable to keep up the pace it has set, fails and fails rapid-

ly. Here is an example of how a little prudence on the part of nature could keep the heart active many years after it has ceased to beat, for it is not nature, but the physician who, with his drops of aconite, prolongs the patient's life, or, at a later date, with his digitalis, keeps beating the heart long since thrown aside by its maker. A high blood-pressure is commonly a bad natural therapeutic measure. In attempting to compensate for what the failing heart and kidneys refuse to do, the pressure in the vessels rises often above 200 mm. of mercury. Any minute such a man may drop unconscious from apoplexy unless the physician with his nitrites can undo some of the mischief by bringing the pressure down. A cough, as we know, is nature's method of blowing irritating matter from the bronchi. We can all recall instances of how this is frequently carried too far. There is, for example, no sense in making a child cough until it vomits or breaks a subconjunctival blood-vessel, for all the good it does in whooping cough. The congestion of the mucous membrane of the larynx and its injury by being brought into violent contact following a severe paroxysm of coughing, surely does more harm than good. The cough of phthisis is certainly an unwise prescription when it keeps the patient sleepless and nervous or encourages hemorrhage or the dissemination of infection. Diarrhea, which persists after the bowel is as clean as a gun barrel, the profuse nasal flow from a simple cold, the edema which closes the glottis, the bony callus which entangles the nerve—these are but few of the many other examples of how nature overdoses its patients.

Antibacterial Properties of the Blood.—Much is heard to-day of the wonderful natural properties of the blood to kill invading bacteria and neutralize their toxins and of our ability to aid nature in the use of these. When we add antitoxins or bactericidal products to the blood, we are merely imitating nature, not doing something better. Of course in adding, for example, diphtheria antitoxin to the blood in large quantities and thereby saving an urgent case of diphtheria, we are doing something which in the time allowed nature could never have accomplished, but, nevertheless, the method employed is purely nature's. Armed with antitoxins, antibacterial sera, and preventive vaccines, our task of fighting infectious diseases will be lightened for some time to come. It is not these, however, but chemical compounds like salvarsan, selenium with eosine and mercuric succinimide, purely the work of man, which will constitute the ultimate goal of therapeutics. Suppose the blood had naturally a *therapia sterilisans magna*, instead of all these million and one different antitoxins, opsonins, agglutinins, precipitins, bacteriolysins, and other unchristened agents—what a remedy this would be! One trouble about these antibodies is that they are too complicated and have to be manufactured by the body cells separately for each disease, and this the cells often cannot do; we can readily understand how the cells may find it difficult to manufacture the different complicated side chains to fit the corresponding links of each separate germ. Another fault is that being biological products manufactured by living cells and the bacteria which they attack also being living cells, the bacteria are able to make similar antibodies of their own. Thus we have the reciprocal antibodies, or so-called aggressins of the invading parasite being prepared to neutralize the antibodies of the blood; while in the case of a chemical compound the germ would be unable to manufacture an antidote so readily. The recognition of a hypersensativeness or an anaphylaxis which the body may develop for a substance, comes as a warning to the unreliability of some of nature's methods in this direction. How are we to know on administrating a remedy, especially a foreign blood serum, whether the patient can stand a double amount the next time or has developed such a hypersensativeness to it that another similar dose will kill him? We were led to believe that nature could develop enormous powers of resistance to any poison administered in increasing doses; what are we to think now of this dangerous reversion? How do we know now whether nature does not possibly at times make us hypersensative to the secretions of our own body cells and allow this rebellion of the tissues to cause all kinds of disagreeable idiopathic symptoms?

Where Compensation Fails.—We often admire the way in which one kidney does the work of two when the second is removed and how a small portion of lung will carry on the work of a widespread area destroyed by tuberculosis. This natural compensatory action, however, is by no means constant. In injuries to the eyeball we are familiar with the danger of sympathetic inflammation of the healthy eye. Sometimes, in fact, the ophthalmic surgeon can make of the injured eye a more useful one than the other, the victim of natural interference. In treating a wound involving a main artery of the leg or arm, nature calls various anastamosing arteries into service to form a circuit around the break in the bloodstream and to allow the circulation to proceed unimpeded. This is a wise provision and means the saving of a limb which at the present time the surgeon would have to sacrifice. Why, may we ask, does nature not have these anastamosing arteries instead of the so-called end arteries in vital organs so much more important than the limbs? If the dorsal artery of the thumb becomes plugged or divided, anastomosis with the princeps pollicis on the other side prevents this finger from suffering any loss of blood supply; on the other hand, if one of the ganglionic branches of the middle cerebral artery becomes plugged, nature is unable to do for the brain what it did for the thumb and apoplexy with death or worse is the result. The most vital spot of the brain is thus laid bare to a bit of natural negligence which even the smallest toe does not suffer. During starvation the different ways in which the body metabolism economizes in the food supply is often remarkable. Nevertheless, in a starving child, nature will allow the food to be used for the growth of the skeleton before supplying the vital organs dying of hunger, and the bones ignorant of their greed grow longer up to the very point of death. In anemia nature will allow the dupe to masquerade about as a fat and well-nourished specimen of mankind, when, in fact, he is starving to death; for while the blood cannot furnish enough oxygen to utilize the food eaten, the food collects in the tissues as useless matter unable to be touched by the neighboring cells which are dying of hunger.

As a final example of the many ways in which nature fails us as a skilled therapeutist, reference may be made to the act of childbirth. In face presentation when the chin rotates back against the promontory of the sacrum or in one of those nasty impacted shoulder presentations, further progress by natural means is impossible. The woman may

die in time of exhaustion or the uterus may even burst and make the end more hurried. How many pitiable mothers and newborn babies would be left to die were it not for the obstetrician's instruments? We are all familiar with the manner usually chosen by nature to relieve an extrauterine pregnancy and how this horrible accident may at any time without warning cast gloom upon our own family. Thus might be enumerated page after page the numerous blunders made by nature in treating disease. The examples drawn are all familiar ones, known to every physician; they can but recall others to his mind. Let us realize once for all that while it is human to err, it is also godly, and that in treating disease we do not have to follow too closely the rules laid down by a natural process which is more concerned with thinning out the whole race than with taking special pains to save individual members.

507 Bedell Building.

ETIOLOGY OF ADHESIONS OCCURRING ON THE LARGE INTESTINE.

By GOODRICH B. RHODES, A.B., M.D.,

CINCINNATI, OHIO.

JUNIOR SURGEON TO THE CINCINNATI CITY HOSPITAL AND EPISCOPAL HOSPITAL FOR CHILDREN.

Arbuthnot Lane, in 1908, called attention to certain adhesions in the intestinal tract and since then has in particular demonstrated the existence of a pathological kink in the ileum in the neighborhood of the cecum produced by these adhesions. His observations have been confirmed by many other surgeons, and Jackson[1] has further shown the existence of a veil-like layer of loose connective tissue overlying the ascending colon and noticeably constricting it. The existence of these bands gives rise to a definite symptomatology, varying in severity from the slightest degrees of intestinal indigestion, abdominal pain, or constipation, to the most grave conditions of anemia, autointoxication, and neurasthenia. Many cases of appendicitis which are unrelieved after operation have been shown to be due to the presence of these constricting bands, as proved by the subsequent cure of the appendicitis-like symptoms after the removal of the constriction.

Various explanations have been brought forward to account for the formation of these bands, among which may be cited the following: Lane[2] believes that the condition is caused by a ptosis of the cecum, with a subsequent thickening into adhesions along the lines of greatest resistance to the cecal prolapse. Binnie[3] regards the lesion as a primary pericolitis.

Hoffmeister[4] reports fourteen cases, in ten of which the *Trichocephalus dispar* was found.

Mayo[5] regards the formation of Jackson's membrane as due to embryonic causes, the bowel in these cases rotating late, and in its descent from the liver burrowing beneath the peritoneum, so that it comes to its final position with a membrane covering it. Chronic colitis has been urged as a cause by many, while Lennander[6] attributes it to an infantile colitis. It is conceded by all observers that cecal ptosis is a constantly found condition in these cases.

Adhesions or connective tissue bands of the intestinal tract caused by conditions other than inflammation or trauma occurring outside of the intestine are almost entirely confined to the large intestine, if we exclude the adhesions occurring in the upper abdomen produced by gastric or duodenal ulcer. Adhesions of the small intestine generally are readily explainable by inflammation in the neighborhood, such as tubal or ovarian disease, peritoneal irritation from tumor or trauma, appendicitis, or gall-bladder disease. On the other hand, if we study the reported cases of what might be termed idiopathic adhesions, we find that they are encountered with the greatest frequency and abundance in the cecal region and in that of the ascending colon.

We have, then, to consider a condition limited to a certain definite intestinal area, whose function, structure, and contents differ greatly from the area in which adhesion formation is not common. The greater portion of the solids in the intestinal contents, roughly about 90 per cent., is absorbed from the small intestine, and about 50 per cent. of the fluids. The remaining 50 per cent. of the fluids and only 10 per cent. of the solids are taken up from the large intestine, so that in the large intestine we have an entire change in the absorptive qualities of the gut, by virtue of which the soluble toxins are absorbed with greater readiness than in the small intestine. The character of the contents of the intestine now abruptly changes, as the reaction of the feces changes from alkaline to acid after passing the ileocecal valve. The semisolid mass now moves more slowly through the large gut than it did through the small intestine, thus affording a longer period during which the septic contents of the bowel are in contact with a given portion of the gut wall, which is busily absorbing the soluble toxins.

In general it may be said that the further down the intestinal tract we proceed the greater is the number of bacteria and the greater is their virulence. The climax is reached in the colon, where the colon bacillus is largely responsible for the acid reaction and where bacteria are exceedingly numerous, their toxins are most virulent and putrefaction is in progress.

The anatomical structure of the cecal region provides a focus where, in a cul-de-sac, a large portion of the intestinal contents can remain for a long period even in a perfectly normal gut; and in a cecum which has prolapsed and whose walls are atonic this period is very greatly increased.

In the normal intestine the passage of living bacteria or of their toxins through the intestinal wall does not occur, but, in the event of certain lesions occurring to the intestinal wall, or of interference with its vascularity, the passage of both has been demonstrated to occur with consistent regularity. Neisser and Hauser[7] have shown that in the normal intestine no bacteria can pass from the intestine to the blood lymphatics, but on the occurrence of artificially produced lesions of the intestines they have shown, as has also Beco,[8] that the passage of the colon bacillus into the circulation can be regularly made to occur. Their experiments were conducted by introducing artificial irritants, such as croton oil, powdered glass, or other irritants into the intestinal tract after a liberal feeding of colon bacillus cultures.

Klecki[9] and others have demonstrated that it is the interence with the venous return in a loop of strangulated intestine which is the basal cause of the gravity of the symptoms. The contents of the loop, he says, under these circumstances attain a very exalted degree of virulence, chronic passive hyperemia is induced, and there is a passage of the germs themselves besides their toxins through the intes-

tinal wall. He also had determined that the action of the toxins of a virulent colon bacillus is sufficient in itself to provoke a peritonitis. Oker-Blom[10] has shown that it requires a venous stasis lasting more than 72 hours to bring about an invasion of the peritoneal cavity by the germs themselves.

That there is a transmigration of organisms from the cecum and ascending colon is rendered very probable by a study of the reported cases of colon bacilluria. In the cases in which only one kidney was the seat of the infection, hence excluding a hematogenous infection, it is found in an overwhelming majority of cases to be the right kidney. The reason for this probably lies in the anatomical relationship of the right kidney and the ascending colon; Franke[11] has demonstrated a lymphatic connection between the ascending colon and the right kidney by which the bacteria can pass directly into the kidney from the intestine, provided that there is a slight lesion of the mucosa.

Some of the reported cases of these adhesions give a history of typhoid fever at some preceding period of life. This becomes an interesting point in view of Sanarelli's[12] investigations showing that the colon bacillus acquires an exalted degree of virulence in typhoid fever, due to the action of the typhoid toxin.

In view, then, of the observation of all the reporters that all these cases are accompanied by a ptosis of the cecum, it would seem a not improbable explanation of their production to assume the following sequence of events:

1. Cecal ptosis occurs, due to chronic constipation, with consequent dragging downward of the cecum by the weight of fecal contents or as part of the general visceroptosis.

2. Venous stasis now occurs, due to interference with the return circulation, lack of tone in the bowel wall, and irritation from the enclosed fecal contents, which now begin to manifest a very greatly increased degree of toxicity.

3. As a consequence of this stasis and the increased virulence of the bowel contents there occurs a penetration of the intestinal wall, first, by the toxins and later possibly by the germs themselves, after the condition becomes more aggravated.

4. The continued action of these slight amounts of toxins, exerted over a length of time results in the production of a new tissue formation.

5. This process constitutes, in effect, a vicious circle.

6. This process of connective-tissue formation, when localized in the neighborhood of the appendix in such a way as to constrict the appendix or to kink it, may be the cause of many cases of appendicitis of secondary origin.

REFERENCES.

1. Jackson: Transactions Western Surg. and Gyn. Association, 1908.
2. Lane: *Surg., Gyn. and Obst.*, Feb., 1908
3. Binnie: *Month. Cyclop. Pract. Med.*, 1905, vol. viii, p. 341.
4. Hoffmeister, quoted by Connell: *Surg., Gyn. and Obst.*, Nov., 1911.
5. Mayo, W. J.: *Surg., Gyn. and Obst.*, March, 1911.
6. Lennander, quoted by Connell: *Surg., Gyn. and Obst.*, Nov., 1911.
7. Neisser: *Zeitschrift f. Hygiene*, Bd. 22, p. 12.
8. Beco: *Annales de l'Institut Pasteur*, 1895, p. 190.
9. Klecki: *Annales de l'Institut Pasteur*, 1895, p. 710.
10. Oker-Blom: *Centralblatt f. Bakt.*, 1894, Bd. 15.
11. Franke: *Mitteil. aus den Grenzgeb der Med. und Chir.*, Jena, xxii, 4, p. 511.
12. Sanarelli, quoted by Klecki: *Loc. cit.*

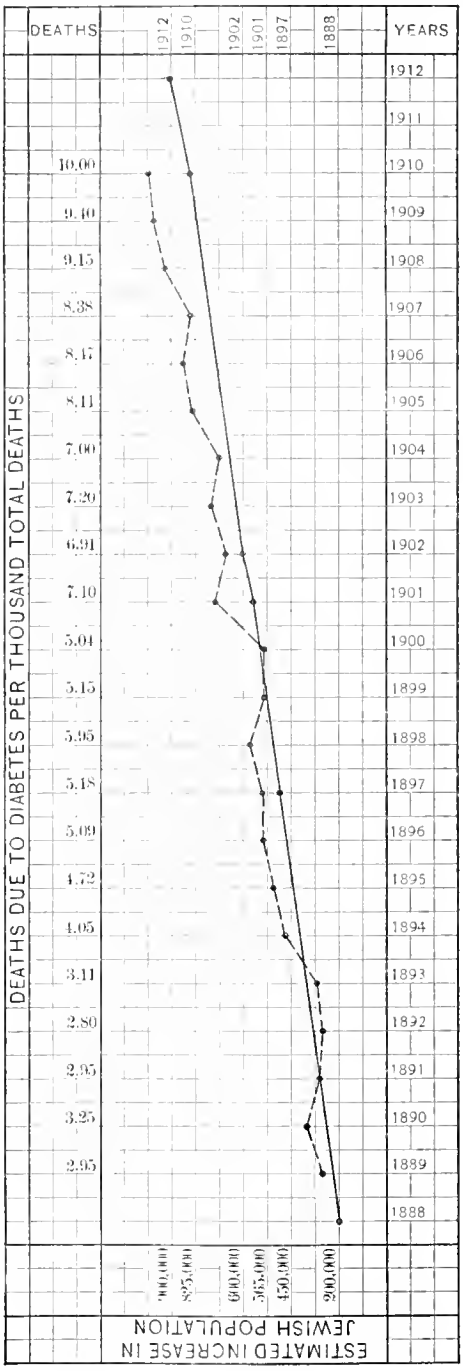
INCREASE IN THE DEATH RATE FROM DIABETES—A POSSIBLE EXPLANATION.

By J. G. WILSON, M.D.,

ELLIS ISLAND, N. Y.

ACTING ASSISTANT SURGEON, UNITED STATES PUBLIC HEALTH SERVICE.

The consensus of opinion is that diabetes is on the increase. So far as I have been able to ascertain, the data for forming such a conclusion are exclusively drawn from our large cities. There is no evidence that the disease is increasing among the



rural population. That diabetes is much more prevalent in New York City than it was twenty years ago is shown by an examination of the records of the Board of Health. In 1889, out of every 1,000 deaths from all causes in the Boroughs of Manhattan and the Bronx, 2.95 were ascribed to diabetes. In 1910 the deaths from diabetes in Greater New

York numbered 10 per thousand. Thus the death rate from this cause was increased more than threefold in a period of twenty years.

While much has been written concerning the essential nature of this disease, very little has been learned relative to the best means for its prevention. It is possible that this phase of the question will ultimately resolve itself into the methods of right breeding more than of right living. For the evidence seems to be accumulating that it is due to some hereditary defect, and that the tendency to become diabetic is accentuated by consanguineous marriages. Thus in the Johns Hopkins *Bulletin* for February, 1912, Nellis B. Foster reports from his own experience three instances of diabetes occurring in the brothers and sisters of the same family. He collected 130 cases of the same nature from the literature. In 24 of these it was specifically mentioned that the parents were likewise diabetic, and in several instances the affection had occurred in the same family for four generations. He quotes Weiselbaum as advancing the theory that in young diabetics an hereditary defect may exist in the islands of Langerhans, thereby rendering these structures more susceptible to toxic influences.

In an article published in the MEDICAL RECORD, November 17, 1900, Heinrich Stern noted the extreme prevalence of this disease among the foreign born. He said that out of a total of 202 cases in New York City for the year 1899, the death certificates showed that only 51 were native born. He likewise stated that the Jews suffered more than others from this affection and he attributed their greater susceptibility to the practice of inbreeding which obtains among them. Stern's statistics, compiled from the Board of Health records for the decade commencing 1889, showed a rise from 2.95 deaths per thousand in that year to 5.1 per thousand in 1899. I have gone over the records of deaths compiled by the Board of Health for the succeeding decade and have combined the results thus obtained with Stern's statistics in the accompanying chart. The fact that the death rates of the two decades are compiled, in the one case from the Boroughs of the Bronx and Manhattan alone before the incorporation of all the boroughs into Greater New York, and in the other case from the statistics after this incorporation took place, will not materially affect the result, for the reason that the comparison of the yearly increase is based on the relation of deaths from diabetes to deaths from all causes, and not on its relation to the number of inhabitants.

It occurred to me that perhaps the increasing death rate from diabetes in New York City might be dependent upon the increase in the Jewish population. I have endeavored to construct a curve of this increase, and to compare it with that of the death rate from diabetes. It will be seen that these two curves follow almost exactly identical lines. The estimated rate of increase of the Jewish population is of course open to some criticism because of the fact that the unfortunate method of classification by nationality instead of by race makes it impossible to obtain absolutely accurate vital statistics of the Jews in New York City. However, we have sufficient data to warrant the statement that the increase in Jewish population has been steady and progressive, and that in spite of a varying amount of immigration, the rate of increase has not been subject to marked fluctuations.

I have based my curve of Jewish increase upon Jacobs' statistics as given in the Jewish Communal Directory for 1912. Although he places the total number of Jews at a lower figure than the usually accepted one, his estimates are the most available for the purpose of comparison, because they represent the conclusions of one man alone, and are therefore not subject to the error which would inevitably arise were the figures taken from a great variety of sources. I have had to make one exception. The estimate of 200,000 for the year 1888 is my own. Between the years 1877 and 1897 I can find no estimate by Jacobs of the New York City Jewish population. In the former year he places the figure at 60,000 and in the latter at 450,000. If we draw a line backwards from this point on the chart to his estimate of 1877, it will intersect the year 1888 not far from the 200,000 point. That this is approximately correct is rendered all the more probable by the fact that in 1888 the Jewish Year Book placed the total number of Jews in the United States at 400,000. Although this is probably higher than the figures one would obtain by Jacobs' method, it nevertheless serves as a basis on which to calculate the New York City Jewish population for that year, for the reason that estimates of the total Jewish population in the United States from the same source show that in round numbers since the year 1888 about half of it has been in New York City. Consequently, I do not believe that the estimate of 200,000 can be far enough from the correct number to materially alter the close relation existing between the two curves of increase.

The striking correspondence of the two lines of increase as illustrated by the foregoing figures and the chart elucidating them is sufficient ground for at least suspecting that the increased death rate from diabetes finds its chief explanation in the increase of the Jewish population.

Purulent Pericarditis.—J. P. Parkinson and D. Drew report the case of a boy, aged 4½ years, who had an attack of pneumonia involving the bases of both lungs. The urine contained blood, pus, albumin and epithelial and blood casts with many pneumococci. The pneumonia ran an ordinary course, the temperature becoming normal at the end of ten days, and the signs in the right lung cleared up. The pulse-rate, however, remained the same and the heart sounds became muffled, but there was no friction sound or increase of the cardiac dullness. After a few days this latter sign appeared, and finally there was dullness up to the first rib and increase of dullness to the right. At the end of a week there was swelling of the face and some edema over the precordium. Two inches of the fifth costal cartilage were excised and there were evacuated 10 ounces of pus which contained pneumococci in pure culture. The recovery was uneventful, the signs of consolidation at the left base disappeared, and the urine became normal. There were now no signs of enlargement of the heart either clinically or by the *x*-rays. This case is interesting on account of the exceptionally good result of treatment. The boy now shows no sign of cardiac embarrassment, and the heart moves to and fro when the patient is put on one or the other side. Exploration of the pericardium ought not to be done with the needle, owing to the difficulty of diagnosis of fluid by physical signs. It seems better to open it deliberately, and in that way evacuate its contents, rather than to run the risk of puncturing the heart. In this case the diagnosis was fairly clear before operation, but that is frequently not the case.—*Proceedings of the Royal Society of Medicine.*

MEDICAL RECORD.

A Weekly Journal of Medicine and Surgery.

THOMAS L. STEDMAN, A.M., M.D., EDITOR.

PUBLISHERS

WM. WOOD & CO., 51 FIFTH AVENUE.

See fourth page following reading matter for Rates of Subscription and Information for Contributors and Subscribters.

New York, October 12, 1912.

CLIMATIC INFLUENCES IN THE TROPICS.

SOME little time ago Major Woodruff advanced the view that the actinic rays of the sun are responsible for much of the morbidity and mortality which occur in tropical regions. Many arguments were brought forward in support of this theory and it was generally thought that Woodruff had made a very good case. In the *Military Surgeon* for August, 1912, however, appears a report of the Board for the Study of Tropical Diseases in the Philippines by Major Weston F. Chamberlain and Captain Edward Vedder, in which the conclusion is reached that it is by no means proved that the actinic rays of the sun are factors in tropical morbidity or that pigmentation of the skin is a protective effort on the part of nature against the chemical rays of the solar spectrum. According to their views the main causes of the troubles encountered in the tropics are infections, continuous heat, and high humidity. Subsidiary causes are nostalgia, isolation, monotony, and the excessive use of alcohol. Woodruff based his opinion largely on figures going to show that affections of the nervous system, including neurasthenia and insanity, are particularly likely to occur in the tropics as a result of excessive light stimulation. In opposition to this the report before us says that subsequent statistics do not confirm the view that nervous diseases are prevalent in the Philippines. The reports of the Surgeon-General of the Army for the years 1903 to 1909, inclusive, show that insanity and nervous diseases have been no more common among soldiers in the Philippines than among those in the United States. During the past five years, 1904 to 1909, there has been no material difference between the suicide rate in the Philippines and that of the United States. Neurasthenia has played but a small part in the morbidity of the Islands during these years. Yet the sunlight is the same as in the period from 1898 to 1902, and no special effort is being made to protect the men from the sun. More potent causes for the better health manifested by the soldiers in the Philippines are probably that the hardships, the bad sanitation, the poor food, the isolation, and the nostalgia of earlier days have been largely remedied.

Investigations were also made with regard to the relative resistance of blonds and brunettes in the tropics, and the conclusion was reached that pigmentation *per se* is not necessarily beneficial in the tropics, or rather that such has not been absolutely proven to be the case. From a consideration of the data available the authors of the report state that it appears that blonds are quite as well able as brunettes to withstand the influences of the Philippine climate for a period of two years and probably for a period of five and one-half years.

Without wishing to adversely criticise these several conclusions and while agreeing that the injurious effects of the actinic rays may have been exaggerated by Woodruff and other writers, it still seems that the authors of the report may have gone to the other extreme in too greatly minimizing the harmful action of these rays. The medical authorities of all tropical countries in which white folks reside have conceded that for them protection from the sun rays is at least strongly advisable if not absolutely necessary to conserve health. In India this is the consensus of opinion of medical men and of those who have lived in the country for a long time. Infections, heat, and high humidity are the main causes of disease affecting the white man in the tropics, but further and more convincing proof will have to be forthcoming ere the actinic rays of the sun can be regarded as a negligible quantity in the production of certain disorders. As for the protective influence of pigmentation of the skin in the tropics the question is more open. But, and this point must be especially emphasized, it is usually not until after several years' residence in the tropics that the healthy white man who lives in a regular and abstemious manner begins to deteriorate in health. Perhaps it might be more correct to say that the signs of deterioration do not show until after several years of residence. Of course, in the Philippines and elsewhere in the tropics in which the white man holds sway, good sanitation, pure water supply, and the destruction of insect life, especially of disease-bearing mosquitos, have been the principal means whereby diseases incidental to the regions have been warded off. Nevertheless, in the light of experience, it would seem that we are not yet justified in asserting that the actinic rays of the sun are not harmful to the white individual nor that pigmentation of the skin is not a protection against these rays. The subject is intensely interesting and the instructive report of Chamberlain and Vedder, though by no means conclusive, should stimulate further discussion.

THE DEAF CHILD.

THE medical inspection of schools has revealed the fact that deafness is not uncommon among school children. Dr. Helen Macmurchy of Toronto read a paper bearing on this question at the Sixth Congress of the American School Hygiene Association, which has since been published in pamphlet form. It is pointed out that it is often possible clinically to recognize the deaf child by inspection. Of course, this statement refers to the slight and medium degree of deafness. The deaf child seems to lack vital resistance. Besides there is something characteristic in the facial expression.

Children who are slightly deaf, that is, not so deaf that the condition is suspected by teacher or school nurse, are frequently greatly handicapped by the failure to recognize this condition. Dr. Macmurchy draws attention to the fact that in a perfectly quiet room the average normal hearing distance for a whisper is about twenty-five feet. A child that can hear a whisper only at five yards will not lose much education on account of this degree of impairment. Those who can hear a whisper only from three to five yards should sit on the front seats. Those who can hear a whisper only from one to three yards need special help, and should be placed in smaller classes with a teacher who will speak slowly and distinctly and will take special, individual interest. Those who can hear a whisper one yard away only, or less, should be in a small special class of ten or twelve and should learn lip reading. The above are simple, practical schoolroom tests. The congenitally deaf child should be taught lip reading at as early an age as possible, which will obviate to a great extent the handicap of mutism entailed by his affliction. The author summarizes the education of the deaf child as follows: (1) Teach the deaf child to speak. (2) Recognize the deaf child and secure his education. (3) Provide special teachers and special classes for the deaf child. (4) In large cities night classes for adults who are in danger of becoming deaf should be established in lip reading.

The plea of Dr. Macmurchy for the recognition of the slightly deaf child is pertinent and rational. Undoubtedly many children suffer from unrecognized slight deafness and are handicapped thereby. The praise of lip reading, the salvation of the deaf, is well deserved and the contention that the time has now come when medical inspection should carry the benefits of the method throughout the whole country is extremely well taken.

MORONS.

For some time past the daily press has contained many articles on the subject of eugenics and the feebleminded. Even the news items concerning domestic scandals and crimes of lighter or greater gravity have in certain instances sought to explain derelictions from the beaten paths of virtue on the ground of bad heredity. In this pseudo-scientific newspaper interpretation of bad acts the word "moron" is frequently encountered. Perhaps few of those who speak so freely of morons have a definite conception of the meaning of the word. It is derived from the Greek moros meaning a fool, and broadly speaking that is exactly what is meant when the word moron is properly used. In the technical sense in which the term is now employed by students of the feebleminded it is applied to those persons whose mental development is permanently arrested somewhere between the ages of eight and twelve years.

In the New Jersey Training School at Vineland out of 428 inmates 118 belong to the moron type. From an industrial standpoint these are useful members of the school. Those of the lowest grade of moron, that is with the mentality of a child of eight and nine years, are able to do errands, make beds, scrub, lay bricks, and care for the bathrooms. The middle-class morons, who are mentally ten years old, make good institution helpers. They do the routine work in a satisfactory manner. The high-grade moron is found among those who are classified as having the mentality of a child of eleven to twelve years of age. These do fairly complicated work with only occasional oversight. They use machinery and care for the animals of the place. But whatever the chronological age may be they never pass beyond the mental age of a child of twelve. They cannot plan. They lack initiative and are almost utterly devoid of creative imagination. Bereft of the care and oversight of an institution and turned out in the world to shift for themselves they soon find their way into the almshouses, jails, and reformatories. These are the born fools, who are inherently incapable of passing the mental age of childhood. Somewhere between the ages of eight and twelve years their intellectual development permanently ceases.

The Newer Conceptions of Meningitis Basilaris Posterior.

Until recent years all cases of posterior basic meningitis were regarded as tuberculous in origin. The English pediatrists, among whom may be mentioned Still and Thursfield, were the first to point out that most of these cases are really types of epidemic cerebrospinal meningitis. Gee and Barlow among others attributed some of the cases to syphilitic infection, while Gowers noted that in cases presenting cervical opisthotonos dating from birth the probable explanation is a meningeal hemorrhage at the base of the skull. This entire subject is exhaustively reviewed in the *Archiv für Kinderheilkunde*, August 13, 1912, by E. Hartje, who reports the history of a case which was apparently of non-infectious origin. He regards posterior basic meningitis not as a definite clinical entity but rather as a symptom-complex, the predominating manifestation of which in all cases is a pronounced cervical opisthotonos. The inflammatory process is confined to the meninges at the base of the brain, in the region of the medulla oblongata, the pons, and the cerebellum. The causes are various: in some cases bacteria, as the meningococcus or the pneumococcus; in other instances syphilis or traumatism may be the etiological factor; while in other cases the disease has been attributed to rheumatism, enteritis, and, as in the author's case, to the sudden action of cold. A pathological lesion that is common to all cases is the inflammatory closure of the foramen of Magendie and a consecutive internal hydrocephalus. Of the latter evidence is afforded by the presence of Macewen's sign or increased resonance on percussion over the parietal bones, which resonance Hartje compares to that of a ripe melon. Important points in the differential diagnosis of posterior basic meningitis from tuberculous meningitis are the facts that the former disease is of greater duration, recovery occurs in 16 per cent. of the cases, cervical opisthotonos is constantly present, optic neuritis and bradycardia seldom occur, nystagmus is a frequent manifestation, a retracted abdomen is rarely in evidence, while internal hydrocephalus is found in almost all cases. The opposite conditions, as is well known, generally prevail in the case of tuberculous meningitis.

News of the Week.

Tuberculosis and Poverty.—The New York Association for Improving the Condition of the Poor has recently completed a study of the causes of poverty in New York, from which the conclusion is drawn that tuberculosis is responsible for over 8 per cent. of the destitute homes in the city. Having previously found that sickness was the chief cause of dependency among the families in its care, the Association began an inquiry to determine which diseases are most prevalent, to the end that its preventive work might be better planned and more efficient. It was found that of 6,505 families applying for aid between October 1, 1911, and June 30, 1912, 1,605 were forced to do so on account of illness, and tuberculosis was found to be the disease responsible in 555 or 34 per cent. of these. Rheumatism forced 187 other families into dependency, and the remaining cases were classified as follows: Illiness attending childbirth, 101; kidney and heart disease, 156; pneumonia, 99; children's contagious diseases, 48; paralysis and epilepsy, 48; eye and ear diseases, 45; cancer and tumors, 44. The Association concludes from these statistics that the prevention of disease, and especially of tuberculosis, is a most important phase of the campaign against poverty.

Homicides on the Increase.—Statistics just issued show that the homicide record of the principal cities in the United States for the decade ending with 1910 exceeds that of any similar period in our history, and that the rate for 1911 is still greater. Whereas in the ten years ending with 1910 there were 9,672 homicides in all of the cities contributing statistics, making a rate per 100,000 of 6.9, in 1911 alone there were 1,300 homicides, giving a rate of 8.3 per 100,000. The highest rate is found in the Southern cities, Memphis, Tenn., having the unenviable record of 47.1 as the average rate per 100,000 for the decade, and of 63.4 per 100,000 for 1911, an increase of 16.3. In New York the rate per 100,000 for 1911 was 6.9 for Manhattan and the Bronx, an increase of 1.8 over the average for the ten years previous, and 3.6 for Brooklyn, a decrease of 0.6. The greatest increase in the 1911 rate as compared to the 1901-1910, occurred in Nashville, Tenn., where a difference of 21.7 was recorded, and the greatest decrease, 5.5, in Spokane, Wash. The statistics appear even more startling when compared with those of England and Wales, where the homicides average less than 1 per 100,000, and bring out an apparent disregard for human life in this country.

Health of the Canal Zone.—During the month of July there were in the Canal Zone a total of 42 deaths from all causes among employees, of which 32 were due to disease and 10 to violence, making an annual average rate per thousand of 10.34, which is lower than the rate for the same month of the two previous years, although in 1904 and again in 1909 still lower rates were recorded. The annual average death rate per thousand in the cities of Panama and Colon and the Canal Zone, including both employees and civil population for the month was 23.55. Among employees during the month the principal causes of death were as follows. Tuberculosis, 9; lobar pneumonia, 6; malarial fever, 2, and dysentery, 1. One case of yellow fever on a ship from Guayaquil, Ecuador, was isolated in Santo Tomas Hospital, and died there on July 14. With this exception no case of yellow fever, smallpox, or plague occurred on or was brought to the Isthmus during the month.

Must Furnish Sanitary Cups.—The Supreme Court of New Jersey recently handed down a decision upholdng the order of the Board of Public Utilities compelling all railroads furnishing water for their passengers to provide sanitary or individual utensils from which to drink it. Following the passage last year of a law prohibiting the use of common drinking cups in public places, a number of the railroads in the State removed the glasses from their trains, leaving it to the passengers to provide their own drinking utensils.

Plague in Azores.—The American Legation at Lisbon, Portugal, has reported to the State Department at Washington, the occurrence of several cases of bubonic plague on the island of Terceira, one of the Azores.

"Carrier" Books.—The school officials of Washington, D. C., have recently confiscated and destroyed 49,000 text books which had been found to be germ carriers.

Mushrooms Poison Party.—Twelve persons were poisoned, two of them seriously, from eating mushrooms at a party in Long Island City recently.

Visiting Physicians.—With each steamship arriving during the past week the number of distinguished physicians visiting in New York prior to the meetings of the International Congress of Hygiene in Washington has been increased. On September 17 a large delegation of German physicians, many of them accompanied by their wives and families, arrived in New York, and on the following evening were entertained at a reception given by the German Medical Society, at which Mayor Gaynor made an address of welcome. Excursions about the city were also planned for the visitors who thus visited the universities, the hospitals, the museums, and other places of interest.

Report of Milk Stations.—With the end of last month the Straus Milk Stations, New York, completed their twenty-first year of service, with a record of only one death during the summer among the 2,200 babies which have been supplied with milk from the seventeen stations. During the year 2,193,684 bottles of milk were dispensed and 1,326,100 glasses of milk were served in the parks and on the recreation piers. The summer stations have now been closed, but eight are kept open throughout the year.

Tuberculosis Day.—The National Association for the Study and Prevention of Tuberculosis has designated Sunday, October 27, as "Tuberculosis Day." Clergymen all over the country will be asked to speak to their congregations on the subject, and particularly to denounce from their pulpits the fake "cures" for consumption so widely advertised. It is estimated by the Association that the volume of business done by these fraudulent concerns amounts to more than $1,500,000, and that more than 500 such "remedies" of all sorts are now on the market.

Gifts to Charities.—By the will of the late Mr. Henry Rawley of New York, the New York Eye and Ear Infirmary and the Manhattan Eye and Ear Infirmary share equally in his estate, estimated at $11,400.

By the will of the late Mr. Richard C. Dale of Philadelphia the sum of $5,000 is bequeathed to the Children's Hospital of that city.

By the will of the late Enos R. Artman of Philadelphia a trust fund of $100,000 is created for the establishment of a home for poor and de-

serving Lutherans of both sexes. Should it, however, prove impossible to carry out this purpose, $10,000 of the sum named is bequeathed to the Philadelphia Home for Incurables for the erection of a memorial chapel. In addition, the sum of $5,000 is bequeathed specifically to the Home.

In the final accounting of the estate of the late John S. Kennedy of New York, the amount of his bequest to the Presbyterian Hospital of this city is given as $1,550,823.

Deaths in New York City.—During the week ending September 28 there were in New York City 1,194 deaths, as compared with 1,233 during the same week of last year. Of these 175 were due to diarrheal diseases and 308 were of children under one year of age. For the first thirty-nine weeks of this year the death rate was 14.51, for last year 15.70.

Personals.—Dr. Petacci of Rome, Italy, physician to the Pope, died at his home on October 1.

Dr. Charles S. Turnbull of Philadelphia has been reappointed by Governor Tener of Pennsylvania as a member of the Board of Trustees of the Home for Training Deaf Children.

Mr. Alexander H. Candlish, superintendent of the New York Post-Graduate Medical School and Hospital from 1894 to 1907, has been reappointed to that office after an absence of five years.

Dr. Allan McLane Hamilton of New York announces his removal to 36 East 40th street.

Dr. James G. Mumford, formerly of the Massachusetts General Hospital, has become superintendent and physician-in-chief of the Clifton Springs Sanitarium.

Seventh Congress of Balneology.—This congress will meet in Meran, Austria, on October 11 to 13, 1912, at which time honor will be done to Hofrat Winternitz, president of the confederation for many years. Delegates from the Austrian, Hungarian, German, and Swiss societies are expected to be present.

Lectures at the Post-Graduate.—Prof. H. Strauss of the University of Berlin will lecture, in German, at the New York Post-Graduate Medical School and Hospital, Second avenue and 20th street, on Monday, October 14, at 4 P.M., on "Gastric Secretion from the Therapeutic Point of View," and at the same hour on Tuesday, October 15, on "The Method and Purpose of Dechlorination in Nephritis."

Prof. C. von Noorden of the University of Vienna will give a series of lectures, in English, at the Post-Graduate on "New Aspects of the Pathology and Treatment of Diabetes," and on "Diagnosis and Treatment of Nephritis," beginning on Tuesday, October 29, at 4 P.M., and continuing for four consecutive days at the same hour. Cards of admission to all these lectures will be issued upon application.

Abuse of Medical Charity.—At a meeting of the Physicians League of Brooklyn, N. Y., on September 27, a very interesting discussion as to the abuse of medical charity occupied the evening and as a result a committee was appointed to tabulate the more conspicuous abuses of medical charity and the most promising of the suggested remedies therefor, so that these could be acted upon at the next meeting, which will take place at the County Medical Society Building on October 18.

Utah State Medical Association.—At the annual convention of this association held in Ogden on September 24 and 25, the following officers were elected: *President,* Dr. Andrew J. Hosmer, Salt Lake City; *Vice-President,* Dr. Richard A. Pearse, Brigham; *Secretary,* Dr. William Brown Ewing, Salt Lake City; *Treasurer,* Dr. Howard P. Kirtley, Salt Lake City. The next annual convention will be held in Salt Lake City. The association went on record as favoring the sterilization of habitual criminals, epileptics, imbeciles, and the insane, as approving of the Owen bill and condemning the Senators from Utah, who had failed to support it, and also as condemning the telephone service in Utah, which it declared to be inadequate and intolerant, demanding immediate attention of the courts or of the next legislature.

Ohio County (W. Va.) Medical Society.—At the annual meeting held in Wheeling on September 16, the following officers were elected: *President,* Dr. Jacob Schwinn, Wheeling; *Vice-President,* Dr. John T. Thornton, Wheeling; *Secretary,* Dr. Jonathan Edward Burns, Wheeling; *Treasurer,* Dr. R. McC. Baird, Wheeling.

Obituary Notes.—Dr. FRANK JUDSON PARKER of New York, a graduate of Yale University, Medical Department, New Haven, in 1898, a member of the American Medical Association, the New York State and County Medical Societies, the New York Academy of Medicine, the New York Ophthalmological Society, the American Ophthalmological Society, and the Medical Progress Club, assistant attending surgeon to the Manhattan Eye and Ear Hospital, ophthalmologist to the Presbyterian Hospital Out-Patient Department, and consulting ophthalmologist to Seton Hospital, the New York Orphan Asylum, and the Greenwich Hospital, Connecticut, and attending physician to the Blind Babies' Home, died in the Presbyterian Hospital, New York, on October 2, aged 39 years.

Dr. LEON M. NUGENT of Wauwatosa, Wis., a graduate of Marquette University, Medical Department, Milwaukee, in 1908, and a member of the Wisconsin State and Milwaukee County Medical Societies, was killed in an accident on September 7.

Dr. HENRY FISKE LEONARD of Boston, Mass., a graduate of the College of Physicians and Surgeons, New York, in 1880, and a member of the Massachusetts State and Suffolk County Medical Societies, died in the Worcester State Hospital after a long illness on September 25, aged 54 years.

Dr. THOMAS ANDERSON of Watertown, Mass., a graduate of the Chicago Homeopathic Medical College in 1878, died at his home on September 18, aged 75 years.

Dr. ALBERT WOOD of Worcester, Mass., a graduate of the Harvard Medical School, Boston, in 1862, a veteran of the Civil War, and a member of the American Medical Association and the Massachusetts State and Worcester County Medical Societies, died at his home on September 26, aged 79 years.

Dr. DANIEL B. STREET of Washington, D. C., a graduate of the Georgetown University School of Medicine, Washington, in 1874, and a member of the Medical Society of the District of Columbia, died at the home of his daughter in Moose Jaw, Saskatchewan, Canada, after a short illness, on September 18, aged 70 years.

Dr. ALBERT GALLATIN JONES of Lexington, Ill., a graduate of the Northwestern University Medical School, Chicago, in 1862, died at his home on September 18, aged 85 years.

Dr. FRANCIS M. DAILY of Beloit, Kan., a graduate of the College of Physicians and Surgeons,

Keokuk, Iowa, in 1878, and a member of the American Medical Association and the Kansas State and Mitchell County Medical Societies, died at his home suddenly on September 14, aged 57 years.

Dr. Thomas A. Hays of Louisville, Ky., a graduate of the Hospital College of Medicine, Louisville, in 1875, died at his home after a long illness on September 17, aged 57 years.

Dr. Thomas J. Mitchell of Jackson, Miss., a graduate of the University of Pennsylvania, Department of Medicine, Philadelphia, in 1852, a member of the American Medical Association and the Mississippi State and Hinds County Medical Societies, a surgeon in the Confederate Army during the Civil War, and for thirty-two years superintendent of the Mississippi State Insane Hospital at Jackson, died at his home on September 16, aged 82 years.

Dr. A. W. Gould of Cleveland, Tenn., a graduate of the University of Pennsylvania, Department of Medicine, Philadelphia, in 1877, died after a short illness on September 18, aged 75 years.

Dr. Francis H. Fisk of Nashville, Tenn., a graduate of the Eclectic Medical College, Cincinnati, Ohio, in 1857, died at his home on September 13, aged 75 years.

Leonard W. Williams, M.A., Ph.D., instructor in comparative anatomy in the Harvard Medical School, Boston, while attempting to operate an electric elevator in one of the medical school buildings on September 26, was caught between the walls of the shaft and the car and was crushed to death. Dr. Williams, who was forty years of age, was a graduate of Hanover University, and had received degrees from Princeton and from Brown Universities.

Dr. Daniel R. Ambrose of New York, a graduate of the New York University Medical College in 1868, died in the Metropolitan Hospital, Blackwell's Island, on October 1, aged 77 years.

Dr. Joseph Hasbrouck of Dobbs Ferry, N. Y., a graduate of the New York University Medical College in 1869, a member of the Board of Health of Dobbs Ferry, and of the New York Academy of Pathological Science, and attending physician to the Dobbs Ferry Hospital, died suddenly on October 2, aged 73 years.

Dr. George H. Knight of Lakeville, Conn., a graduate of the New York University Medical College in 1881, a member of the American Medical Association, the Connecticut State and Litchfield County Medical Societies, and physician in charge at the Connecticut School for Imbeciles, Lakeville, formerly a member of the Connecticut Legislature, and surgeon-general on the staff of Governor McLean of Connecticut, died on October 4 of heart disease as he was about to address a political meeting endorsing him as the Republican nominee for Congress, aged 56 years.

Dr. George Gleim of Lansdowne, Pa., a graduate of the University of Pennsylvania, Department of Medicine, Philadelphia in 1865, and a member of the Pennsylvania State and Delaware County Medical Societies, died at his home on September 21, aged 68 years.

Dr. William A. Neal of Elkhart, Ind., a graduate of Rush Medical College, Chicago, in 1857, and a member of the Indiana State and Elkhart County Medical Societies, died recently at his home, aged 76 years.

Dr. John Cowden of Petersburg, Tenn., for half a century one of the leading physicians of that town, died at his home on September 20, aged 76 years.

Correspondence.

YALE COLLEGIATE SCHOOL AND HOSPITAL IN CHINA.

To the Editor of the Medical Record:

Sir:—The Yale Hospital in Changsha, Central China, needs two men for its staff in the summer of 1913. Men who have recently completed their interneship in an American hospital and who wish for a large practical experience in medicine or surgery will find this a splendid opportunity. The last appointee writes that he has had three times as much experience in his first year there as he would have had in the United States.

We have an up-to-date surgical equipment with a great deal of major surgery, and a large medical clinic with a good laboratory for research work. Our old hospital has forty beds, but we are soon to begin the construction of a fine new plant.

The places are open for either a temporary or a permanent appointment, preferably the latter; and men who have received a Yale degree will be given preference. I shall be very glad to hear from interested men who will state their qualifications and shall be glad to give them full information about the conditions of appointment.

Edward H. Hume, M.D.
Physician in Charge.

156 Fifth Avenue, New York.

OUR LONDON LETTER.

(From Our Regular Correspondent.)

INSURANCE ACT; SCHEMES FOR A STATE MEDICAL SERVICE; GRIEVANCES OF NURSES—TUBERCULOSIS, EFFECTS ON RACE; HOUSING, OR OTHER CAUSES—CONFERENCE OF HOSPITALS ASSOCIATION.

London, September 20, 1912.

The Advisory Committees of the Insurance Commissioners are meeting today to consider the regulations to be issued for the administration of the medical benefit, and it is understood that a committee of medical men will be present. There was a preliminary meeting yesterday and on Wednesday of those medical members who did not retire from the Advisory Committee. A draft of the proposed regulations is said to have been prepared and will, of course, be considered and equally, of course, may or may not be adopted by the Commissioners. It seems quite time the regulations proposed should be decided on, so as to give the profession an opportunity of examining them before their final adoption. Certain minor points are reported to have been agreed upon, but not the rate of remuneration to be recommended to the government to offer. As to this, it is possible the Cabinet will consider the proposition at the meeting next month. They ought by that time to be under no misapprehension as to the feeling of the profession. During the week some new points and proposals have been freely discussed in the press, and that in regard to the interests of the public as well as of medical practitioners.

When Mr. Lloyd George held out a sort of threat to organize a State Medical Service he only raised a smile, for he must himself have known that he could not in a few weeks provide education for a new generation of doctors to displace those in existence. There has, nevertheless, continued a good deal of discussion as to whether such a scheme might eventually be arranged and what would be its effect on the public and at the same time on the

profession. The British Medical Association, or rather its officials, have favored such a plan, and this week is submitting to its branches a "model public medical service scheme" for providing persons insured under the act and others with medical attendance. No little time and trouble must have been spent by the committee who prepared the scheme, which consists of thirty-one clauses and is based upon a capitation system of payment. An alternative model based upon payment per attendance is also submitted. Many points affecting both doctors and patients are laid down, and rules which will be generally thought appropriate. But there is one weak point—the proposal tends to strengthen the British Medical Association and hand over all power to its officials. So much is the "model service" a duplicate of the association that anyone violating a rule or resolution of the branch (or division) with reference to conduct detrimental to the profession may be expelled from the service. Can it be imagined that the profession will allow the British Medical Association or one of its divisions to vote forthwith the ruin of any gentleman who offends its officials? The British Medical Association is, after all, only a trade union in its constitution and proceedings. The universities and licensing corporations cannot permit their degrees and diplomas to be liable to cancellation by a trade union.

Other schemes have been propounded for the formation of a State Medical Service and are being discussed by the public press. All necessarily include the discredited system of contract practice. To most practitioners this is exceedingly objectionable, but there are some who hold that, organized on the plan of the civil service, it would work well, and indeed such a scheme has long been successful in India. But the conditions there are very different.

Those who advocate a State system say, "Look at the army or navy, or even at the police force." Comparing disease to an invader, they declare we can no more eradicate it by a private adventure force than conquer the enemy by an unorganized mob. They say everyone can have the free choice of his doctor and the wealthier classes can employ the unattached practitioners, who cannot all be superseded. Then they would give good salaries and pensions to the State doctors and the public would be benefited by the linking up with hospitals and dispensaries, which is recommended as an essential part of a complete scheme.

Turning to the other side of the question, the opponents of State interference denounce all the schemes as rank Socialism, and assert, apparently in accordance with the facts, that the mass of the profession is opposed to anything of the kind. They argue that all contract practice is essentially bad, and, although to some extent necessary, as for the army and navy, it is desirable to confine it within the narrowest possible limits. Admitting that the contract system has succeeded as to medical officers of health, they urge that this service is special and very restricted, but pointing to the poor law service, which is extensive and a nearer approach to a general scheme, they ask, has that raised the status of the profession, or the contrary? It is certain that poor law appointments do not attract the best men and, as a rule, patients who can pay something rather avoid the "parish doctor." Would not the same feeling prevail in favor of the independent against the State doctor? Then the cost of the Socialist schemes might give pause to Parliament. Even Mr. Lloyd George told the profession it would be impossible to provide funds on the terms that had been named, but these later schemes would entail a much vaster expenditure. The existing system of independent practice has satisfied the public for generations, and only the restlessness of revolutionaries desires to alter it. It is said that the Government can crush the profession completely, scattering ruin throughout. But it is doubtful, and it is pretty certain the public would not permit such destruction for political ends of a class toward which it has only good will. Moreover, it is quite certain the Government could not suddenly supplant 20,000 educated practitioners by qualified competitors.

The grievances of nurses under the act were illustrated yesterday at a Harvest Festival given by the Lord Lieutenant of Berks to 500 visitors. He said that at the Royal Berks Hospital, of which he is president, whenever a nurse is ill she receives every possible care and attention. Yet both she and the hospital were compelled to contribute under this act, and their money would be thrown into the melting pot to help some other cause.

The effect of the anti-tuberculosis campaign on the race is the subject of a contribution to a morning paper extending over about two columns. The writer, who only appends initials (C. E. W.), refers to the ravages which the bacillus makes in any community in which it may be introduced, and to its hardiness and the difficulty of eradicating it. Yet he sees we have acquired, through ages of suffering, an immunity which has enabled us to build up a sturdy race, though persons whose immunity is imperfect still fall victims to the microbe. We cannot exterminate this nor can we exclude all sources of infection. What then, he asks, must happen? And answers, retrogression of racial immunity and another more immune race will supplant us as we are doing the Australians and New Zealanders, and by the same means—the tubercle bacillus. The writer seems to be an extreme eugenist and opposed to the campaign against tubercle as scheming to save infected or susceptible persons who will produce a more susceptible generation, involving greater suffering in the distant future, which, he says, is hardly a moral attitude. He sees only one hope that the campaign will not decrease the standard of immunity to too great an extent before natural selection, under some favorable concatenation of circumstances, intervenes and eliminates many of the susceptible persons who have been preserved. The experiment will be tried, but he thinks the more successful it proves the greater will be the number of susceptible children in the next generation, and they and the next will suffer in proportion.

When noticing, in my letter of the 7th inst., Sir J. C. Browne's address, I referred to his criticism of Prof. Karl Pearson, who repudiates the notion that "housing is at the root of tuberculosis." The professor has since taken exception to the quotations made, and so it may be only fair to refer to his reply, especially as he avers that the speech of Sir J. C. Browne is typical of the spirit against which he is fighting. He says we have no evidence to indicate why the tuberculous are found in poorer tenements, whether it is a result of a postphthisical economic failure of the bread winner or a prephthisical inferiority in physique or mental efficiency, leading to economic and constitutional breakdown. He remarks that one blames housing;

another, occupation; a third, constitution; another, contact in schools; and yet another, bovine infection. So he would discard opinions and try to find how these or other factors contribute to the observed result. Two points at least, he says, are obvious: (1) The death rate from phthisis was falling long before extreme sanitary activity became fashionable; (2) it has not been falling at an *accelerated* rate during the past fifteen years, when we have known all about the bacillus and have started sanatoria and dispensaries and proclaimed the "fight against tuberculosis." He would cry, "Light; more light," but would add, "Less talk; much less talk." He complains that Sir James made no attempt to meet his figures as to parental health and habit being 50 per cent. more influential on infantile death rate and delicacy than employment of women or housing of parents.

The third annual conference of the British Hospitals Association was opened yesterday at Birmingham. The Lord Mayor welcomed the assembly to his city and expressed a hope that the Government would realize the strong opinion of the public in favor of the doctors being well paid. They wanted, he said, no strict calculations as to what was the lowest living wage for a well educated medical man. Much fear was expressed that the Insurance Act would inflict injury on hospitals, and some speakers thought it might lead to the interference or even the control by the State.

About 400 members of the Sanitary Inspectors' Association assembled at the opening of their conference last week, at the University of Sheffield. The Report showed continual growth, the present membership being over 1,600. A 10th centre has been established in Bombay and the 11th in the Transvaal. The President, Sir Jas. Crichton Browne, delivered his address on Tuesday—subject "A Plea for Sanitation." He said however they might squirm under the vexatious requirements of the Insurance Act and its multiplication of officials, they could approve of the sanatorium benefit. But he admitted that before immense sums were spent on buildings it should be borne in mind that for half a century the phthisis mortality had fallen nearly 60 per cent., and if that could be maintained the disease would disappear in two or three generations—and the fall was due to sanitation in the widest sense. If sanatorium treatment alone were trusted or if funds were withdrawn from sanitation disappointment would result. The sanatorium was the ambulance to carry the wounded from the field—sanitation the guns and ammunition. Some said the tubercle bacillus is losing its toxicity—it is as venomous as ever. Others said the decline of tuberculosis was due to the survival of the fittest, those most susceptible having been killed off—a specious but unproved hypothesis. Many of the most gifted had been swept off by the disease and to rely on the gradual elimination of the weaklings was to sacrifice the most uplifting elements of human nature. After all housing was at the root of the question as doctors best knew and a few benevolent visitors. Institutional segregation for advanced cases giving off infection is an educational agency, but prevention is better than cure and a large proportion of cases can be prevented by reformed housing and others successfully treated in dispensaries. The campaign against tubercle must begin with babies. It must extend to cows and cowsheds. Also to schools, factories, workshops, offices and banks. All are at times incubation chambers for the bacilli. The eugenists were disappointed with sanitation and Prof. Karl Pearson assailed, and to his own satisfaction demolished, the most cherished sanitary beliefs, but it was as easy to question the existence of Sheffield, where he was speaking, as to doubt that alcoholism, one-roomed tenements, back-to-back houses, artificial feeding and other conditions had not swollen the rate while lessening any of these had diminished it. Sanitation ought to have preceded education, and the children fed before being crammed with knowledge. Eugenics offered no help to the education problem and if controlling the feeble-minded prevented the birth of a few imbeciles the effect would be trifling and the thorough-going theorist would still consign millions of people to the death chamber.

An international dental exhibition has been opened under the auspices of the Incorporated Dental Society. Instruments and appliances of all kinds connected with dentistry and illustrating its progress are on view. One specimen is supposed to be more than 100 years old, when dentures were carved in solid ivory and were very expensive. Artificial teeth are now made of all shapes and of many colors. British manufacturers supply various countries according to their tastes. Eastern peoples who chew betel nut want them to match the stains produced by that habit. In some parts the darker the stain the more is the native admired. The Parisians and some others admire white, and various shades between find favor. The shape, too, varies with fashion. Thus in some parts along the Mediterranean shores long, grayish teeth are in demand, while those exported to Sweden and Norway are lighter in tint and shorter.

THE SIXTH INTERNATIONAL CONGRESS OF OBSTETRICIANS AND GYNECOLOGISTS.

(From A Special Correspondent.)

INTEREST OF THE EMPRESS OF GERMANY IN THE CONGRESS — SOCIAL FUNCTIONS — PRESIDENT'S ADDRESS—VALUE OF INTERNATIONAL CONGRESSES —ELECTION OF DR. GOFFE—NEW YORK CHOSEN FOR THE NEXT CONGRESS—REACTION OF THE PERITONEUM TO SURGICAL INTERFERENCE AND BEST MEANS OF CONTROLLING IT—THE SURGICAL TREATMENT OF UTERINE HEMORRHAGE IN PUERPERAL CASES—UTERINE PROLAPSE—OPERATION FOR CARCINOMA UTERI.

BERLIN, GERMANY, September 9-13, 1912

THE Empress of Germany has attracted the attention and admiration of all Europe by her devoted interest in the hospital care and treatment of women and children. It was a pleasant augury of success, therefore, when the invitations to the Congress announced that it would have the patronage of her Most Gracious Majesty the Empress and Queen. This was the first meeting of the Congress on German soil, and her loyal sons were zealous in their efforts to make sure that the hospitality of their capital city should at least generously equal that of any of her predecessors. The arrangements for the meeting, both scientific and social, were most elaborate, generous, and appropriate. The Imperial Government courteously granted the use of the Herrenhaus (upper house of the Prussian Diet) for the scientific sessions, and the first general reception of the members of the Congress and of the accompanying ladies was given in its festival halls and garden. German custom in the

varied phases of life, from the most important government functions to the simplest domestic life, always makes ample provision for eating and drinking. It was, therefore, no surprise to find the Herrenhaus provided with facilities for this function.

The assembly room proved to be the inner sanctum of the great building, a room encased on all sides and on its ceiling with panels of yellowish brown wood and furnished throughout with the same, even to the desks and statuary. Here the Congress opened with a call to order by the President, Professor Bumm of Berlin, who proceeded to deliver the presidential address. He emphasized the value of international medical and surgical congresses as a means of disseminating the latest and best achievements of its members, submitting them to the judgment of its fellows, and sifting out what is valuable. By them is given the opportunity of studying the personality of men, their animating motives, and the soundness of their conclusions. Men like McDowell of America, the first ovariotomist, and Semmelweiss, who discovered the true nature of puerperal fever, were not appreciated by their contemporaries and had to battle long and hard for their ideas. In our custom of international conferences those men would not have been obliged to go through such ordeals. Every congress cannot announce an epoch-making discovery, but the stimulant to new and better work never fails. In a large sense, also, they make for understanding between peoples of different nationalities and the peace of the world.

Then followed the formal announcement of the program of the meeting. The Organization Committee, which had been in session for two hours, reported that a most cordial invitation had been extended to the Congress by the united gynecologists and obstetricians of all the national organizations of the United States and Canada to hold the next regular meeting in New York in 1915. The committee recommended the acceptance of this invitation and nominated Dr. J. Riddle Goffe of New York as President. Both recommendations received the unanimous approval of the Congress. Dr. Goffe in accepting the presidency expressed his appreciation of the signal honor that had been so unexpectedly conferred upon him and upon his country. There is no city, no nation, to which this Congress comes without bringing an irresistible impulse to renewed effort and better work. It is a great engine of progress. The speaker was therefore especially happy that his country was to be favored with this great uplift. The Congress could rest assured of a most cordial welcome and the best hospitality the country affords. Personal assurances were given by delegates from all the different nations that they were eager to come to America to see our hospitals, our laboratories, and our work.

The program of the Congress embraced two principal themes for discussion and one day's session for miscellaneous papers. The first theme was "The Reaction of the Peritoneum to Surgical Interference and the Best Method of Controlling it." This was presented in twelve elaborate papers, followed by a general discussion.

H. Brouha of Belgium said: (1) Mechanical irritation of the peritoneum is injurious; it should be reduced to a minimum, but should not be restricted to a degree that interferes with complete hemostasis. (2) The peritoneum should be dry cleaned; washing with solutions is more dangerous than useful. (3) The use of rubber gloves is a great advance. Masks and chin bandages for operator and assistants, the supervision of their hair and teeth, and the use of linen caps are essential. Unnecessary conversation is prohibited and also the wearing of a beard. (4) Leave the peritoneal serosa entire if possible; stumps and raw surfaces should be covered and hemostosis fully secured, (5) When drainage is necessary gauze is preferable to rubber, glass, or silver tubes. L. Meyer of Copenhagen said that dry cleaning is preferable except in cases of the escape of feces, particles of food, etc. A very strict cleaning especially for blood is not necessary. Drainage is useless if the process is not quite limited and shut off by adhesions. The "peritonization" of surfaces not sufficiently covered is necessary in order to prevent undue fixation or too great dislocation of intestines. Larger open spaces in the cellular tissue and raw surfaces of the pelvis are best drained by gauze through the vagina. K. Franz of Berlin remarked that every peritoneal wound is to be considered bacteriologically infected. It is impossible to conduct an operation entirely free from germs. In the majority of cases these are harmful, being either too few in numbers, lacking virulence, or being destroyed by protecting forces of the peritoneum. Strictest asepsis was necessary in order to obviate the above and protect against virulent varieties. We should use rubber gloves, paint the skin with iodine, and cover it with sterile cloths. The principal danger now is from the patient, necrotic ovarian tumors, decayed myomas, adnexal infection, germs from the cervix uteri, the bladder, and especially the intestines. The absorption of bacteria into the lymph system occurs most readily on the diaphragm. Large quantities of saline solution introduced into the peritoneal cavity or circulatory system are apt to dilute too greatly the bactericidal properties. Absorbable ligatures and suture material should be used. Make as small incisions as possible. Transverse incisions are better than longitudinal. In suitable cases vaginal operations are preferable to abdominal. As far as possible cover all peritoneal wounds. Cauterization of these surfaces is not advisable. Such eschars predispose to infection. Drain the peritoneum as seldom as possible. In pus cases drain with gauze by vagina if possible; otherwise use a Mikulicz drain."

H. Macnaughton Jones, London, presented a report compiled from the views of sixty-seven leading gynecologists of the United Kingdom. He said that lavage, tamponade, and drainage are at best necessary evils. Dry treatment is better than moist treatment and absorbable sutures and ligatures are best. A few, fearing tetanus from catgut, use silk exclusively. Asepsis is secured only by a complete hemostasis and careful peritonization of all exposed surfaces. The use of cyllin as a disinfector of the bowels after operation is recommended. P. Licine, Paris, said that one should choose wisely the moment and extent of operation. The use of sterile rubber gloves is advised. One should peritonize all eroded surfaces when possible. Resinilli of Florence, Italy, said that one should isolate as far as possible the field of operation. Rest and immobility of the parts after operation are important. Moist, warm compresses and sponges are preferable. Silk is preferable to catgut. The former can be sterilized with greater

certainty. Rubber gloves should be used and iodine should be applied to the skin. Operate rapidly, using incisions that are transverse and as short as possible. Use gauze strips packed concentrically for isolation of infected areas; remove them gradually. Secure perfect hemostasis, cleanse the cavity of all blood and other liquids. Injections of camphor oil are recommended.

B. J. Kouwer of Utrecht said that the operative technique is far more important than antiseptic measures. Drainage and tamponade are to be avoided. Do not stretch the abdominal wound by too strong reactors. The cellular tissue is more subject to infection than the peritoneum. Josef Lovrich of Budapest believes that one should examine the patient carefully and know her resistance before operating. Prepare her for the ordeal. Use catgut exclusively in the peritoneal cavity, and iodine for the skin. Never use the high Trendelenburg position. Ligate arteries singly. Peritonize all raw surfaces. For drainage one should employ iodoform gauze through the vagina when possible. In the latter case the gauze should be removed in seven days. Dry sponging is preferable. Open the bowels in twenty-four hours. Patient takes any position in bed that is desirable, but early getting up is not encouraged. Wertheim of Vienna emphasized the following points: (1) Avoid mechanical, chemical, or thermic injury. (2) Do the cleanest, dryest work possible, and cleanse the cavity of all tissue material. (3) Cover all defects of peritoneum with serosa. (4) Drain subperitoneal spaces with gauze *per vaginam*, if possible.

Herman J. Boldt of New York, in a brief paper, described his method of suturing and bandaging the abdominal wall in laparotomized patients, and his practice of allowing convalescent patients to sit up early. This paper was favorably received.

Oskar Beuttner of Switzerland presented a summary of his conclusions in response to individual questions. Twenty-nine colleagues use moist asepsis and 21 use the dry method with no apparent difference in results. Forty-five colleagues emphasize the importance of guarding the peritoneum from all injury; 5 think this care ought not to interfere with the rapidity in completing the operation. All practice careful "peritonization" of denuded surfaces; 44 wear rubber gloves; 6 indifferently, usually for self-protection in septic cases; 17 use catgut exclusively; 8 use silk or linen; 25 silk or catgut indifferently. For closing peritoneum and in septic cases iodine catgut is preferred. In clean cases and for intestinal suture fine silk is preferred. Fifteen use camphorated oil in the peritoneum to avoid adhesions; 35 do not. Most of the colleagues use a Mikulicz drain; some use strips of gauze or a cigarette drain; 37 emphasize their preference for vaginal drainage, especially after the Wertheim cancer operation. All insist upon the importance of the strictest hemostasis.

Racasens of Madrid believes that the essential elements of success in abdominal and pelvic operations are a rigorous aseptic technique, rapidity, the strictest hemostasis, and peritonization of denuded surfaces. Klotz of Tübingen called attention to the value of the infundibular extract of the pituitary body as a valuable therapeutic agent for the treatment of peritonitis. When injected in conditions of failing blood pressure it restores the latter to the normal for a prolonged time. Two cases are reported in which the extract was used successfully, resulting in the saving of life. Hochne of Kiel advocated injections of camphorated oil into the peritoneal cavity as a prophylactic measure in septic cases for the prevention of septicemia and toxemia. This injection can be repeated at the close of the operation if the irritative reaction from the first does not seem sufficient. In the Kiel Frauenklinik this treatment has been applied successfully in 250 cases in which the peritoneum was likely to be infected. No camphor intoxication or secondary adhesions have been noted. Hannes of Breslau advocated in desperate cases abundant gauze drainage of both the pelvis *per vaginam* and of the abdomen by the Mikulicz tamponade.

The second theme was "The Surgical Treatment of Uterine Hemorrhage in Puerperal Cases." Ten full papers were read and twenty-three participated in the discussion. Couvelaire of Paris presented concisely the present doctrines and practices of French accoucheurs respecting the surgical treatment of retroplacental hemorrhages and those due to insertion of the placenta on the inferior segment. This includes: (1) Direct surgical hemostasis by hysterotomy; (2) hemostasis realized automatically by the uterine muscle after evacuation of its contents by hysterotomy, abdominal or vaginal. French accoucheurs, in the treatment of placenta previa, remain faithful to purely obstetric methods. These are wide rupture of the membranes, and eventually the introduction into the widely opened cervix of the incompressible ball of Champetier de Ribes, or in default of the ball, simple turning, without extraction (Braxton Hicks.) The complete statistics recently published at Paris, Lyon and Toulouse render it possible to form an exact idea of the results obtained by this method. For women bleeding from a vicious implantation of the placenta the mortality during the past twenty years has been about 4 per cent. Infection and violence during evacuation of the uterus are responsible for three-fifths of the deaths. The extremely small risk of death from hemorrhage (1.2 per cent.) does not justify cesarean section, premature delivery, or the systematic practice of hysterotomy during labor. The fetal mortality oscillates with the obstetric methods between 44 per cent. and 60 per cent. Retroplacental hemorrhages and complex dystocia, cases in which there is some obstacle to delivery (contracted pelvis, fibroma, cervical cicatrices), and cases in which the previous methods have failed or in which infection or extreme anemia are present, may demand transperitoneal cesarean section.

E. P. Davis of Philadelphia opened the general discussion of this theme with a brief but concise and convincing paper in which he advocated, in appropriate cases, abdominal section and control of hemorrhage by manual compression of the abdominal aorta. Ph. Joung of Göttingen said that myomata causing hemorrhages during pregnancy are always situated in the cervix, and must be removed. When abortion occurs hysterectomy is indicated to prevent infection. Carcinoma uteri indicates prompt radical hysterectomy. Perforating lesions demand suture or hysterectomy. In extreme acute hemorrhages compression of the aorta may save life. Momburg's bags are best for this purpose. A. Mayer of Tübingen stated that the use of Momburg's bag is serious in cases of a diseased cardiovascular system. If the bag works imperfectly even in healthy cases a deadly hemorrhage into the veins may occur. O. Küstner of Breslau believes that the extraperitoneal cesarean

section is preferable to all others. It may be safely applied in infected cases. It offers better facilities for extraction of the child. Baumm of Breslau said that the extraperitoneal cesarean section cannot always be carried out. The peritoneum is ruptured in about one-third of the cases. But this operation is also about three times as safe for the preservation of life. It can be applied more safely also in infected cases, and insures greater safety to the child.

Among the miscellaneous contributions presented on the third day, of which there were fifty-three, read in abstract, the following may be mentioned: Heinrich Lopez of Valencia discussed "Uterine Prolapse." He attributed the embarrassment experienced by all gynecologists in selecting a method of operation to a lack of understanding the cardinal principles involved in the dynamics of the female pelvis. Landau's procedure deserves the preference because this surgeon extirpates the uterus, which is always useless and generally diseased. The operation is characterized by an incomplete hysterectomy, preserving only the isthmus, viz., the insertion of the sacrouterine ligaments. The muscular piece thus preserved serves as a center of resistance in the extraperitoneal cicatrix block. Landau's perineoplasty assures pelvic support.

J. Riddle Goffe of New York said that in dealing with cases of prolapsus uteri with attendant rectocele and cystocele, the important factor to be reckoned with is intraabdominal pressure. Neither the floor of the pelvis nor any conjunction of tissue can resist the direct action of this force by means of its textural resistance. Nature has supplied a system of deflecting planes, therefore, to receive, direct, and divert it. The deflecting plane that first receives the impact is the uterus with its broad ligaments. This must be preserved or an efficient substitute should be supplied if permanent results are to be secured. These are to be attained by shortening the uterine ligaments or, in extreme cases, by removing the uterus and substituting the plane of broad ligaments, preserving intact all the uterine ligaments and attaching them to it. The details of the operation were explained and results were given.

Arthur Stein of New York presented the present status in America of the operation for carcinoma uteri. The records at present are sadly incomplete, but the American contingent, with the increasing number of cases, are awakening to the demand upon them for greater care in the study of cases and their remote results. It is rather premature to attempt to draw reliable conclusions or give a complete picture of the situation. Still, as far as they went, the results were encouraging to the operators who were giving special attention to the disease.

Comparison of Simultaneous Polygraph and Micrograph Tracings.—F. S. Meara, T. H. Coffen and A. C. Crehore from a study of a number of tracings conclude that the delicate mechanism of the micrograph registers the movements in the heart and blood-vessels more accurately than does the polygraph. The inertia of the polygraph lever and diaphragm distorts the tracing. The difference between the results obtained with the two instruments is shown by the records made simultaneously with the micrograph and the polygraph. The micrograph is particularly useful for recording heart sounds. While the micrograph will not supersede the polygraph or electrocardiograph, the authors feel that it has distinct possibilities as a clinical instrument.—*Journal of Experimental Medicine.*

THE FIFTEENTH INTERNATIONAL CONGRESS ON HYGIENE AND DEMOGRAPHY.

(Special Report to the MEDICAL RECORD.)

VITAL STATISTICS IN THE UNITED STATES—BIRTH REGISTRATION—CLASSIFICATION OF CAUSES OF DEATH—THE TRAINING OF DEMOGRAPHERS—PARATYPHOID BACILLI—MARKET MILK—SCHOOL INSPECTION—MANAGEMENT OF TUBERCULOSIS IN SCHOOL CHILDREN—SOCIAL ASPECTS OF PHYSICAL DEBILITY AND MENTAL EFFICIENCY—IMMIGRANTS IN PUBLIC SCHOOLS—FOLLOW-UP SYSTEM IN SCHOOL INSPECTION—BACTERIA CARRIERS.

WASHINGTON, D. C., September 25, 1912.

IN the Section on Demography under the presidency of Prof. Walter F. Willcox, president of the American Statistical Association, Cornell University, Ithaca, N. Y., the first paper on the "Development of Vital Statistics in the United States Since 1900, and Measures Needed for the Immediate Future" was read by Dr. Cressy L. Wilbur, chief statistician for vital statistics, U. S. Census Bureau, Washington, D. C. He thought that the extension of the registration area during the past decade was largely due to the adoption of the "model law." The county systems had failed. American methods are best adapted to conditions in the United States and will ultimately yield fully satisfactory results. He said that the measures needed for the immediate future were active work for the extension of vital statistics throughout the South, more thorough enforcement of registration laws, especially the provisions for the registration of births; education of the American people in regard to the personal, legal, sanitary, and social importance of such laws, and greater utilization of the vital statistics now available; elimination of discrepant and worthless "statistics"; aid from the Children's Bureau, the American Association for the Study and Prevention of Infant Mortality, and the proposed Public Health Bureau; active co-operation by Congress with the States for the promotion of vital statistics.

Then followed the reading of several papers showing the work that was being done in certain States in the collection of statistics, among them one by Dr. Eugene H. Porter of New York on the Improvement in Birth Registration in his State. He said that at the present time only about 6 per cent. of the births occurring in New York State escaped registration, whereas in 1900 it was estimated that over 20 per cent. were not reported. It is hard to estimate the true birth-rate of any large municipality or State, but it is safe to say that the registration of deaths in the State of New York is practically complete, and that the registration of births is within 10 per cent. of being complete.

Dr. Peter H. Bryce, chief medical officer to the Bureau of Emigration, Department of the Interior, Ottawa, Canada, read a paper on the "Relation of Rural and Urban Populations as Shown by the Census in the United States and Canada to Public Health Problems." The figures he presented made it abundantly apparent that in Canada, even more than in the United States, in spite of every effort to place immigrants on the land, the total outcome of immigration had not equaled in rural increase the natural increase of the population of Canada in 1901 at a rate of increase of 12 per cent. in ten years. While the total population of Canada had increased 34 per cent. the total urban increase was 62.25 per cent. Some of his figures illustrated the relationship between slum population and insanity.

Dealing with prevention, Dr. Mott said: "If it can be shown that there is a correlation between insanity, tuberculosis, alcoholism, syphilis and overcrowding, in one-room premises, and insanitary dwellings in our large cities, it might be asked whether public money would not be better expended in solving the housing problem than in spending vast sums on sanatoriums and lunatic asylums in the hope of dealing with mental and physical degeneracy."

Dr. Jacques Bertillon read a paper on "Classification of the Causes of Death, Modifications Adopted in 1909, and Those Which May Be Necessary in the Future," in which he recalled the history of the question and said that this history should enlighten us as to the future.

Statistics require uniformity in figures which are intended to be comparable in different countries and at different periods. It has need, then, of lasting classifications. It cannot possess a lasting classification of the causes of death, if that classification is based upon the anatomical seat of diseases. In 1891 the International Institute of Statistics commissioned M. Jacques Bertillon to draw up one. M. Bertillon founded his classification upon the anatomical seat of diseases, endeavoring throughout to make his headings comparable to those of the chief nomenclatures then in use.

The American Public Health Association, having recognized the necessity for a uniform classification, has agreed to recommend that of M. Bertillon. But that the advances of science might not, in the future, find this classification to be antiquated and inacceptable, this association suggested that it be revised every ten years; the first revision to take place in 1900. This was done; and the second revision occurred in 1909. This nomenclature is to-day adopted by all the States of North and South America; by all the extra-European countries which compile statistics (notably by the British colonies and by Japan). Even in Europe it has been accepted by the entire western part of Europe (Great Britain, France, Spain, Belgium, Holland), and by several other countries (Austrian cities, Bulgaria, Roumania, Russian cities, and so forth). The tendency of a great many physicians is to revert in part to an etiological classification, because this appears to them more scientific. But a statistical classification is not designed to present a summary of general pathology; its aim is humbler, but more practical; it is to sum up as exactly as possible the thousands of always brief, and often incomplete, answers which physicians inscribe upon official death-reports. That is alone the object to be pursued. Beyond that, the statistical tables which present this summary should have as durable a form as possible. For these two reasons, the anatomical classification must be adopted.

In the afternoon the Training of Demographers was discussed. Dr. Eugene Würzburger, Director of the Royal Statistical Office of Saxony, Dresden, told how the great increase in the number of statistical offices and officers of recent years had led to such training being given at a number of the universities and other advanced schools by statistical lecturers and seminars, given regularly or at current intervals. A questionaire regarding the kind and object of such an education in higher institutions was now being organized by the German Statistical Society. It extended to other higher institutions lying outside the German Empire, in Austria and Switzerland. M. Lucien March, Director of the General Statistics of France, Paris, told how statisticians were secured in France, and Professor Walter Wilcox of Cornell University spoke of the demand for and the supply of them in the United States.

In the Section on Hygiene, Microbiology, and Parasitology the subject of paratyphoid-like bacilli, with special reference to their dissemination in nature and their relation to man and animals occupied the morning. Regierungsrat Prof. Dr. A. Weber read the first paper. Dr. Sacquepée, Paris, France, discussed the paratyphoid bacilli in their relation to animal foods. The animal foods most frequently affected are meats and milk. Infection of the meat may be present because the animal was infected by a disease caused by paratyphoid bacilli and may be unaccompanied by any appreciable lesions. In all cases it is septicemia which causes the most important phenomena. A meat primarily healthy may be infected after slaughtering. Man may contract infection either by direct contact or by ingestion. The prophylaxis to be aimed at is the isolation and disinfection of the infected person, the sanitary inspection of all persons having anything to do with the alimentary profession, the inspection of animals after slaughtering, the inspection of pork meat shops, and the education of the public as to the use of infected foods the possible danger from raw meats. Dr. John C. Torrey of New York considered the representatives of the Gärtner group isolated from the tissues of laboratory animals. He said an investigation into the etiology of canine distemper had disclosed the fact that the *B. enteritidis* was not infrequently present in the organs of dogs suffering from this disease. In a series of 90 distemper cases the bacillus was isolated from the tissues of 13 dogs, it having been found in one or more of the following localities, blood, lungs, liver, spleen, trachea, or nose. Bacilli, which were probably identical with the *B. enteritidis*, have been reported by a few others as occurring in dogs, but they have not been identified beyond placing them in the paratyphoid group. It would seem, then, that the importance of the dog as a source and locus of multiplication of the meat poisoning bacillus has not been recognized heretofore. The author's studies indicate that dogs dying from distemper may eliminate vast numbers of these dangerous organisms, and may be a source of infection for meat-producing domestic stock.

Dr. P. G. Heinman of Chicago read a paper on the "Examination of Market Milk" in which he said that the investigation of market milk made during the past months had for its aim the attempt to discover more precise methods of routine examinations of milk. The results do not warrant recommending a departure from methods practised at present in board of health laboratories. A few significant facts, however, are brought out by the investigation.

Examination of 215 samples of milk bought in the open market in original packages showed that pasteurized milk, as sold in Chicago to-day, is cleaner than raw milk. It contains less than one-fourth the number of bacteria contained in raw milk. This number would be much smaller, if pasteurization were universally of high efficiency. Methods of commercial pasteurization of milk are still in a stage of evolution, but development has progressed to a degree which will insure efficient pasteurization within a few years. The fact was also brought out that pasteurized milk turns sour the same as raw milk, the process being somewhat delayed. The

study showed that only the total number of bacteria can serve as an index of dirt in milk.

In the Section on Hygiene of Infancy and Childhood, "School Inspection" was the subject under discussion on Tuesday afternoon and Wednesday morning. Dr. Josephine Baker of New York considered the causes of malnutrition in school children, making reference to those caused by conditions in the home and those caused by conditions in the school. Dr. Walther Ewald, Frankfürt à M., Germany, spoke of the "Campaign against Infectious Diseases of Children." He said that all contagious diseases have either yielded to modern hygiene and the fight against epidemics or have at least been greatly affected by them, excepting infectious diseases of children, which in part only are true children's diseases. All cause great ravages among the children, so that far more die of these diseases than of all other infectious diseases combined; in comparison with these, the total number of victims of cholera and typhoid fever is far less. This condition prevails throughout Europe. The terrible effect of contagious diseases of children is disclosed not merely by mortality statistics, but by a general decline of young people. The battle cannot be the same as in other infectious diseases where we have to proceed against bacterial components. Exciting and disseminating agents are rarely found in children's diseases. In order to combat the diseases themselves special measures are necessary. The systematic campaign carried on in accordance with the usual means for combating epidemics has proved inefficient in Germany, and particularly in Prussia; no effort is made to combat measles and whooping-cough. In reference to the "Management of Tuberculosis Among School Children," Dr. Arthur T. Cabot of Boston said that in caring for feeble, anemic, undernourished children, those who might later develop tuberculosis, open-air rooms or indeed out of doors, with short hours of work and extra feeding, had given such excellent results that the open-air treatment of ailing children was now widely accepted and was being more and more widely adopted. Upon the whole, the hospital school was the best means yet devised for caring for the already tuberculous child. This afforded less isolation than a hospital and a nurse followed the child home and instructed the parents in preventive measures.

Dr. Isabelle Thompson Smart of New York read a paper on the "Relation of Physical Debility and Mental Deficiency to the Body Social," in which she presented facts showing that our pressing needs are: Greater latitude in the arrangement of the school curriculum; greater scope in, and application of, school hygiene; the need of an increased and more comprehensive propaganda in the instruction of mothers and fathers in the hygiene of daily life; the absolute necessity of more school clinics and more hospital clinics arranged at hours to suit the needs of the school child, instead of as at the present, during the hours of the school day; the urgent need of after-care committees to guard and protect —in so far as possible—the children who suffer in any degree from mental defect; the necessity for legislation to meet the present needs in the proper care of mental defectives and to prevent any reproduction of their kind; and the urgent necessity of the building of more colonies—in all our States—for the permanent care of aments. "The Relation of Teacher and Pupil, with Special Reference to the Education of Immigrants in American Public Schools" was the phase of the subject considered by Dr. William E. Chancellor of Norwalk, Conn. Observation at close range of boys and girls of forty-two races and nations through a period of four years, with a detailed study of 1,500 out of 4,000 in all seemed to indicate the following conclusions: (1) Brachycephaly, mesocephaly, and dolichocephaly in its two forms—Mediterranean and Teutonic—each has its definite temperamental meaning. (2) Certain races are precocious, others are normal or average and still others are altricious —each of these conditions makes a temperamental condition as its phase or result. (3) The food supply in each generation makes a difference to the hereditary temperament. Food supply must be considered with reference to quantity, quality, preparation, and time and condition of serving. (4) Certain other factors enter in but not in a large way. These are easily specified. (5) Sex concerns temperament vitally. (6) All the foregoing is to be applied both in the case of the pupils and of the teachers. Dr. Helen MacMurchy of Toronto, Canada, expressed the opinion that medical inspection of schools widens the teacher's horizon and brings the school room into the sphere of interest of modern preventive medicine. The average school child may be made a sanitary reformer and the teacher is the only one who can do it; the physician should tell her how. She spoke of the factors that militated against the health of the teacher and believed that medical inspection removed these. If we were to get the best results from medical inspection the teacher must be made to see that she would profit as well as the pupils. Dr. Thomas A. Storey told of the results of a "Follow-up" system in medical inspection. He said that in the department under the author's supervision an attempt had been made to secure a method of instruction in hygiene which will develop permanent health habits in the individuals that came under its educational influence. One phase of the work included medical inspection. He preferred to call it individual instruction in personal hygiene. Medical inspection became a part of the method of securing information concerning the hygienic needs of the individual, and a basis on which the individual must be given advice bearing upon his personal health problems.

The percentage of parents that refused to secure treatment for their children during the year ending June 1, 1911, was seven-tenths of 1 per cent., and for the year ending June, 1912, eight-tenths of 1 per cent, thus showing this method of medical inspection to be effective. It was securing the repair of physical defects and correcting unhygienic conditions in over 90 per cent. of cases under observation. It was improving the physiological efficiency of at least a thousand boys every half year. Professor Gustav Alexander of the University of Vienna entered a plea for the examination of the ears of school children.

In the Section for the Control of Infectious Diseases the morning session was devoted to the discussion of bacteria carriers, especially as to their influence in the dissemination of infection and as to the attitude which sanitary authorities should adopt toward them. Dr. J. C. C. Ledingham, Lister Institute, London, England, read an exhaustive paper on the subject in which he said that bacteriological researches during recent epidemics of enteric fever, of diphtheria, of cerebrospinal meningitis, and of cholera had shown that the clinical manifestation of an infection might vary widely from the classical text-book description, in fact it might be so mild

that it could only be detected by serological analysis. He discussed the practicability of examining all convalescents from typhoid fever before they left the hospital and of a continued surveillance of those who still carried the bacilli when they left. As to the treatment of carriers he said that none of the methods tried had proved entirely satisfactory and that there was need of further experimental work on animals with the object not only of discovering some effective means of sterilizing chronic carriers but also of finding some more rational method of treating those actually sick with the infection that would prevent their becoming carriers. He thought there was need of legislation which would enlarge the powers of health officials so as to give them power to prevent recognized carriers from engaging in employments which called for handling of milk or other foodstuffs. There should be some system of instructing chronic carriers as to the necessity of careful hygienic habits. As to the diphtheria carriers something could at times be accomplished by local treatment and in certain cases removal of the tonsils after giving an immunizing dose of antitoxin. He also brought up the question as to the virulence or non-virulence of the carrier. As to cholera carriers, he said that one-half of those cured of the infection continued to be sources of danger for from ten to fourteen days, while five or six in every hundred remained infections for more than twenty-five days. Of the latter one or two might continue to be carriers for two or three months. There were many difficulties in ship inspection and the bacteriological examination of excrements of passengers. Attention might also be called to the fact that there might be in certain cases intermissions in the excretion of specific germs. Dr. Charles Norris of New York said that at Bellevue Hospital they gave instruction as to hygiene to convalescent carriers when they left the hospital and then the Board of Health followed them up. In the routine examination of a series of 132 cases a year ago they found that 93 per cent. of the convalescents were free from the bacilli two weeks after they recovered. He thought that perhaps the ideal way to deal with chronic carriers would be to separate them in institutions. All who had had typhoid at any time might be regarded as suspects and all carriers should be excluded from occupations calling for the handling of food. This section spent the remainder of the morning in discussing the importance of flies and other insects as carriers of disease, Dr. Mesnil of the Pasteur Institute, Paris, France; Dr. L. O. Howard, Chief of the U. S. Bureau of Entomology, Washington, D. C.; Professor George H. F. Nuttall of Cambridge University, England; and Dr. Samuel T. Darling of the Board of Health of Ancon, C. Z., taking part.

Progress of Medical Science.

Boston Medical and Surgical Journal.

September 26, 1912.

1. The Filterable Viruses. A Summary. S. B. Wolbach.
2. Subphrenic Abscess. A. C. Heffenger.
3. Acapnia: Its Surgical Importance. J. F. Cotton.
4. A Case of Pellagra That Had Not Been Outside of New England for Eighteen Years. R. I. Lee.

1. **The Filterable Viruses.**—S. B. Wolbach states that one group of diseases caused by a filterable virus require entrance of the virus directly into the tissue through an abrasion or injury to the surface of the body. These are rabies, molluscum contagiosum, verruca vulgaris, chicken sarcoma, and probably trachoma, though it is possible that the last may effect a hold on a normal conjunctiva. Another group are transmitted by contact, which, of course, means contamination with infected material, such as discharges from the eyes, respiratory tract, surface lesions and excreta. These are: pleuropneumonia of cattle, cattle plague, distemper of dogs, fowl pest, fowl diphtheria, infectious stomatitis papulosa of cattle, and the infectious agalactia of sheep and goats. Contagious or possible "airborne" diseases with filterable viruses are sheep-pox, hog-cholera, measles, foot and mouth disease, variola and scarlet fever. The methods of transmission of guinea-pig epizoötic, guinea-pig paralysis, and Novy's rat disease are unknown. A number of these diseases, under which are included the most contagious, as foot and mouth disease, variola, sheep-pox, hog-cholera, measles, and scarlet fever, and others less easily communicated, such as rabies, trachoma, molluscum contagiosum, distemper of dogs, fowl pest and epithelioma contagiosum of fowl, have associated in the lesions cell inclusions which are more or less specific for the particular disease. Von Prowazek has given particular attention to these cell inclusions and has created for them the name "Chlamydozoa" in the belief that these inclusions are parasitic, a view held by comparatively few pathologists and bacteriologists.

3. **Surgical Importance of Acapnia.**—F. J. Cotton notes that hysterical hyperpnea may produce general acapnia of serious grade and that Henderson's observations on the loss of peristalsis from local acapnia, and on the restoration of peristalsis by remedying the acapnia, are directly applicable to man as well as to the laboratory animal. Acapnia of the general type is readily remedied if treated promptly by the surgeon. Local acapnia in laparotomies is easily handled, with little apparatus, without danger of infection, and not only without loss of time, but with a time-gain due to the easy handling of intestines which are in a normal, rather than in a distended or acapnic condition.

New York Medical Journal.

September 28, 1912

1. Dental Hygiene for the Pupils of Public Schools. S. A. Knopf.
2. The Putrefactive Products of the Intestinal Tract as an Etiological Factor in Chronic Disturbances. C. C. Sutter.
3. Further Notes on the Sanitary Control of Prostitution in Some European Cities. F. Bierhoff.
4. The Care of the Mentally Disturbed, Not Permanently Insane. T. A. Williams.
5. The Microscopic Findings in Twenty-four Cases of Malarial Hemoglobinuria. A. Woldert.
6. Treatment of Acute Staphyloma of the Cornea. P. J. Pontius.
7. Ten Sex Talks to Girls. J. D. Steinhardt.
8. Vaginal Cesarean Section Post Mortem. A. T. Hawes.

2. **Intestinal Putrefaction.**—C. C. Sutter points out that the important factors favoring the production of intestinal putrefaction are as follows: (1) Impaired metabolic processes and errors in diet. On a proteid diet the stools are neutral or alkaline, and contain ammonia, fatty volatile acids, ptomaines and leucomaines, aromatic oxyacids, phenol, and indoxyls, etc. On a carbohydrate diet these substances are greatly reduced in amount or are entirely absent. (2) Numbers of bacteria are taken into the digestive tract with the food, and from nose and throat disturbances. (3) Obstinate constipation. (4) Delayed absorption. (5) Insufficient mastication, improperly cooked food, food partially decomposed, or food containing preservatives. (6) The number, character, and activity of the saprophytic bacteria. These are increased in number and virulency by stasis of the fecal content and by alterations in the bile, gastric, and pancreatic juices which have an inhibitory influence. (7) Reactions of the contents of the intestines. Anaërobic albuminous putrefaction cannot take place in the small intestines and is very limited in the large intestine when the contents are normally acid. (8) Disturbances of the abdominal organs, such as gastroptosis with or without coloptosis, kinking, redundant or ptosed colon or sigmoid, chronic appendicitis, and par-

tial or complete occlusion of the common bile duct, with or without jaundice.

5. **Malarial Hemoglobinuria.**—A. Woldert has observed that in blackwater fever there is a reduction in the normal percentage of polymorphonuclear leucocytes, occurring within a few hours of the time of onset of the paroxysm of hemoglobinuria and persisting for several days subsequently. In all the cases of the author's series the large lymphocytes seemed to be increased from the time of onset of the paroxysm of hemoglobinuria to several days subsequently. It seems probable that this increase in the number of large lymphocytes indicates the malarial origin of the condition. During the course of malarial fever (especially a chronic case in which quinine has been given) there appear to be two different agencies operating, either one of which has the power of producing hemoglobinuria; these two agencies are the malarial parasite and quinine.

6. **Treatment of Acute Staphyloma of the Cornea.**—P. J. Pontius states that the adrenal active principle has no specific effect upon the corneal tissue, but it reduces staphyloma of the cornea by constricting the arterioles, thus relieving the pressure in the lymph areas, and in this manner causing the reduction of the intraocular tension and permitting the cornea to resume its normal form.

Journal of the American Medical Association.

September 28, 1912.

1. Cardiac Complications of Pregnancy and Labor. F. S. Newell.
2. A New Method of Treatment of Ulcer of the Stomach. J. W. Weinstein.
3. Hunger Pain. A. A. Jones.
4. The Unreliability of Unimportant Medicaments. W. A. Puckner.
5. Desirability of a More Restricted Materia Medica from the Standpoint of the Pharmacist. H. P. Hynson.
6. The Desirability of a More Restricted Materia Medica from the Point of View of Medical Instruction. E. LeFevre.
7. The Drugs We Need. O. T. Osborne.
8. The Word of the Committee on Useful Remedies. W. J. Wilbert.
9. The Treatment of Leucemia and Pseudoleucemia with X-Rays. A. Stengel and H. K. Pancoast.
10. Röentgen Treatment of Non-Malignant Lesions. R. H. Boggs.
11. Essential, or Primary, Lateral Sclerosis. J. H. Lloyd and S. D. W. Ludlum.
12. Reporting of Suspicious Cases by the Laity a Prerequisite to the Efficient Control of Communicable Diseases. M. Solis-Cohen.
13. Pathological Study of a Case of Acute Poliomyelitis. A. L. Skoog.
14. A Simple Operation for Repair of the Female Perineum, Based on the Anatomy of the Parts. W. B. Dorsett.
15. Negative Air-Pressure in Accessory Sinus Disease. Simple Apparatus Used in Frontal Sinus Empyema, with Report of a Case. W. H. Tomlinson.
16. Complications in Tabes Dorsalis. E. L. Hunt.
17. Congenital Absence of Both Clavicles. M. Reichmann.
18. A New Sphygmomanometer. E. J. Brown.
19. A Suggestion for Removing Sutures. J. R. Pennington.
20. A Clinical Note on Hyperhydrosis Circumscripta. R. L. Sutton.

1. **Cardiac Complications of Pregnancy.**—F. S. Newell states that while the strain of pregnancy is generally well borne by the normal heart, any organic lesion in this condition calls for constant watchfulness on the part of the medical attendant, even though it may be perfectly compensated under ordinary conditions. Pregnancy occurring in such a case, with imperfect compensation, calls for immediate emptying of the uterus, since the already disabled heart has no chance of sustaining the added burden. When failure of compensation occurs during pregnancy attempt should be made to restore it by rest and appropriate treatment, and if this does not succeed the pregnancy must be ended and future pregnancies be forbidden. In cases with demonstrated heart lesions, even if they have given no trouble during pregnancy, labor should be regarded with apprehension and every effort made to shorten it. A patient with a compensated organic disease usually stands operation well, but operation after failure of compensation will often be disastrous. A patient with organic heart disease and contemplating marriage should be warned as to the risks of pregnancy and labor, the prognosis in each case depending on the nature of the lesions, the age of the patient, and her previous history as regards the behavior of the heart under normal conditions. It is impossible to estimate accurately the efficiency of the heart-muscle after failure of compensation, since, although it may have been restored under treatment, death may occur suddenly before, during, or after labor. Labor should be shortened as quickly as possible whenever demonstrated organic lesions exist, although they have caused no unfavorable symptoms. In primiparæ the propriety of cesarean section, which may relieve the strain on the heart, may well be considered, especially with rigidity of the soft parts. Mitral stenosis calls for most careful observation. Any sign of failing compensation should be met promptly and if anything occurs accompanied by a rise in arterial tension the pregnancy should be terminated at once.

2. **Treatment of Gastric Ulcer.**—By J. W. Weinstein. (See MEDICAL RECORD, Vol. 81, page 1165.)

3. **Hunger Pains.**—By A. A. Jones. (See MEDICAL RECORD, Vol. 81, page 1166.)

9. **The X-Ray Treatment of Leucemia and Pseudoleucemia.**—By A. Stengel and H. K. Pancoast. (See MEDICAL RECORD, Vol. 81, page 1115.)

16. **The Complications of Tabes.**—E. L. Hunt discusses these complications and their treatment. The most extensive and all-embracing group of complications includes crises and the one most frequent of all is the pain crisis, for which the author advocates local measures and the simpler drugs, such as aspirin, pyramidon, salipyrin and codein. In the gastric type the most serviceable drugs are cerium oxalate in 5-grain doses every half hour, minute doses of strychnine, antipyrin and bicarbonate of sodium. The importance of urinary complications, which occur in about 90 per cent. of cases, has been underestimated. Among the unusual complications are the fractures and joint troubles. Perversions of the sympathetic function have been noted. The tabetic is especially liable to coldness of the extremities and capillary stasis. Delirium simulating alcoholism, and almost every variety of mental disorder may appear. A rarely mentioned but by no means unusual complication is morphinism. Hemoplagia, temporary or permanent, is not uncommon. A rare complication is that of progressive muscular atrophy.

The Lancet.

September 21, 1912.

1. Modern Problems Relating to the Antiquity of Man. A. Keith.
2. Vertebral Ankylosis: The Various Clinical Forms. J. Dardel.
3. The Nature of Pancreatic Diabetes. Preliminary Communication. F. P. Knowlton and E. H. Starling.
4. Some Unusual Contents in Hernial Sacs. A. E. Barker.
5. A Case of Retrogressive Tuberculous Meningitis. W. T. Brooks.
6. The Relationship Between Movable Kidney and Chronic Colitis. J. Liddell.
7. Perforating Appendicitis of Bilharzial Origin. H. T. Mursell.
8. The Intravenous Injection of Paraldehyde. H. L. C. Noel and H. S. Souttar.
9. The Technique of the More Extensive Abdominal Operations for Cancer of the Womb. F. J. McCann.
10. Jousset's Method of Demonstrating the *B. Tuberculosis* in Pleural Fluids. S. R. Gloyne.
11. A Review of the Congress of Alienists and Neurologists of French-Speaking Countries, 1912. R. Jones.

2. **Vertebral Ankylosis.**—J. Dardel discusses the following types of this condition: rhizomelic spondylosis, Bechterew's heredotraumatic kyphosis, osteophytic vertebral rheumatism, and deforming spondylitis.

3. **Pancreatic Diabetes.**—F. P. Knowlton and E. H. Starling report the results of their experiments which seem to indicate that the pancreas normally produces a hormone which circulates in the blood, and the presence of which is necessary in order that the tissue cells may be able to assimilate and utilize the sugar of the blood.

6. **Movable Kidney and Chronic Colitis.**—J. Liddell states that the frequent association of movable kidney and chronic colitis has been recognized by various observers, and most of them consider there is a causal relationship between the conditions. There is, however, a diversity of opinion as to the nature of this relationship. Debove and other observers hold the view that the ne-

phroptosis is not only a cause of enterocolitis, but is the most frequent cause. Others, again, hold the opposite view, and consider that nephroptosis is due to colitis. The frequency with which movable kidney occurs in cases of colitis is remarkable. Both kidneys may be movable, but that is not often the case; more generally it is one kidney, and in a large percentage it is the right one. The author has seldom seen a patient with nephroptosis who is not also affected with colitis, even in those in whom the loose kidney was attributed to an accident. The exceptions have been chiefly in cases of visceroptosis where the kidneys have become displaced along with the other viscera. Nephroptosis is a fairly common condition, and like enterocolitis it is much more common than many of the profession have yet realized. It is a troublesome complication in colitis, especially when the kidney is freely movable and floats about the abdomen or becomes fixed by adhesions.

8. Intravenous Injection of Paraldehyde.—H. L. C. Noel and H. S. Soutar find that the intravenous use of paralydehyde is practicaly safe as a hypnotic in cases of grave cardiac and pulmonary disease. They do not suggest that it can replace the slower but more lasting hypnotics, but draw attention to it as a method by which under the most trying circumstances they have never failed to induce within 60 seconds a condition closely resembling normal sleep.

British Medical Journal.

September 21, 1912.

1. Modern Problems Relating to the Antiquity of Man. A. Keith.
2. The Chief Use of the Peritoneum: A Suggestion. J. Howell.
3. Tuberculosis in Infancy and Childhood. From the Standpoint of Preventive Medicine. C. McNeil.
4. The Subjective Method for Estimating Blood Pressure. H. G. Armstrong.
5. Whooping Cough Treated by Intravenous Injections of Iodoform. T. W. Dewar.
6. The Contagiousness of Leprosy. J. W. Lindsay.
7. Strangulated Inguinal Hernia in an Infant. G. E. E. Nicholls.

2. The Chief Use of the Peritoneum.—J. Howell amplifies his theory of the use of the peritoneum. In addition to its well-known uses as a mechanical lubricator for the efficient movement of the intestines, as a lymph sac, as a secretory and absorptive gland, its greatest use is that of a perienteric trap for the reception and annihilation of microorganisms which constantly and normally—that is, without producing symptoms—permeate the intestinal wall. It is part of the duty of certain organs intimately connected with the peritoneal cavity, of which the liver, stomach, and intestines are the chief, to excrete the toxic products formed therein, including, in times of stress, the bacteria themselves, with the minimum risk of contamination to the remainder and more important parts of the body.

4. The Subjective Method for Estimating Blood Pressure.—H. G. Armstrong refers to the auditory method for estimating blood pressure. This was first introduced by Korotkow of St. Petersburg in 1905, and made known in England by Oliver five years later. Instead of using the finger on the radial pulse, a stethoscope is applied to the brachial artery at the bend of the elbow; on the return of the blood beneath the armlet a distinct throb becomes audible, which gradually increases as the pressure lessens, and then gradually dies away and disappears on the complete relaxation of the constricting band. The auditory method gives not only the high point—the systolic pressure very definitely—but it also gives the low point; under normal conditions the point of maximum throb is midway between these points, and this is generally accepted to be the indication of diastolic pressure. Since the author's attention was called to the auscultatory method, he has always employed it, finding it more accurate and comprehensive than the digital. He found, however, in taking his own pressure that he was able, with equal accuracy, to estimate by his own sensations the moment when blood commences to return beneath the armlet, and that at which, the pressure being entirely relaxed, there is no obstruction to the circulation. The throb which is audible through the stethoscope to the ear of the observer, is equally felt by the observed. With a little education the point of maximum throb can be determined. This method is called by the authors the subjective method.

Berliner klinische Wochenschrift.

September 9, 1912.

Severe Gestation Toxicoses.—Freund reports four cases of severe toxicosis at the close of gestation, the latter having been uneventful throughout. Two patients had manifest eclampsia, the cases ending fatally. In a third fatal case the cause of death is given as latent eclampsia. The fourth patient recovered and had no cerebral symptoms at any time. Not only this patient, but two of the others presented the picture of severe hematogenous icterus. In all the fatal cases there was acute hemorrhagic diathesis. The infant in the recovered case was born with evidences of a toxicosis, notably prolonged somnolence, but eventually rallied. The author is an adherent of the unicistic view, which assigns the morbidity of pregnancy to one single cause or cause nexeis. Attempts to estimate the severity of the toxicosis *intra vitam* by urinary studies are unsatisfactory. Autopsies alone throw light on these cases, and even then, owing to the great number of finds, the evolution of the malady cannot be fully traced. A diagnosis of latent eclampsia is hardly justifiable without autopsy. If we then find all the lesions of manifest eclampsia present the diagnosis is warranted. Authors have erred at times, says Freund, in representing severe toxicoses as something apart from eclampsia, when the latter was merely latent clinically. The writer has nothing to say of those fatal toxicoses which occur early in pregnancy, in which a diagnosis of latent eclampsia would be absurd. On the other hand, all toxicoses at term would necessarily be regarded on all sides as eclamptic in character.

Influences of Fetal Death on Pregnancy Nephritis.—Molinari sums up a case as follows: A secundipara in the seventh month of gestation with high degree pregnancy nephritis was admitted by the clinic with an eclamptic aura. The convulsions remained in abeyance, and on the seventh day, the fetus having been pronounced dead, the nephritis showed sudden improvement. The dead and macerated fetus was later expelled. It is, of course, possible that the sudden involution of the nephritis was a coincidence, but as the case stands the inference is warranted that the mother was being poisoned by some fetal metabolite, and that when the manufacture of the latter terminated with fetal death the mother promptly improved. There is no mention of parallel cases, although this case was treated in Prof. Bumm's Berlin clinic.

Menstrual Fistula.—Hirschberg reports two cases of this condition as follows: A woman, aged 23, who had borne children twice, was operated on for probable cystoma, the details being unknown. An abdominal fistula persisted, which discharged blood at each menstrual period. The fistulous tract was eight cm. long and was covered with bad granulations. The latter were curetted, the fistula drained with gauze and healing resulted. The other case was similar in character, the fistula having resulted from an operation for pus tube. Closure by simple measures has thus far failed. It is evident that in these cases the menstrual blood did not come from the uterine mucosa, and the inference at first would be that it was of tubal origin. The subject of tubal menstruation is not yet a closed chapter, and we do not know to what extent it is physiological. Any other supposition would require that this fistula blood represented a vicarious menstruation.

The author believes from the incomplete evidence that the blood reached the fistula from an opening in the tube.

Münchener medizinische Wochenschrift.

September 12, 1912.

Intraperitoneal Application of Camphor Oil.—Hirschol first mentions the current interest shown by gynecologists on this subject. Through multifold administration, improvements, etc., excrescences have developed upon the original idea which threatens to lead to its abolition. The author is convinced personally from his own experience of the excellence of this resource. In 1907 he recommended the 1 per cent. camphor oil in actual peritonitis upon the theory that the oil sealed up the lymphatic openings and thereby prevented the absorption of toxins. He is not shaken in his convictions by the adverse criticism. The peritoneal cavity is mopped clean of pus with gauze strips, the oil applied throughout and the abdomen closed down to the drainage tube. The amount of oil used may reach 200 or 300 c.m., but quite a percentage of this escapes before the abdomen is closed. The actual quantity of camphor in the oil is about 2.5 grams at the most. The camphor acts as an analeptic, and it is no longer necessary to inject it subcutaneously after operating. Nothing could be gained by increasing the amount of camphor. Hoehne and others, however, have used as high as 10 per cent. camphor oil in the belief that a reactive peritonitis is set up with destruction of bacteria. No toxic consequences have been noted, but delicate subjects have exhibited pallor, sweating, and even fainting. For this reason a return to weak concentrations has been urged, and none too soon, for very recently a death has been attributed to the 10 per cent. oil. The ability on the part of the oil of preventing adhesions has not been insisted on, but that it sometimes has this effect seems certain. Since these cases of peritonitis may end fatally autopsy evidences are forthcoming, and the author has thus been able to convince himself that the oil may prevent the adhesions. The fallacy of assuming that oil or any other influence can prevent adhesions is apparent in the fact that the latter do not always form if the case is left to itself. Quite recently Novak has sought through results of animal experiment to show that the oil prevents adhesions, but the opposite conclusion was forced upon him. Novak sought to eliminate the peritoneum by leaving the cavity denuded to a considerable extent, but adhesions still developed.

Epidemic Appendicitis.—Martin describes some experiences on a cadet school ship of the North German Lloyds Co. This was a sailing vessel which was making an extensive world journey. The first victim was a senior year cadet who developed a typical case, having already had one previous attack. Ten days later a classmate suffered from the same trouble, and not long afterward the third officer of the vessel was attacked. About five or six months later the fourth victim, a senior, was stricken, while patient number three had a recurring attack. Next a junior furnished still another case. There were in all six attacks on five subjects. The author was not prepared for operation and had to temphorize until suitable ports were made. There appear to have been no factors present which could have determined this cumulative incidence.

Deutsche medizinische Wochenschrift.

September 12, 1912.

Treatment of Insomnia.—Meyer gave a clinical lecture on insomnia in a neuropathic child, the result of measles. Insomnia, if actually what the name implies, suggests an oncoming psychosis. As a rule the condition called insomnia means really only diminished sleep. We may see insomnia of brief duration as a result of due causes. First we have to determine the limits of normal sleep. We see an evening type and a morning type under normal circumstances. The former is affected chiefly in childhood and the latter in adult life. Disturbed sleep without some causal factors in plain evidence is not common. A periodical visitation of diminished sleep is so common as to suggest a cyclical psychial disturbance, and this element may be found to be present in the absence of other efficient causes. The inability of neuropathic children to fall asleep may usually be traced to some exciting event which transpired during the previous day. In other cases insomnia may be traced to hallucinations or illusions upon falling asleep or dreams occurring after sleeping. For a somatic cause the presence of round worms suggests itself. Adults are much more subjected to peripheral factors which interfere with sleep, for these so often depend upon organic degenerative changes. So, too, the child insomnia is seldom traceable to tea, coffee, tobacco, alcohol, opium, etc. Insomnia is an important symptom of hysteria and neurasthenia. The general management of insomnia embraces in the first place hydrotherapeutic procedures or drugs. The first to be thought of are the antispasmodics, which means today the various preparations of valerian in the first place, while next in order and at some distance come drugs like asperin and pyramidon. Remedies which quiet petulant restlessness are superior to those which act directly upon the nervous centers, and the author regards the bromides as belonging to the former rather than the latter class. Some use may be made of all these drugs, while actual hypnotics are to be avoided save in absolute insomnia. When their use seems imperative two or more may be given in combination, which, according to Bürgi, can be taken advantage of in the interest of economy of dosage by giving one drug in the usual dose while the other is prescribed in a fractional dose. Alternation of a number of drugs is also a good plan to prevent cumulation and addiction.

Use of Hypophysis Extract in Weak Labor Pains.—Fries sums up the experience of the Greifswald obstetrical clinic with this oxytocic and also with its competitors as follows: The preparations of the hypophysis are dependable and safe, and indicated in the periods of dilatation and expulsion when there is no obstruction and no indication to terminate labor by operation. In the third stage it is not so dependable and ergot does much better. In missed labor and when premature delivery is indicated hypothysis preparations are not sufficient to induce labor alone, but may cooperate with other measures. In regard to the excitation of normal labor at term this is increasingly apparent the nearer the time of administration approaches that at which spontaneous delivery would set in. That the drug really brings about labor without actual assistance from nature seems evident from the fact that hypophysis labors seem considerably longer than normal ones; or, in other words, hypophysis preparations delay normal labor when given without indication. As already stated hypophysis extract is nontoxic and will combine readily with all other drugs given during labor. Unlike some authorities, the writer believes that the extract should be used by the family practitioner as greatly preferable to the "forceps for convenience." The author does not find that the extract lightens postoperative bladder troubles.

Fibrocaseous Tuberculosis of Glands in Neck; Caries of Dorsal Spine.—R. Hutchison reports the case of a man, aged 46, who twenty-four years ago had a large swelling in the neck which persisted for some months and then entirely disappeared. About a year ago he underwent an operation for fistula and shortly afterwards the swellings returned and have persisted since, although they vary greatly in size from time to time. He had never been aware of anything wrong with his back. Masses of enlarged fibrocaseous glands in neck. No enlarged glands elsewhere. Skiagram shows caries of two dorsal vertebræ. —*Proceedings of the Royal Society of Medicine.*

Insurance Medicine.

SUGGESTIONS TO MEDICAL EXAMINERS.

BY THE INSURANCE EDITOR.

THE URINE.

Résumé of the Steps in a Chemical Uranalysis.—Note whether clear or turbid; if the latter, find out to what it is due.

Take the specific gravity. If above or below the limits prescribed by the company interested, get another specimen and subject it to a complete chemical analysis.

Test the reaction with both blue and red litmus paper to determine whether it is acid or alkaline.

Test for albumin by the heat test. If this gives absolutely no reaction, the examiner may safely say that the urine contains no albumin. If it gives any reaction at all, test the urine then by Heller's test, letting it wait at least fifteen minutes if necessary. The use of the heat test is advised at first, for it requires only a few minutes and a negative reaction with it is conclusive. The examiner should state distinctly in his report to the company what he finds with each test if they give different reactions, even if he thinks that the reaction is due only to necleoproteid.

Test for sugar by one of the reduction tests, Fehling's, Haines', or Nylander's. If no reaction is obtained, it is certain that the urine contains no sugar of clinical importance. If a reaction is obtained with one of these tests, it should be corroborated by fermentation, as a positive reaction with the latter is conclusive. If, however, a negative reaction occurs with fermentation and a positive reaction with a reduction-test, the examiner should state the full findings in his report to the company.

MICROSCOPICAL EXAMINATION OF THE URINE.—The clinical significance of red blood cells, leucocytes, and renal casts depends largely upon the number of these bodies, whether they persist or not in being present, and the cause; also the age, personal history, and condition of the applicant. A few red blood cells or leucocytes will often be overlooked if they are not indicative of some serious or chronic trouble. Considerable judgment is required in determining the value of renal casts as a sign of present or impending disease.

Mucous cylindroids must be distinguished from true casts, and this differentiation is quite difficult at times. While it is possibly true that they appear as the result of some very slight irritation of the renal tissues, their presence is usually disregarded.

Hyaline casts are often found in the urine of healthy persons, probably as a result of errors in diet or drinking, or exercise. Under these conditions, they should quickly disappear. A too frequent reappearance, even under these circumstances, should arouse suspicion. On the other hand, these bodies are the first to appear in disease as an indication of commencing irritation or congestion of the renal tubules.

Granular casts, if present, will almost always lead to rejection on account of the well-known fact that they indicate more advanced lesions in the renal tissues.

The medical officers cannot fairly estimate the significance of these doubtful bodies in the urine, unless the reports are made by men whose ideas are harmonious with those held at the home office. All microscopical examinations are therefore made either at the home office by men trained for this work and with the most approved apparatus and facilities, or at certain points by selected representatives who have taken a course of instruction at the headquarters of the companies.

Microscopical examinations of the urine are required only in cases in which there is some indication or when the amount of insurance is large enough to warrant this extra precaution.

NOTE.—The methods and technique of uranalysis presented in these columns are, aside from a few modifications, recommended in its book of instructions to examiners by the company which the writer represents, and have been found most reliable and simple after many years of experiment and practice.

Attitude of the Medical Director Toward the Agency Department.—P. O. Gold sketches the attitude which, in his opinion, the medical director should assume toward the Agency Department. He points out that the medical director is dependent upon the agency department for his livelihood. Yet, he must be a restraining influence like the flywheel of an engine which, though turned by the motive power of the engine, restrains the same power. In the medical director's attitude toward the getting of business he should take into consideration, first, the company's interests, remembering not only the question of individual hazard, but also the class of business, the ability of the applicant to pay his premium, the territorial conditions, and the standing of his local examiner. It would be better for the company if more advances were made by the medical department and less by the agency department. The attitude of the medical director toward the agency department should be one of education. Errors of the agent should be immediately called to his attention to prevent a repetition. Loss to the company is thereby prevented, the agent appreciates it, and tries to prevent a similar mistake in the future; or if he does not he should be eliminated. —*Second Mid-Year Meeting of the Medical Section of the American Life Convention.*

The Value of Uranalysis at the Home Office.—James W. Guest, thinking that the heat and acid test is not wholly reliable when but traces of alumin are present in the urine, as medical director of the Commonwealth Insurance Company decided to adopt a "home office uranalysis." In putting this system into use, two serious obstacles presented themselves. First, Dr. Guest knew from his personal knowledge as an examiner that oftentimes only small quantities of urine could be secured from applicants, and that he could ask for only a very small amount of the specimens collected by the examiners for home office uranalysis. Second, that postage would become a large factor unless it could be reduced to a minimum. After experimenting for several days with office associates it was found that a thoroughly satisfactory uranalysis for both albumin and sugar could be made with only fifteen or twenty drops of urine. To meet the above requirements a glass dram vial filled with urine and a papier maché container weighed in all one and one-half ounces. The container required only one cent postage. However, two-cent postage, first class, was substituted, as after giving the one-cent postage a trial it was found that the specimens were delayed on account of being second class mail. The tests used are Roberts' solution for albumin and Haines' solution for sugar. Dr. Guest is of the opinion that the plan should be generally adopted.—*The Lancet-Clinic*, July 27, 1912.

Book Reviews.

QUAIN'S ELEMENTS OF ANATOMY. Eleventh Edition. Editors: EDWARD ALBERT SCHÄFER, LL.D., Sc.D., M.D., F.R.S., Professor of Physiology and History in the University of Edinburgh; JOHNSON SYMINGTON, M.D., F.R.S., Professor of Anatomy in the Queen's University of Belfast; THOMAS HASTIE BRYCE, M.A., M.D., Professor of Anatomy in the University of Glasgow. In Four Volumes. Vol. II., Part I.: MICROSCOPIC ANATOMY. By E. A. SCHÄFER. With 1001 engravings and 21 colored plates. London, New York, Bombay, and Calcutta: Longmans, Green & Co., 1912.

THIS eleventh edition of Quain's Anatomy, now being published, is in almost all respects an improvement on former editions. The only point in which the older editions were superior to the present was in the publication of bibliographies throughout the series. However, Schäfer's volume is complete in this respect also and is undoubtedly the fullest and best work on histology ever published in Great Britain. In fact, the work is almost too full, that is to say as a text book for students, for its size and the manner in which it is put together convey the impression that the author believes in the student making of histology a study separate from that of gross anatomy, whereas, for practical purposes they should be studied together. However, so far as the volume itself is concerned nothing but praise can be given. The illustrations of human tissues and organs are by Schäfer himself and are excellently reproduced. In writing on the protoplasm of the cell, mention is made of Hardy's work in this connection and in all instances the embryonic derivation of the various tissues and organs is described and discussed, a matter of very considerable importance. Professor Gustave Mann of Tulane University, New Orleans, deals with the structure of the vascular system and provides some very interesting reading with regard to the lymphatics. The book is worthy of the reputation of Professor Schäfer and this should be praise sufficient.

SURGICAL AFTER-TREATMENT. A Manual of the Conduct of Surgical Convalescence. By L. R. G. Crandon, A.M., M.D., Assistant in Surgery at Harvard Medical School; Assistant Visiting Surgeon to the Boston City Hospital; Consulting Surgeon to Frost General Hospital and to Woonsocket Hospital; and ALBERT EHRENFRIED, A.B., M.D., Assistant in Anatomy at Harvard Medical School; Surgeon to Mt. Sinai Hospital; Surgeon to Boston Consumptives' Hospital, etc. Second Edition, thoroughly revised. With 265 original illustrations. Price $6.00. Philadelphia and London: W. B. Saunders Company, 1912.

THE cordial reception which greeted the first edition of this book cannot fail to be accorded to the revised form in which it now appears. The general practitioner no less than the surgeon can appreciate the importance of a safe guide in conducting the postoperative care of surgical cases. This book was written primarily for house surgeons in hospitals and general practitioners in communities which are not surgical centers. There is no reason why the general practitioner even in large cities should not be entrusted with the after-care of his surgical cases. He should be familiar with the management of postanesthetic vomiting, postoperative gastric dilatation, and with the virtues of the Fowler position, enteroclysis, etc. This volume presents in satisfying detail, with the aid of numerous illustrations, a description of the after-treatment for all of the common surgical operations. Such measures as massage, electrotherapy, *x*-rays, and radium therapy are accorded considerable attention. The subject of therapeutic immunization and vaccine therapy is presented in an admirable manner and with ample regard for the practical needs of the physician, by George F. Sanborn. The volume may be recommended without reserve as one supplying adequately a distinct need in the physician's library.

SYMPTOMS AND THEIR INTERPRETATION. By JAMES MACKENZIE, M.D., LL.D., Aber. and Edin.; Lecturer on Cardiac Research, London Hospital; Physician to the Mount Vernon Hospital; Consulting Physician to the Victoria Hospital, Burnley; Author of "Diseases of the Heart," "The Study of the Pulse, Arterial, Venous, and Hepatic, and of the Movements of the Heart," etc. 2nd Edition. Price 7/10. London: Shaw & Sons, 1912.

THIS book has a value apart from the importance of its theme. Based solely upon the author's observations and not upon what others have written or copied from those who had gone before them, the subject-matter of this volume is eminently original. The statements are based upon what the author has noted at the bedside or in the consulting room and what in many instances he has been able to confirm at autopsy. The main theme is the author's conception of visceral pain. According to this theory the viscera are insensitive to stimulation, all so-called visceral pain being referred to the sensitive tissues of the external body wall. In detail the author discusses the various organic reflexes causing vomiting and dyspnea, the secretory, the cardiac, and the vasomotor and pilomotor reflexes; and the laws determining the nature of reflex symptoms. There are separate chapters on the preliminary examination of the patient, on symptoms of affections in the region of distribution of cerebro-spinal nerves, on affections of the digestive organs, on the liver, gall-bladder and ducts, on the great and small intestine, on affections of the urinary system, on affections of the female pelvic organs, on peritonitis and peritoneal adhesions, on affections of the lungs and pleura, on affections of the circulatory system, and on the estimation of the value of symptoms. This work is epoch-making in its originality.

A TEXT-BOOK ON GYNECOLOGY. By WILLIAM SISSON GARDNER, M.D., Professor of Gynecology, College of Physicians and Surgeons, Baltimore, Md. With one hundred and thirty-eight illustrations in text. New York and London: D. Appleton & Company, 1912.

IN this work a greater amount of space is given to the diseases that are common and with which it is essential the student should be familiar. Many of the rare diseases are treated very briefly and the subjects that really belong to general surgery have been omitted. The limited time of the overcrowded medical student has been taken into consideration. The subjects are treated in a very concise manner, and if any fault is to be found it is in the lack of space given some of the subjects. Including the index the book has 286 pages; the type is large, a fact that medical students who read so much by artificial light will appreciate. We recommend the book to medical students but not to the general practitioner, who would find it too elementary.

SURGERY OF DEFORMITIES OF THE FACE, INCLUDING CLEFT PALATE. By JOHN B. ROBERTS, A.M., M.D., Professor of Surgery in the Philadelphia Polyclinic, Surgeon to the Methodist Hospital; Formerly Assistant Eye and Ear Surgeon to the Children's Hospital, and Demonstrator of Anatomy in the Philadelphia Dental College. Illustrated with 273 Figures. Price $3.00. New York: William Wood & Company, 1912.

THE appointment to deliver the Mütter Lectures of the College of Physicians of Philadelphia for 1909 induced the author of this excellent treatise to give increased attention to the operative correction of facial deformities. This lectureship was established by Thomas D. Mütter, the Philadelphia teacher, who had played such an important part in the early history of plastic surgery. These lectures form the basis of the book. In the fifteen chapters, consisting of 259 pages, there are considered the development of plastic surgery, a survey of the anatomy of the face, characteristics of surgery of the face, the principles of plastic surgery of the face, gunpowder and local discolorations, tattooing, fistules, fissures, encephalocele, atrophy and hypertrophy, disfiguring skin diseases requiring surgical treatment, deformities of the mouth and lips, harelip and other facial clefts, cleft palate, cheiloplastic operations not connected with harelip and cleft palate, deformities of the external ear, deformities of the nose, rhinoplasty and deformities of the eyelids and eyeball. Any who may be called upon to treat any of the subjects above enumerated cannot afford to be without this volume. The book is well illustrated with diagrams, photographs, skiagrams, and many drawings which are of great aid in getting a more perfect understanding of the text.

THE LOCAL INCIDENCE OF CANCER. By CHARLES E. GREEN, F.R.S.E. Price, one shilling. Edinburgh and London: William Green & Sons, 1912.

THE writer of this small brochure has taken pains to collect various statistics of cancer mortality in England and Scotland, and to examine the localities where cancer incidence and cancer mortality appeared either very much higher or lower than the average figures. He claims that the mortality was high in regions intersected by gulleys and valleys, and low in comparatively flat regions. He considers that the topography is not directly responsible for the difference in cancer incidence, but indirectly through its influence upon ventilation and the carrying away of the products of combustion of coal and gas. The brochure is certainly of interest, though, of course, it cannot be convincing from the very obscurity of the subject dealt with.

Society Reports.

AMERICAN CLIMATOLOGICAL ASSOCIATION.

Twenty-ninth Annual Meeting, Held in Hartford, Conn., June 10, 11, 12, and 13, 1912.

(Special Report to the MEDICAL RECORD.)

THE PRESIDENT, DR. A. D. BLACKADER OF MONTREAL, CANADA, IN THE CHAIR.

Monday, June 10—First Day.

Presidential Address.—Dr. A. D. BLACKADER of Montreal, Canada, expressed his appreciation of the honor conferred upon him in electing him as their presiding officer; he felt that the honor was not for himself alone, but must be regarded as another instance of the generous and courteous spirit shown at all times by the profession in the United States to their confrères in the Dominion lying to the north of them. Dr. Blackader spoke of a phase of the climate in Canada, the advantages and disadvantages of the steady cold winter in the treatment of some forms of disease. While it must be admitted that the winter months were long and severe, yet many found the climate stimulating and with health-giving properties; the steadily severe, but dry cold, of northern Canada, and especially of the Laurentian plateau, conferred a vigor not to be obtained elsewhere. Only to a few perhaps was the thought of a sharp frosty air, and a temperature at zero, or many degrees below it, an inspiration. Unfortunately to most of them a cold temperature in southern regions was almost invariably associated with much moisture in the air, and it must be acknowledged that cold with moisture was extremely depressing to the general vitality and strongly predisposed to irritable conditions of the upper and lower respiratory tract. They had no stronger or hardier immigrants than the Norseman or Scotch Highlander. Cold climates in which the air was dry were still more stimulating and, provided that the body heat was maintained by warm clothing and a proper supply of food, a keen frosty air induced in the sufficiently vigorous the maximum physiological reaction with much increase of muscular energy, provided the cold was not so intense as to altogether overpower the resistance of the system. The effect of cold air on the body was twofold. First, there was an actual extraction of heat, which was rarely desirable, and so far as possible should be prevented. In cold air, the body lost heat to a slight extent by evaporation and it perhaps lost a little more by radiation, while by conduction the amount lost was often very great, and was dependent upon the rapidity of the movement of the air and the amount of moisture it contained. Much more important, however, from a therapeutic standpoint, than the mere abstraction of heat from the body, was the stimulating action of the cold on the delicate sentient nerves of the periphery. Under the effective stimulation of the cold air, both respiration and circulation were strengthened, oxidation was increased, and nutrition became more active. In addition to the action on the cutaneous nerves, a powerful stimulation was also conveyed to the medullary centers by the effect of cold air on the nasal mucous membrane. Cold had also remarkably stimulating action on the digestive system, provided it was not excessive. As a rule, the appetite and digestion were better in the cold dry days of winter than in warm weather. Cold also appeared to stimulate the blood forming organs. As a result of this stimulation to oxidation and nutrition, the innate resisting powers of the body against toxins and its ability to respond protectively to the assault of infection was greatly increased. The benefit to be obtained from cold, however, depended upon the power of the individual to react, and this power varied greatly with different individuals and appeared to be in a great measure dependent on vasomotor tone. Dr. Blackader's experience led him to the belief that all those who suffered from any interference with the free passage of air through the nostrils did not react well to cold temperatures and gained but little benefit during the winter season. Also in inflammatory conditions of the larynx and trachea cold air might act as an irritant and do harm. Individuals suffering from organic diseases of the circulation as a rule stood cold poorly. To benefit from a winter in the north the intestinal tract and the kidneys should be in good working order. Extreme cold was not desirable for those suffering from gout, arthritis, or neuritis. For those suffering from advanced degeneration of any organ, for those advanced in years, and for the very young, extreme cold might be distinctly harmful. It could not be too strongly emphasized that all the benefit to be derived from a residence in the north would depend on the completeness with which an outdoor life was lived. Cold of not too severe a character was of distinct advantage to children over three or four years of age and to those children who breathed freely through the nostrils. Many of his patients, children of tuberculous parents, who were anemic and who suffered from enlarged glands with impaired digestion, were greatly improved by a winter spent in the Laurentian plateau. No other place that he was acquainted with presented so many advantages as a winter resort, with a steady cold, dry climate, as the Laurentian plateau. The great depth of snow buried all impurities and any added refuse was quickly hidden and rendered harmless by a fresh snow covering. All noxious evacuations lay dormant until the spring, and were then quickly carried off by the rapid flow of water. The daily variation in temperature rarely exceeded 15 degrees.

Physiological Observations on Pike's Peak, Colorado, Made in the Summer of 1911.—Professor YANDELL HENDERSON of New Haven, Conn., said that the heart rate was somewhat accelerated even during rest, and greatly accelerated by exercise, but arterial pressure was not considerably changed. The hemorrhages formerly noted were a myth. Respiration was considerably augmented by even moderate exercise. The red corpuscles were increased 30 or 40 per cent.; the total volume of blood, however, was unchanged. The most important element of acclimatization to low barometric pressure was the development by the lungs of a capacity to secrete oxygen from the alveolar air into the blood, thus compensating in part for lessened diffusion because of the low oxygen pressure in the atmosphere (elevation, 14,147 feet).

High Altitude and the Blood.—Dr. W. A. CAMPBELL of Colorado Springs, Colo., read this paper and drew the following conclusions: (1) The study of the blood had been a difficult one, subject to many corrections, owing to the variation in its component parts in the daily walks of life. (2) The study of the blood changes at high altitudes was attended by many additional intricate problems owing to the changed climatic environments and the inaccessibility of places of observation. (3) Altitudes increased the erythrocytes, hemoglobin, and leucocytes, thereby furnishing three of the most important factors in the building up of a stronger resistance against the infectious diseases. (4) The heart acted faster and the pressure was lower which tended to strengthen the cardiac muscles just as exercise of the general muscular system strengthened the individual as a whole. Caution must be enjoined in the beginning that the muscles be not overworked. (5) The lack of oxygen and the consequent increased respiratory exchange caused a more rapid metamorphosis of tissue, thereby aiding materially in throwing off morbid processes. The same condition prevented stagnation of secretions and brought into action portions of the lung unused at lower altitudes. (6) A study of blood conditions at high altitudes ought to convince any unprejudiced, financially uninterested individual that altitude was not a fake. And, by the application of the knowledge gained in its study, many clinical cases could be selected that would be materially benefited by a change to a high altitude.

Dr. JUDSON DALAND of Philadelphia said that these questions had excited interest for years, and after hearing a discussion some years ago he and the late Dr. Solly determined to go to Pike's Peak and make some observations. Dr. Solly suffered no discomfort and was able to walk about freely and easily while he himself had cyanosis of the lips and a severe headache, which disappeared when he returned to Colorado Springs. They remained on the Peak for four hours and no especially bad effects were noticed in that time. Microscopically the number of red blood corpuscles was increased, but there was no morphological change in the blood. There was no apparent leucocytosis. Changes in the readings of the hematometer were so slight as to be insignificant. They had also made observations on two brothers, aged twenty and twenty-nine years respectively, who had become acclimated. It seemed to him that two important points were brought out: First, the value of physiological functioning on the part of the alveolar cells to secrete oxygen, and, secondly, that there was no leucocytosis. When one went to an altitude of more than 2,000 feet one experienced a most remarkable and extraordinary air hunger.

Dr. HOAGLAND of Colorado Springs said that the effect of high altitude on the blood was a subject of great importance. In experimenting with the blood on Pike's Peak, he had time and again noticed that when the timber line was passed half a dozen persons on the car would turn pale. He had seen the color return within two minutes and the individuals be able to eat. He had obseved many people from the East with valvular heart disease. Altitude helped certain cases of weakened heart muscle. When there was a defect in contractility, then any

change in altitude was contraindicated. In conditions of weak heart alone, patients did as well in high altitudes as elsewhere. The second point Dr. Hoagland wished to emphasize was that the impression in the United States that mortality from pneumonia was high in high altitudes was a false one. A comparison of statistics showed that the mortality was no higher. Many had insomnia on Pike's Peak. There was an increase in the capacity of the chest when one went to a high altitude. Dr. Hoagland said his chest measured 35 inches when he went to Colorado Springs, while now it measured 41 inches.

Dr. Fox C. Gardiner of Colorado Springs reported the case of a patient who had pneumonia and was sent down 5,000 feet, but did not improve. Dr. Sargeant, on his first trip, could not breathe well, but on his next trip he took a dose of calomel and had no difficulty in breathing. Dr. Gardiner said he agreed with what Dr. Hoagland had said in regard to heart trouble. He cited the case of a man who was told he could not live on account of heart trouble; this man went up 8,000 feet and lived for many years.

Dr. DeLancey Rochester of Buffalo, N. Y., said that altitude caused an increase in the percentage of hemoglobin and in the number of red and white blood cells. There was a dilatation of the peripheral capillaries. There was an increase in the polymorphonuclears, but not in the lymphocytes.

Dr. F. M. Pottenger of Monrovia, Cal., said there was a possibility of their drawing wrong conclusions from these physiological inquiries. The important point was that when they went higher there was an increase in the component parts of the blood and this was necessary to maintain the individual. Dr. Pottenger said he practised at a low level and received patients from higher levels and he found that the patients were benefited both ways. Clinically the best observations were those of Dr. Henderson, which referred to the development of the lung capacity to secrete oxygen from the alveolar air into the blood.

Dr. A. J. Richer of Ste. Agatha des Montes, Province of Quebec, said there was no doubt but that the blood changes were due to the struggle for adaptation. When sending a patient to a high altitude there was no doubt but that there resulted an extra amount of exercise in this effort at adaptation.

Dr. Carroll E. Edson of Denver, Colo., said that, when a splitting headache occurred, they should remember that frequently it was bilateral, and it would be interesting to know whether a case of frontal or bilateral headache was due to an unrecognized collection which drained from the frontal sinus. It was difficult to state whether this was purely a circulatory phenomenon. The question of secreting oxygen from the alveolar air into the blood had not been proven in his opinion. Could not the balance of oxygen be maintained in the blood by quickening the power of the right side of the heart?

Dr. A. W. Jayne of Denver, Colo., said that the observations made on the blood explained many things that hitherto they had been unable to prove clinically. He went to Colorado in the early eighties on account of his health and practised medicine at an altitude of from 9,000 to 11,000 feet. To his surprise he found that surgical wounds healed with great kindness, a large proportion by first intention. Fractures got well promptly. He had greater success in acute surgery than was ever seen in New York City. Good and quick recoveries were seen in all acute diseases. He could not explain these surprising results on purely physical grounds. Many cases of pneumonia at mining camps were fatal, but this was explained because of the unrestrained lives of the men, many of them developing pneumonia after a period of intoxication.

Dr. Robert H. Babcock of Chicago said that when a patient with heart disease asked him if it was advisable to go to a high altitude he did not know just what to answer. He usually answered, however, even when the patient had a manifest cardiac lesion, "Yes, if you keep quiet." He also told such patients that if they suffered from dyspnea and tachycardia to keep quiet for a few days or a week until they became accustomed to the altitude. In all probability they would not suffer after that.

Dr. Yandell Henderson of New Haven, Conn., said he did not think the bilateral headaches in these cases were due to sinus trouble. The critical line was from 6,000 to 10,000 feet. With regard to the term lymphocytes, that was Dr. Webb's. He was responsible for the idea of increasing the lymphocytosis as a factor in combating tuberculosis. In regard to the respiratory change, no more carbon dioxide was gotten rid of at a high altitude than below, but the intake of oxygen was greater; however, to get rid of it the patient had to work harder.

Dr. W. A. Campbell of Colorado Springs, Colo., in closing the discussion said he did not mention lymphocytes in his paper, but leucocytes. Polymorphonuclear leucocytes were what they wanted to develop. He agreed with what Dr. Pottenger said about physiological compensation. At sea level there seemed to be a portion of the economy that was not needed, a portion of the lungs and a portion of the circulatory system. At Colorado Springs, which was at a medium altitude, equilibrium was attained and the organs were not overtasked. Individuals who went there might complain of tachycardia and dyspnea and their fears were not allayed until their equilibrium was established. He had asked the man who ran the place on top of Pike's Peak about mountain sickness, and he told him that he suffered from it at times and that his remedy was bromo-seltzer.

Climatology as Practised by Hippocrates.—Dr. DeLancey Rochester of Buffalo read this paper. He said that his information in regard to Hippocrates had been culled from many sources, though most of it had come from the "Translation of Hippocrates' Work" by Francis Adams and from the copious notes which he gave in connection with this. There were many Asclepia or temples of health in Greece. Most of them were erected in the neighborhood of some medicinal spring. They were really sanatoria. Especially noted among them were two, one at Cnidos and one at Cos, and to these temples patients came in goodly numbers. At the entrance to the temple the devotee was subjected to purification and made to go through a regular course of bathing and massage; fomentations with decoctions of odoriferous herbs were also used. A total abstinence from food was at first prescribed, and later foods of various kinds were allowed. Every means that could be thought of was used for working upon the imagination of the sick, such as religious ceremonies of an imposing nature, accompanied by music, and whatever else could arouse the senses, conciliate the confidence, and in certain cases contribute to the amusement of the patient. From his forefathers Hippocrates inherited a distinguished situation in one of the most eminent hospitals, or temples of health then in existence, the Aslepion of Cos, where he must have enjoyed full access to all the treasures of observations, collected during many generations, and at the same time had an opportunity of assisting his own father in the management of the sick. Thus, from his youth, he must have been familiar with the principles of medicine, both in the abstract and the concrete.

Neurasthenia in the United States.—Dr. J. Madison Taylor of Philadelphia presented this communication. He said that neurasthenia, which was a state of morbid fatigability and susceptibility to exhaustion states and disease-causing agencies, was admittedly on the increase. To determine the underlying causes of this condition, which should lead to their mitigation or control, would prove of great economic value. A postulate was offered based on a mass of evidence to the effect that: *The fundamental agency in producing nervous instability or subversion of energies, was to be found in the peculiarities of climate hitherto inadequately appreciated*, and its corollary: omissions in observing conservative modes of life whereby the hurtfulness of adverse climatic conditions could be escaped. The United States were in a latitude similar to that of the Mediterranean basin; hence the summer was subtropical, with providentially cool winters. During the summer, periods of extreme, prostrating heat alternated with comfortable days. At all times (from May to September) there prevailed excessive, prolonged sunglare, which was determined to be the essential factor in "tropical neurasthenia," especially in blondes, among whom the majority of instances were said to occur. The inhabitants of the United States came originally largely from Northern Europe. For these and their descendants it was important to know whether among them neurasthenia was more common than among those from Southern Europe. Those individuals suffered most who exhibited least the physical characteristics or conformation necessary for survival in any climate for which they were not adapted by age-long evolution and selection. The tendency for blondes in successive generations to deteriorate in a hot, glaring environment was well determined. They showed a progressive lowering of tone and resisting powers in the central nervous system, a pitiless weakening of vital forces, simulating neurasthenia. Disintegration of these vital powers, physical, mental and moral, so necessary for sustained action, opened the door to divers hurtful agencies. Energy was a characteristic of peoples reared in cold, cloudy countries. In the tropics it was not only hurtful for all to be energetic, but made for manifold destructive changes in vital structures. Those who survived best

in the tropics were those most capable of indolence and quiet, with only spasmodic energizing. The relaxed, perspiring skin of the blonde under tropical temperatures was the same as in a prolonged hot bath, intensely weakening, impairing recuperative power and moral tone. The most serious factor, however, was excessive prolonged light, as shown by all physicists who had worked with the extra spectral rays, and these same rays existed in sunlight and were in excess during June and July, the months of suicides, homicides, and incidence of insanities. It was, then, reasonable to infer that undue exposure to summer light and heat in the United States must and did cause suffering proportional to the defects in the conformation needed. Doubtless the causes of neurasthenia were many and complex, but the one cited was, or seemed to be, at the foundation of many contributory factors. If the above postulate were sustained by further study, then were the remedial measures obvious and urgently needed. Methods of life (conservative personal hygiene) should be taught and enforced designed to meet these and similar exigencies. During the hottest portions of the summer (often so intense), it was the part of wisdom to adopt many of the customs found necessary in subtropical countries. These were in strict accord with universal experience of what was most compatible with the local climatic peculiarities to be reckoned with. Violations of these elements of conservative personal hygiene were met by swift and condign punishment in the tropics and subtropics. Among the needful customs were earlier rising and the devotion of one or two hours at midday to rest or sleep; cessation from active affairs between noon and early afternoon. Indeed, it had been proven that better economic results followed fewer hours of any kind of work. Long hours not only tired, but exhausted the individual. Tree-planting should be obligatory in all cities; shaded playgrounds were essential for young and old, so were abundant facilities for cool baths. Clothing should be used adapted to the temperature—heavy garments killed energy; food should be modified, and all devices employed to shade and cool houses—dark awnings, power-fans, etc.

Tuesday, June 11—Second Day.

Climatology in the Curriculum of the Medical Schools of the United States and Canada.—Dr. James M. Anders of Philadelphia said that the accumulated observations of the effects of climate in the treatment of various conditions and diseases abundantly proved that it was one of the most valuable resources of the physician. Medical literature examined in its relations to climatotherapy as a remedial agent, however, revealed the unwelcome fact that it had done but little more than maintain its place with undiminished reputation during the last half of a century. Those interested in the subject of medical climatology should have assigned to it its proper office among the curative and preventive measures. In 1904, the late Dr. S. E. Solly called the attention of this society to the question of establishing a systematic teaching of climatology in the medical schools, and, in order to determine the extent of special training at that time, he mailed a circular letter to all the medical colleges, to which thirty answers were received. Of these only seven stated that climatology was included in the curriculum, questions set, and books recommended. Following the example of Dr. Solly, Dr. Anders mailed a circular to all American medical colleges, 140 in number, with a view of ascertaining to what extent the movement then proposed to advance the teaching of climatology had succeeded during the intervening period of nine years. The following questions were propounded: "Is climatology included in the regular curriculum? If so, how many lectures are given; are they in a separate course or in connection with one or other subjects, and for which year's students? Are a certain number of questions regularly set in the final examinations; if so, how are the answers rated?" Of the 140 letters sent out, replies were received from 99 institutions. Twenty-two included climatology in the curriculum, as against seven out of a total of 30 answers received by Dr. Solly in 1904. Certain inferences might be safely drawn from the facts presented: (1) That the most striking positive evidence obtained by this inquiry went to show that the subject of medical climatology received too little recognition in their schools of medicine. (2) From the character of the responses received to the series of questions propounded, cooperation on the part of medical faculties and pedagogic authorities would be readily given to efforts to introduce the teaching of this branch into their institutions of medical learning. (3) That the American Climatological Association could do no better, no more useful work, than to foster and promote this movement, through a special committee and a well directed campaign of education, for its own credit as well as for that of the entire medical profession of America. (4) That the instruction to be given should be confined to the elementary principles of meterorology in the junior year, since this would be sufficient to enable the student to select suitable climates in clinical cases presenting an indication for this valuable remedial measure.

Dr. Guy Hinsdale of Hot Springs, Va., said that Dr. Anders' paper was a very timely one and that there was no more proper field of work for the Association than that of promoting the teaching of climatology in medical colleges. It was remarkable how students became interested in collateral branches of this kind. He had obtained much aid in teaching this subject from lantern slides furnished him by the University of Chicago and Tuft's Medical College; the latter collection of slides showed meteorological conditions particularly in reference to temperature, barometric pressure, humidity, and rainfall throughout the country. If medical colleges would allow four lectures together with eight quizzes and the handing out of printed lectures, it would be a good thing. The Marine Hospital Service published valuable reprints of papers written by surgeons in various parts of the world on climate and temperatures, the occurrence of hemorrhages at high altitudes, and kindred topics; these could be distributed to the students. The Association should pass recommendations as to how such a system of lectures should be developed and subjects should be assigned so that teachers could follow along systematic lines.

Dr. Carroll E. Edson of Denver, Colo., said that there were a number of colleges in the catalogues of which this subject was found. The giving of but four lectures would be inadequate excepting for the purpose of laying a foundation for further study. One could not give the student a clear idea of how climate affected the physical economy, heat production, and so on, in four lectures. In his experience he had found that the idea was prevalent that schools with good medical equipment did not give sufficient attention to those studies which served to lay the foundation for climatic therapy. A course of study such as was suggested by Dr. Anders and backed by the American climatological Association would be of great advantage.

Dr. Charles L. Minor of Asheville, N. C., said that unfortunately climatology was not a definite science and there was very little to teach about it. Meterology was not in the hands of the doctors. It would be heretical to say that climatology was but little worked out and no one could give a systematic series of lectures and teach very much.

Dr. James M. Anders of Philadelphia, in closing the discussion, said he agreed with Dr. Hinsdale that it was the legitimate function of the association to encourage the teaching of this branch of medical science in medical schools and, if the third year student was given a brief course in the elements of meteorology, he would have something which would serve as a basis on which to select suitable climate in various diseased conditions and which would be of major service. This latter aspect of the subject should be brought to their attention during the senior year. One who was properly qualified could extract sufficient in four or five lectures to lay the foundation for future work. The fact that the science of meteorology and climatology was not far advanced was no reason for refusing to give the student a foundation upon which to build.

Cardiac Syphilis with Special Reference to Aortic Aneurysm and Regurgitation, and the Value of the Wassermann Reaction in Determining Their Etiology and Treatment.—Dr. Robert H. Babcock of Chicago presented this paper. He said that the inestimable value of the Wassermann test for syphilis was shown not alone by its being a means of diagnosis but in its demonstration of the fact that treatment supposed to have eradicated the disease had in many cases only prevented the development of obvious lesions and thus lulled the victim into fancied security. Again, the test had served to clear up and establish the etiology of diseased conditions which had been more or less vaguely understood but which now could be affirmed with certainty. This was especially true of certain neuroses and of some cardiovascular conditions which could not be definitely determined as being due to lues even by the pathologists. Of these latter Dr. Babcock's paper dealt particularly with those two clinically recognizable results of mesaortitis, aneurysm, and regurgitation. Until possessed of this valuable aid in diagnosis, their ability to recognize syphilis of the myocardium was uncertain and rested mainly on the anamnesis or the discovery of suspicious lymph nodes or scars. It was likely, therefore, that many a case of cardiac syphilis went unrecognized and hence missed the only means of therapy that could have offered a prospect of improvement. Only recently were

they beginning to realize that the spirochetæ might localize themselves exclusively and by selection in the heart muscle or in the walls of the aorta. The purpose of Dr. Babcock's paper was to emphasize the etiological importance of lues in mesaortitis and its two sequels, aortic regurgitation and aortic aneurysm. On looking over his case records since the close of 1909, he had found notes of 16 cases of aortic regurgitation of the vascular type. Of these 16 cases, 11 were submitted to the Wassermann test with a positive reaction in all. Of the remaining five a history of chancre was admitted in four while one was not questioned in regard to the possibility of lues and did not take the Wassermann test. Fifteen of the 16 cases accordingly could be attributed to syphilis, or a percentage of 93.7. During the same period of time (since the end of 1909) he had seen 10 cases of aortic aneurysm, the diagnosis in all being made by classical physical signs and confirmed by the skiagraph in those cases giving rise to any doubt concerning the accuracy of the diagnosis. Of these 10 cases, 5 gave a positive Wassermann reaction, 2 admitted syphilis, 2 gave no history and were not submitted to the Wassermann, while 1 gave a negative reaction. In other words, in 7 out of the 10 cases syphilis was clearly the etiological factor (70 per cent.). The result of mercurial treatment was not generally so marked as in regurgitation without saccular pouching of the vessel. It was apparent that no sort of medication was capable of restoring tissues destroyed by the spirochetæ; areas of fatty degeneration and fibrosis in the heart muscle could not be replaced by normal contractile elements, neither could the aortic valve nor the aortic coats become elastic. Gummata might be absorbed and nature given a chance to replace cellular by fibrous elements which might serve to strengthen or reinforce weak walls. From all points of view they were called on to institute vigorous antiluetic treatment as soon as they were convinced of the correctness of their etiological diagnosis. Intramuscular injections and inunctions were the only two practical methods of rapidly saturating the system with mercury. Salvarsan was highly powerful against the organism of syphilis, but in serious heart cases must be used, if at all, with caution; moreover it did not kill all the spirochetæ in the inaccessible recesses of the tissues. Therefore, salvarsan must be used more than once and must be supplemented by mercury over a long period. Finally treatment of whatever kind must be continued until a negative Wassermann reaction was obtained. The lesson to be drawn was that they should impress their patients with the imperative necessity of a vigorous and prolonged course of medication. If they would cure the cardiopathies due to syphilis, they must prevent their occurrence by attacking the infection early and keeping up the fight as long as a positive Wassermann reaction was obtained, for when aortic aneurysm, or regurgitation, or syphilis of the myocardium had been produced, they could only ameliorate and not eradicate the condition.

Dr. DeLancey Rochester of Buffalo, N. Y., said that they had made some interesting observations among their hospital cases. Out of twelve cases of aortic disease there were seven that gave the positive Wassermann reaction. Two of the seven gave a previous history of rheumatism. They now gave the Wassermann test in every cardiac case that entered their service. Dr. Rochester said he had obtained excellent results from intramuscular injections of mercury and he preferred this method rather than giving it by the mouth.

Dr. Charles Quimby of New York said that twenty years ago he had seen many cases of aortic disease with Dr. Loomis, who stated that he never knew a case of aortic disease occurring in an individual under thirty-five or forty years of age that was not syphilitic. When such patients presented themselves they were treated for syphilis. Only the week before he had seen a patient with syphilis of the aorta who was doing well under mercuric treatment, although the Wassermann test had been negative.

Dr. James M. Anders of Philadelphia, said that, as had been stated, syphilis undoubtedly showed a selective action for the myocardium. Both the myocardium and the pericardium might be secondarily involved by direct extension of the morbid process. The root of the aorta was the seat of syphilitic lesions which led to dilatations and aneurysms. Formerly he made his diagnosis in these cases by exclusion. Dr. Anders said he agreed with Dr. Babcock that cardiac syphilis was a late or tertiary manifestation of syphilis. After excluding rheumatism and occupation one might safely infer that syphilis was the causative factor in aortic regurgitation. In cases of angina pectoris, occurring in individuals over forty years of age, syphilis was the causative agent in the large majority of cases. Nearly all cases of sacculation of the aorta were also due to syphilis. He had recently seen a case where the Wassermann reaction was negative, but after giving salvarsan the reaction became positive. Probably the spirochetæ were too few to bring about the reaction.

Dr. Judson Daland of Philadelphia, said that, as to classification, he agreed with the point taken that aneurysm, especially sacculation, was not an ordinary dilatation. Dr. Daland laid particular stress on the predisposition of the spirochetæ to endanger the circulatory apparatus even more than the heart itself. They should bear in mind that syphilis was a very common cause of aortic disease, but that syphilis played a less common rôle as the causative factor in cardiac disease in this country than in Europe. The speaker also called attention to the frequency of cases with hypertension causing changes in the heart and circulatory system. Dr. Daland thought that the intravenous injection of salvarsan in these cases was dangerous, and said that if one examined into a number of deaths caused by salvarsan, it would be found that the majority of them occurred in those who had suffered from myocardial degeneration. There were a few cases where salvarsan might be injected into the gluteal muscles in small quantities, but even this he allowed with reluctance. One could not lay too much stress upon the possibility of death occurring either suddenly or a few days after the injection of the salvarsan in advanced cases of cardiac disease of syphilitic origin.

Dr. Arthur K. Stone of Boston, Mass., said that he had a number of specimens in which were demonstrated the presence of the spirochetæ in syphilitic aortitis. The spirochetæ were found in all cases of aortic disease beginning in the vasculature and extending into the heart. It had become a maxim with them that all such cases occurring after the fortieth year were syphilitic. It was better to say that a case was syphilitic and to go ahead on that basis than to trust to the Wassermann reaction unless one was very sure of the man who was doing the work. Dr. Stone said he had seen many cases improve rapidly and then suddenly go to pieces and autopsy showed that the lesion was too extensive for any treatment to have been of avail. He had used salvarsan in two advanced cases within the past six months with satisfactory results.

Dr. J. H. Elliott of Toronto, Canada, said he wished to ask Dr. Babcock what he thought of occupation as a factor in the production of these aneurysms. The pain caused by the intramuscular injection of salvarsan was severe but he could see no ill effects from its intravenous use.

Dr. Robert Babcock of Chicago, Ill., in closing the discussion, said that he had never seen a case of aortic aneurysm in which occupation was recognized as the sole cause, although he could readily understand theoretically that in old people with aortic sclerosis aneurysm might result from a strain. It was doubtful if the aortic wall could give way in young individuals without some underlying pathological factor being present. Strain might cause a dilatation of the aortic ring which might subsequently disappear. In cases attributed to strain there was probably some preexisting pathological process which acted in conjunction with the strain. In regard to what Dr. Anders said about negative results from the Wassermann test in young people, he questioned the accuracy of the reaction. The Wassermann reaction was reliable in its positiveness but not in its negativeness. No treatment would help all cases; one could not expect an area of degeneration of the heart to be replaced by normal elements. Vigorous treatment sometimes relieved these patients subjectively and gave a chance for possible restoration or compensation. Dr. Babcock said he was very conservative in the use of salvarsan in these cases. If the patient wished salvarsan used, the physician should have him sign a paper to the effect that he was acquainted with the dangers and had voluntarily submitted to this form of treatment.

(To be continued.)

State Medical Licensing Boards.

STATE BOARD EXAMINATION QUESTIONS.

Louisiana State Board of Medical Examiners.

May 30, 31, and June 1, 1912.

ANATOMY.

1. How many tarsal bones are there? Name them.
2. Describe briefly the cervical vertebræ.
3. Give origin and insertion of pectoralis minor, coracobrachialis, pronator radii teres, sartorius, and biceps.
4. Name the branches of abdominal aorta.

5. Give the relations of the femoral vessels in Scarpa's triangle.
6. Describe the blood supply of the cecum and vermiform appendix.
7. What are the relations to the deep epigastric artery of (*a*) an oblique inguinal hernia; (*b*) a direct inguinal hernia?
8. What is Gimbernat's ligament?
9. Tell briefly what you know about the fifth cranial nerve.
10. Name and describe briefly the membranes which surround the spinal cord.

PHYSIOLOGY.

1. Describe the anatomical and histological structure of (*a*) the neuronal cell-body; (*b*) the axone; (*c*) what is the function of each structure?
2. What is the tactile sense? (*a*) Where is it most acute; (*b*) what is its cognitional value; (*c*) what is its relation to the central nervous system?
3. Give the general characteristics of urine as to (*a*) quantity, (*b*) reaction, (*c*) specific gravity, (*d*) color. When do these vary?
4. Name the enzymes of the pancreatic juice and describe separately the part each plays in digestion.
5. What factors, chemical and physical, are concerned in gastric digestion?
6. Describe briefly the chemical changes, the thermal changes, the electric changes, changes of form, in muscular tissue when in a state of activity.
7. What is the character of contraction (*a*) in non-striated involuntary muscles, (*b*) in striated voluntary muscles; (*c*) give examples of each.
8. What are the functions of the blood plasma and of the blood corpuscles?
9. Describe the types of normal respiration and how influenced by (*a*) age, (*b*) sex, (*c*) race.
10. What forces are involved in the circulation of the blood in the arteries and in the capillaries?

CHEMISTRY.

1. What is the chemical composition of bone?
2. Mention six elements used in medicine and give their symbols and atomic weight.
3. Define (*a*) analysis, (*b*) synthesis, (*c*) cohesion, (*d*) chemical affinity.
4. Convert 67 degrees Fahrenheit into Centigrade.
5. What is the process termed when oxygen unites with another element?
6. Give a test for diacetic acid and state its clinical significance.
7. What is Ehrlich's diazo reaction and state its clinical significance.
8. Give a test for indican and state its clinical significance.
9. Give an emergency method of preparing ferric hydroxide for use in a case of poisoning by arsenic.
10. Give a test for HCl in the gastric contents.

THERAPEUTICS.

1. What are digestants? (*a*) Name the principal official digestants; (*b*) what are the therapeutic uses of each?
2. What are the indications and contraindications to the use of opium?
3. What is serum therapy and how would you treat a severe case of laryngeal diphtheria and what would be your prophylaxis in a suspected case of tetanus?
4. What are the therapeutic uses locally and internally of atropine sulphate?
5. Mention four ways in which antipyretics reduce body temperature.
6. How would you treat a case of arteriosclerosis?
7. Give the therapeutic uses of the different preparations of mercury.
8. How would you treat a case of syphilis in its different stages?
9. What are the indications and the contraindications in the use of ergot?
10. How would you treat a case of hookworm disease?

PHYSICAL DIAGNOSIS.

1. Define cyanosis and give its causes.
2. Define vocal fremitus and state its significance in pulmonary disease.
3. What are the essentially different sounds given by percussion over healthy lung?
4. What are the physical signs of pulmonary solidification?
5. In what condition does bronchial breathing take the place of vesicular breathing?
6. Differentiate organic and functional heart murmurs.
7. What are the causes and treatment of palpitation of the heart?
8. What are the causes of endocarditis?
9. Why is dyspnea caused by disorganization of the mitral valves?
10. What are the signs of impending death?

PATHOLOGY.

1. What post-mortem changes occur in the tissues?
2. What is the cause of a rise in body temperature? Explain the mechanism.
3. Define atrophy. Give the varieties of atrophy.
4. Differentiate fatty infiltration and fatty degeneration.
5. Define hyperemia, anemia, leukemia.
6. Explain what is meant by the terms physiologic and pathologic leucocytosis respectively. State whether a leucocytosis is present in the following diseases: typhoid fever, malarial fever, appendicitis, acute miliary tuberculosis.
7. What is an embolus? Mention frequent sources of emboli and state the sequels of embolism.
8. Describe, in the order of their occurrence, the cardinal signs of inflammation and explain them. State also the terminations of inflammation.
9. Describe the reparative processes following the fracture of a long bone.
10. What is the line of demarcation in gangrene?

ANSWERS.

ANATOMY.

1. There are seven tarsal bones: Os calcis; astragalus; cuboid; scaphoid; internal, middle, and external cuneiform.

2. The cervical vertebræ are smaller than those in the other regions, and can be distinguished from the others by the presence of a foramen in the transverse process. They have a small body which is concave above and convex below; long and narrow laminæ, short and bifid transverse processes, short and bifid spinous processes, and oblique articular processes. The peculiar cervical vertebræ are the first, second, and seventh.

3. *Pectoralis minor* arises from the third, fourth and fifth ribs at the costochondral articulation; and is inserted into the tip of the coracoid process of the scapula. *Coracobrachialis* arises from the coracoid process of the scapula; and is inserted into the middle of the inner surface and internal border of the shaft of the humerus. *Pronator radii teres* arises from the internal condyle of the humerus and from the inner side of the coronoid process of the ulna, and is inserted into the middle of the outer surface of the radius.

Sartorius arises from the anterior superior spine of the ilium; and is inserted into the upper part of the inner surface of the shaft of the tibia.

Biceps arises from upper margin of glenoid cavity and from the apex of the coracoid process of the scapula, and is inserted into the tuberosity of the radius.

4. The *branches of the abdominal aorta* are: Celiac axis, superior mesenteric, suprarenal, renal, spermatic (or ovarian), inferior mesenteric, lumbar, and sacra media.

5. At the base of Scarpa's triangle the femoral vein is internal to the femoral artery; at the apex of the triangle the vein is passing behind the artery.

6. The cecum is supplied by the ileocolic artery (branch of the superior mesenteric); this gives off the anterior and posterior ileocecal; of these, the anterior supplies the cecum, and the posterior supplies the appendix (chiefly by its branch the appendicular artery)

7. The deep epigastric artery is internal to an oblique inguinal hernia, and external to a direct inguinal hernia.

8. *Gimbernat's ligament* is a reflection of Poupart's ligament, from the spine of the pubis along the ileopectineal line.

9. FIFTH CRANIAL NERVE. *Superficial origin:* From the side of the pons Varolii. *Deep* (sensory root), from the medulla and upper part of cord; (motor root) from the floor of fourth ventricle and side of the aqueduct of Sylvius. *Exit:* The ophthalmic division, through the sphenoidal fissure; the superior maxillary division, through the foramen rotundum; the inferior maxillary division, through the foramen ovale. *Ophthalmic branch* distributed to conjunctiva, skin of upper eyelid, cornea, skin of forehead, and nose, lacrymal gland. *Superior maxillary*, to skin and conjunctiva of lower eyelid, nose, cheek, upper lip, upper teeth, and palate. *Inferior maxillary*, to external auditory meatus, side of head, mucous membrane of mouth, anterior two-thirds of tongue, lower teeth, and skin of lower

part of face. Also to muscles as indicated below. It supplies sensation to all the parts mentioned above; but, in addition, inferior maxillary supplies motion to the muscles of mastication, the mylohyoid, and anterior belly of the digastric.

10. MEMBRANES OF SPINAL CORD. "The *Dura Mater* is the most external membrane, and is continuous with that investing the brain; but it does not form the endosteum of the vertebræ, nor has it any sinuses, but it is separated from the bones by areolar tissue and a plexus of veins. It is connected above with the edge of the foramen magnum; at the top of the sacrum it becomes impervious, and is continued as a slender cord to blend with the periosteum of the coccyx. This membrane gives sheaths to all the spinal nerves.

"The *Pia Mater* is less vascular, thicker, and more fibrous than that investing the brain. It has an external fibrous layer of longitudinal bundles having a fold, the *linea splendens,* dipping into the anterior fissure, and a smaller one passing into the posterior fissure. The pia mater ends in a slender cord, the *filum terminale,* which is within the prolongation of the dura mater. A process of pia mater, the *ligamentum denticulatum,* passes outward toward the dura, to which it is attached by twenty-two tooth-like processes situated between the origins of the spinal nerves; its pial origin is continuous, and lies between the anterior and posterior nerve-roots.

"The *Arachnoid* is placed outside the pia mater, and loosely invests the cord. The subarachnoid space of the cord is large, and is imperfectly divided by the *ligamentum denticulatum,* into an anterior and a posterior portion. The posterior portion is further subdivided by the *septum posticum,* which passes from the posterior fissure backward to the opposite part of the arachnoid, and contains the larger blood vessels. Trabeculæ also pass between the nerve-roots and the inner surface of the arachnoid, and between the posterior nerve-roots and the *septum posticum.*" *(Aids to Anatomy.)*

PHYSIOLOGY.

1. A *neuron* is a nerve cell with all its processes. The cells vary in size, but are generally large. They have one or more processes, a distinct nucleus, but no cell wall; the nucleus has a nucleolus; the cytoplasm is pigmented. The processes are the axis cylinder or axone, collaterals, and dendrites. The *axone* is usually a long protoplasmic process which carries an impulse away from the cell. It may be covered with a medullary sheath and a neurilemma. The function of the neuron (cell) is to receive or send out impulses, and to nourish the processes.

2. *Tactile sense* is the sense of touch; by it we become acquainted with the shape and consistency of bodies, their roughness or smoothness, hardness or softness, etc. It is most acute at the tip of the tongue. It depends upon the existence of nerves and nerve endings in the skin and other parts where the function exists. These nerves are, of course, in connection with the central nervous system; the sensation is conveyed to the brain. Irritating vapors and liquids are really appreciated by the tactile sense and not the sense of smell or taste.

3. The amount of urine voided in twenty-four hours is normally about fifty ounces; its reaction is acid; its specific gravity is from about 1015 to about 1025; its color is yellowish. The *quantity* is increased in winter and in diabetes, hysteria, epilepsy, and some kidney diseases; it is decreased in summer, in fevers, in gout, and certain diseases of the liver, kidneys, and heart. The *reaction* may become alkaline by a vegetable diet, or if the urine undergoes decomposition; also in cystitis, chlorosis, nervous diseases; it may become more acid in fevers, and diseases of liver, heart, or lungs, and in acid dyspepsia. The *specific gravity* is low in the presence of albumin, or polyuria; it is high when glucose is present. Naturally the specific gravity varies, with the quantity voided. The *color* is *light* in polyuria, neurotic conditions, and chronic nephritis; it is high colored in fevers and jaundice; yellowish-green in the presence of bile; white if chyle or pus is present; brownish, in the presence of decomposed blood; red, in the presence of blood; certain drugs will also cause changes in the color.

4. The *pancreatic* juice contains four ferments: (1) *Trypsin,* which changes proteids into peptones; (2) *Amylopsin,* which changes starch into dextrine and maltose; (3) *Steapsin,* which emulsifies and saponifies fats; and (4) a *curdling ferment,* which precipitates the casein of milk.

5. *Factors concerned in gastric digestion:* Movement of the stomach; innervation of stomach; secretions of stomach; and action of the hydrochloric acid and gastric ferments.

6. During contraction the following changes take place in a muscle:

(1) It becomes shorter and thicker, but the volume remains the same.
(2) It consumes oxygen.
(3) It sets free carbon dioxide.
(4) It forms sarcolactic acid.
(5) It becomes acid in reaction.
(6) It becomes more extensible and less elastic.
(7) There is an increase in heat production, and consequently a rise of temperature.
(8) The electrical reaction becomes relatively negative.

7. The contractions in *non-striated, involuntary muscles* are not under the control of the will; they are rhythmical, and are characterized by peristalsis. Example, the muscles in the walls of the intestines. In *striated, voluntary muscles,* the contractions are largely under the control of the will, are not rhythmical, and are not characterized by peristalsis. Example, the flexor muscles of the forearm.

8. FUNCTIONS OF THE BLOOD: The *red blood cells* carry oxygen from the lungs to the tissues. The *white blood cells:* (1) Serve as a protection to the body from the incursions of pathogenic microorganisms; (2) take some part in the process of the coagulation of the blood; (3) aid in the absorption of fats and peptones from the intestine, and (4) help to maintain the proper proteid content of the blood plasma. The function of the *platelets* is not determined; it is possible that they take some part in the coagulation of the bood. The *plasma* conveys nutriment to the tissues; it holds in solution the carbon dioxide and water which it receives from the tissues, and takes them to be eliminated by the lungs, kidneys, and skin; it also holds in solution urea and other nitrogenous substances that are taken to and excreted by the liver or kidneys.

9. There are two types of inspiration: (1) The Superior costal, or female type; and (2) the Inferior costal, abdominal, or male type. "In children, as well as in the adult male, under ordinary conditions, the diaphragm performs most of the work, and the movements of the abdomen are the only ones especially noticeable. . . . In the female the movements of the chest, particularly of its upper half, are habitually more prominent than those of the abdomen, and this difference in the mechanism of respiration is characteristic of the sexes." The protrusion of the abdominal wall, caused by the descent of the diaphragm, is very marked in children, and produces the abdominal type of respiration. Very careful and complete studies of women in and out of civilization, the lower portions of whose chests have never been compressed with corsets or with other devices calculated to prevent expansion of these parts, have demonstrated that the supposed respiratory difference in male and female does not exist naturally, and that when it is found it is due to the corset, and not to any peculiarity of sex. Indeed, if the male chest is encased in a corset the inferior costal type becomes changed at once into the superior costal. (From Raymond's *Physiology.)*

10. The circulation of the blood is regulated in the *arteries* by: (1) the elasticity and tone of the arteries, (2) the force and frequency of the cardiac contractions, (3) and the resistance in the capillaries. In the *capillaries* it is regulated by: (1) The action of the heart, (2) the action of the arteries.

CHEMISTRY.

1. COMPOSITION OF BONE:

Organic matter,	Gelatin and blood-vessels.	33 per cent.
Inorganic,	Phosphate of lime.....	51 "
	Carbonate "	11 "
	Fluoride of calcium.....	2 "
	Phosphate of magnesium	1 "
	Soda and sodium chloride	1 "

2. Oxygen, O., 16; chlorine, Cl., 35.5; iodine, I., 127; sulphur, S., 32; phosphorus, P., 31; and carbon, C., 12.

3. *Analysis* is the process by which a compound is split up into simpler compounds or into its constituent elements. *Synthesis* is the process by which a compound is built up out of elements or out of simpler compounds.

Cohesion is the force which unites (dissimilar) molecules.

Chemical affinity is the force which attracts atoms to each other, and causes them to unite to form a molecule.

4. $C.^\circ = \frac{5}{9}(F.^\circ - 32)$

$= \frac{5}{9}(67\text{-}32) = \frac{5}{9}$ of $35 = 19.5$

$\therefore 67^\circ$ F. $= 19.5^\circ$ C.

5. Oxidation.

6. *Test for diacetic acid:* To a few c.c. of the urine add a 10 per cent. solution of ferric chloride, drop by drop, until the phosphates are precipitated; then filter, and add some more ferric chloride. If diacetic acid is present, the urine becomes of a Bordeaux-red color, which disappears on boiling. *Diacetic acid occurs* in fevers, gastrointestinal disturbances, eclampsia, pernicious vomiting of pregnancy, and before diabetic coma.

7. *Ehrlich's diazo reaction:* Equal volumes of the reagent and of the urine are shaken together in a test-tube; one-half a c.c. of ammonia is floated on the mixture; a red band at the junction of the liquids denotes a positive reaction. The reagent consists of: (1) a saturated solution of sulphanilic acid in a mixture of 50 c.c. of hydrochloric acid and 950 c.c. of water; and (2) a 0.5 solution of sodium nitrite. When about to be used 1 c.c. of (2) is added to 40 c.c. of (1), and the mixture shaken.

The diagnostic value of the test is uncertain. Von Jaksch "disclaims for this test any clinical importance whatever." Others have claimed that the reaction is pathognomonic of typhoid; but it has been found in other diseases besides typhoid, such as phthisis, pneumonia, measles, scarlet fever, smallpox, and malaria.

8. *Test for indican in the urine:* The urine is mixed with one-fifth its volume of 20 per cent. solution of lead acetate and filtered. The filtrate is mixed with an equal volume of fuming hydrochloric acid containing 3: 1000 of ferric chlorid, a few drops of chloroform are added, and the mixture strongly shaken one to two minutes. With normal urine the chloroform remains colorless, or almost so; but if an excess of indoxyl compounds be present the chloroform is colored blue, and the depth of the color is a rough indication of the degree of the excess.

Indicanuria is found in hypochlorhydria; in hyperchlorhydria of gastric ulcer; in conditions in which there is diminished peristalsis of the small intestines, as in ileus and peritonitis, not in simple constipation; also in conditions in which putrefactive changes occur in the body elsewhere than in the intestine, as in empyema, putrid bronchitis, gangrene of the lungs, etc. (From Witthaus's *Essentials of Chemistry.*)

9. Ferric hydroxide may be prepared rapidly by precipitating a solution of ferric sulphate with magnesia. The two following solutions should be kept in separate bottles; and, when needed, mix them, and administer.

(1) Liq. ferri tersulphatis ℥ij
Aquæ ℥vj
(2) Magnesiæ ℥iij
Aquæ ℥viij.

10. Test for hydrochloric acid in gastric contents: In a porcelain dish mix a few drops of filtered gastric contents with a few drops of Boas' reagent, then slowly evaporate over a flame. If hydrochloric acid is present, there will appear a rose-red color which fades on cooling. The reagent consists of 5 gm. of sublimed resorcinol and 3 gm. of cane sugar, in 100 c.c. of alcohol.

THERAPEUTICS.

1. *Digestants* are agents which aid in the process of digestion. The official digestants are: Hydrochloric acid, pepsin, pancreatin, and malt.

Hydrochloric acid is used in stomach conditions associated with inacidity or hypoacidity, such as cancer of the stomach, atrophy of the gastric glands, and sometimes in continued fevers.

Pepsin is indicated as an aid to gastric digestion in gastralgia, gastric cancer and ulcer, atonic dyspepsia, and the vomiting of pregnancy.

Pancreatin is indicated as an aid to digestion, and for the predigestion of food, in convalescence, in wasting diseases, and in intestinal dyspepsia.

Malt, a diastase prepared from malt is said to aid in the digestion of starch.

2. Opium. *Indications:* As an anodyne, in diarrhea, peritonitis, for internal hemorrhages, in mania and delirium tremens, in many respiratory affections, in diabetes, and to prevent or lessen shock. *Contraindications:* It should not be given to young children; nor should it be used in the second stage of pneumonia, alcoholism, cerebral congestion, or in bronchorrhea of old people.

3. *Serumtherapy* is the treatment of an infectious disease by a specific antiserum. *Laryngeal diphtheria* should be treated by the administration of diphtheria antitoxin, in doses of about 4,000 to 8,000 units. In a *suspected case of tetanus*, tetanus antitoxin should be administered in dose of about 2,000 units.

4. Atrophine sulphate may be used *locally* to dilate the pupil, to paralyze accommodation, and as a sedative application in lumbago, inflammatory diseases of joints, etc. *Internally* it is given to check excessive secretion, to relax spasm, in shock and collapse to stimulate the vasomotor center, to stimulate intestinal peristalsis, and as an antidote for some poisons (such as physostigma, muscarin, hydrocyanic acid, chloroform, and opium).

5. (1) By abstracting heat from the body; (2) by producing perspiration (which is evaporated); (3) by dilating the vessels in the skin and so producing increased radiation; (4) by reducing the circulation.

6. *Treatment of arteriosclerosis:* Remove the cause if possible; forbid the use of alcohol; treat any disease that may be present (such as heart disease, nephritis, rheumatism, syphilis); diminish the meat eaten, and substitute vegetables where possible. Nitroglycerin, gr. 1/100; nitrites, diuretics, and laxatives have all been recommended. Hot baths, under proper supervision, exercise, and massage are indicated.

7. *Mercurial ointments* are used; as a parasiticide; as an application to sores; as an inunction in chronic inflammations, and enlarged lymphatic glands. The *yellow oxide*, for syphilitic and other sores, and in blepharitis. The *red oxide* for syphilitic and other sores, and as a parasiticide. The *nitrate* as a caustic for syphilitic warts and condylomata. *Mercury with chalk* and *blue mass* as laxative, cholagogue, and purgative; the latter, also, as diuretic, in syphilis. *Calomel* as laxative or purgative; in congested liver or stomach; in diarrhea, and as a diuretic. *Corrosive sublimate* as antiseptic and parasiticide; for itching, and syphilitic sores; in syphilis. The *iodides* chiefly for syphilis.

8. *Treatment of syphilis:* The management of the local sore consists in local cleanliness mainly. If the diagnosis is absolutely certain, mercury may be commenced at once, and may avert even secondary symptoms; but it is often advisable to wait till these appear before commencing specific treatment. Treatment consists in the early stages in the administration of one or other of the preparations of mercury. This can be given for long periods without producing salivation or diarrhea. Treatment must not be stopped when symptoms have disappeared, but must be continued for two or three years. Where symptoms are more urgent and a rapid effect is desired inunction of blue ointment ℥j daily, or hypodermic injection of corrosive sublimate gr. 1/8 every second day, may be practised, or calomel suspended in sterile oil may be injected into the gluteal muscles once a week. The condition of the mouth must be looked to and smoking should be forbidden if there are lesions in the mouth. In the tertiary stages, iodide of potassium to a great extent takes the place of mercury, but the two are often advantageously combined. Doses of from 5 to 20 grains thrice daily usually suffice, but in cerebral syphilis the drug must be rapidly pushed to even larger doses. In every case, besides treating the specific disease, the general health must be sedulously cared for. Salvarsan is now often used; it may be given subcutaneously, intravenously, or intramuscularly. It should be used with caution. (From Wheeler's *Handbook of Medicine.*)

9. Ergot. *Indications:* To promote uterine contractions during third stage of labor; fibroids, menorrhagia, postpartum hemorrhage. Some forms of amenorrhea and dysmenorrhea, dysentery, arterial hemorrhage, congestive headaches, laxity of sphincters, of bladder, or rectum, hemorrhoids, aneurysm, diabetes, urinary incontinence, direct paralysis of the sphincter vesicæ, atonic spermatorrhea.

Contraindications: During the first stage of labor, and in anemia of the brain or spinal cord.

10. The patient is placed on semi-starvation diet for half a day, and is then given from 2 to 10 grains of calomel; if the latter does not act freely Epsom salt may be given. When the bowels are thoroughly emptied some thymol in capsule must be given, the quantity depending upon the patient's age. An adult may take from 60 to 90 grains. The patient is again kept on a very restricted diet, with practically no liquids. After several hours a saline laxative may be administered. This treatment may be repeated (if necessary) in two weeks.

PHYSICAL DIAGNOSIS.

1. *Cyanosis* is a condition in which the skin is of a purplish hue from the presence of imperfectly oxygenated blood in the capillaries. *Causes:* Anything which interferes with the admission of air into the lungs, croup, retropharyngeal abscess, foreign bodies in air passages, pressure on air passages, pharyngitis, laryngitis, bronchitis, pleurisy, pneumonia, tuberculosis, emphysema, pericarditis, tumors of mediastinum, and some coal tar derivatives.

2. *Vocal fremitus* is a vibration due to speaking or crying, and conveyed from the surface of the chest to the hand of the examiner. It is *increased* in lobar pneumonia, phthisis, and bronchopneumonia; it is diminished or absent in pleural effusions, emphysema, atelectasis and pulmonary edema.

3. Dull, clear, and tympanitic.

4. In *pulmonary consolidation*, there are: diminished chest movement, increased vocal fremitus, absence of vesicular breathing, presence of tubular breathing, increased vocal resonance, bronchophony, and dullness on percussion.

5. Bronchial breathing replaces vesicular breathing in consolidation of the lung.

6. *Organic murmurs* are due to stenosis or incompetency of one or more of the valves of the heart.

Functional murmurs are not due to valvular disease. *Organic murmurs* may be systolic or diastolic; may be accompanied by marked dilatation or hypertrophy, and there will probably be a history of rheumatism or of some other disease capable of producing endocarditis. Whereas a murmur, usually systolic, soft, and blowing, heard best over the pulmonic area, associated with evidences of chlorosis or anemia, and affected by the position of the patient, is a *hemic* or *functional* murmur, and denotes as a rule an impoverished condition of the blood.

7. PALPITATION OF THE HEART. *Causes:* Anemia, emotion, hysteria, mental anxiety, heart-strain, overexertion, dyspepsia, excessive and long continued use of alcohol, tobacco, coffee or tea, excessive sexual indulgence, menstrual disorders, and puberty. *Treatment:* Remove the cause, if possible; aromatic spirit of ammonia, or Hoffmann's anodyne, or trional, or potassium bromide and veratrum viride, or iron, quinine and strychnine may be given; a belladonna plaster applied to the precordium is beneficial.

8. *Causes of endocarditis:* Microorganisms, rheumatism, chorea, pneumonia, pleurisy, infectious fevers (scarlet fever, diphtheria, etc.), septicemia, pyemia, nephritis, gonorrhea, alcoholism, excessive muscular labor.

9. The *dyspnea* is the result of diminished oxygenation of the blood, as the result of lessened arterial pressure, increased venous pressure, congestion of the lungs, and back pressure from the left side of the heart.

10. *Signs of impending death:* The physical signs of a failing heart, rapid and feeble pulse, slow respiration, loss of consciousness, picking at the bed-clothes, frequent inquiry as to the time of day (or night); sometimes there is a peculiar odor to the breath. The Hippocratic facies is also characteristic; this includes "a sharp nose, hollow eyes, collapsed temples; the ears are cold and contracted, and their lobes turned out; the skin about the forehead is rough, distended and parched; and the whole face is brown, black, livid, or lead-colored."

PATHOLOGY.

1. *Post-mortem changes in tissues:* Rigor mortis; rise of temperature followed by fall of temperature; the arteries contract, and drive the blood into the veins; the red corpuscles split, letting out the hemoglobin; the tissues become stained; the blood tends to coagulate; putrefaction and decomposition take place. "The protoplasm tends to become granular; it sometimes increases in bulk, so that the cells look swollen; and in nucleated cells the nucleus often shrinks or entirely disappears. The cells ultimately break up into molecules of various sizes. In adipose tissue the cells diminish in size owing to the escape of the fluid fat, which diffuses itself throughout the surrounding structures. The fibers of connective tissue swell up, become opaque, and ultimately liquefy. In nerve-fibers the white substance of Schwann coagulates and collects into small drops within the neurilemma. Cartilage, bone, and hair resist the putrefactive process longer than any of the other tissues, and are the least altered by it." (From Green's *Pathology.*)

2. The normal temperature of the body is *maintained* by the thermotactic centers in the brain and cord keeping an equilibrium between the heat gained or produced in the body and the heat lost. Heat is *gained* to the body by (1) the muscles, during contraction; (2) the secreting glands; (3) the brain, during mental activity; and (4) by the ingestion of food and hot liquids.

Heat is *lost* to the body by (1) the skin, through evaporation, radiation, and conduction; (2) the lungs; and (3) the excretions (feces and urine).

Hence, a rise in body temperature may be due to a disturbance of any one or more of the three heat centers (the thermotactic, thermogenetic, and thermolytic); or to the presence of some toxic substances circulating in the blood; the mechanism is unknown.

3. *Atrophy* is decrease in the amount of tissue, owing to diminution in size (simple atrophy) or number (numerical atrophy) of the histological elements of which it is composed. There is also loss of weight, and impairment of function. *Varieties:* Simple and numerical (see above); also general and local.

4. In *fatty infiltration* the tissues contain fat brought from without; there is no change in the cell protoplasm, and such damage as the tissue undergoes is due to the mechanical pressure caused by the fat.

In *fatty degeneration* the cell protoplasm undergoes change; the fat is in the cells, and not between them.

5. *Anemia* denotes a condition in which there is reduction of the quantity or quality of the blood (generally used with reference to the red corpuscles). *Hyperemia* denotes excessive blood in a part. *Leukemia* is a condition in which the white blood corpuscles are increased in number, and is accompanied by pathological changes in the spleen, lymphatic glands, and bone marrow.

6. *Leucocytosis* is considered as *physiological* when it occurs in conditions which are normal or nearly so (such as during digestion, or pregnancy, after exercise); when it occurs in abnormal conditions, it is called *pathological.*

In typhoid, there is generally no leucocytosis; in malaria, none; in appendicitis there is a leucocytosis; in acute miliary tuberculosis, none.

7. An *embolism* is an intravascular obstruction from the lodgment of a foreign body. *Sources:* Thrombi, vegetations from the valves of the heart, portions of new growths, foreign bodies, fluid fat, parasites, pigment granules. *Sequels:* Infarction, irritation, infection, metastatic abscesses, gangrene, aneurysm.

8. The *cardinal signs of inflammation* are: Redness, swelling, pain, heat, and impaired function. One or more of these may be absent. "The *swelling* of the inflamed area is caused by the increased amount of the blood in the part and by the transudation of fluid into the tissues. The *redness* of an inflamed part is due to the presence of an amount of arterial blood larger than normal. The *increased temperature* is also due to the increase in the amount of blood and in the velocity of the circulation. The temperature of the inflamed part never exceeds that of the blood, though if there be fever it may be higher than normal. The *pain* is generally stated to be due to pressure by the exudation on the nerve-endings. Probably a good deal of the pain is due to the irritant action of the irritant, or of the fluids transuded, on the nerve-endings. The pain is sometimes referred to a distant part." (From Hewlett's *Pathology.*)

9. "The broken ends of the bone are rough and irregular, and the periosteum is torn more or less, but some portion usually remains as a bridge between the fragments. The soft structures in the neighborhood are lacerated, so that the parts are infiltrated with blood-clot, which fills up the spaces between the bone ends. As in repair of any other part, the blood-clot in a few hours is infiltrated with leucocytes, whose duty it is to absorb the clot. The connective-tissue cells in the surrounding parts proliferate, and the bone undergoes rarefying osteitis, so that the place of the blood-clot is taken by granulation tissue. The granulation tissue becomes calcified, and the calcified tissues ultimately replaced by bone. The periosteum plays a large part in the ossification of the new tissue. It becomes stripped up for some distance, hyperemic, and thickened. Granulation tissue is formed from it, and unites with that which has replaced the blood-clot. This mass binds the bone together and forms the *provisional* or *ensheathing callus*, which is subsequently ossified by the growth of the periosteal osteoblasts spreading over the mass. The medulla becomes plugged with granulation tissue or *internal callus*, and this, as well as the granulation tissue lying between the fragments of compact bone, becomes ossified, the bone cells of the compact tissue probably proliferating to take part in the repair." (*Aids to Surgery.*)

10. *The line of demarcation* is an inflammatory zone of living tissue at the border of a gangrenous area

(To be concluded.)

The Batericidal Substance in Leucocytic Extract.—W. H. Manwaring has found that the bactericidal agent extracted from horse leucocytes is apparently precipitated quantitatively by full saturation with ammonium sulphate. The bactericidal agent is apparently precipitated by absolute alcohol, and is not rendered insoluble by a short contact with alcohol. The agent resembled in this feature certain enzymes which can be isolated and purified by alcoholic precipitation.—*Journal of Experimental Medicine.*

Miscellany.

"Lawyers and Phisitians."—This is the quaint title of an essay by a writer who signs himself "X." Montaigne is quoted as follows: "'Ferdinando, kinge of Spaine, sending certaine colonies into the Indies, provided wisely that no lawyers . . . should be carried thither, judging with Plato that lawyers and phisitians are an ill provision for any countrey.' Whence it would appear that, since 'Ferdinando, kinge of Spaine' did not prohibit the conveyance of physicians to his new colonies, he was of opinion that lawyers were the greater of the two ills." On the other hand, Cabbett believed that the lawyer "in defending the property of the feeble or the incautious against the attacks of the strong and the wiles of the crafty; in affording protection to innocence, and securing punishment to guilt; has in the affairs of men and on their condition in life a much more extensive and more powerful influence than can arise from the application of surgical or medical knowledge." The quotations serve as an introduction to the remarks by the author on the subject that has recently been enjoying the attention of a committee of the House of Commons, namely, the sale of patent medicines. It is urged that whereas physicians should demand a fitting reward for their services, they should temper this demand with discretion. "Perhaps it is because our daily task is with mankind in the moments of weakness that we are apt to realize the dependence of others upon us more vividly than we do the limitations of our functions and powers in relation to the outside world. In the sick room we are paramount. Discussion there has no place and the just assertion of authority is becoming. But, when our rights and privileges, as we conceive them, come into conflict with those of others, the mantle of mere authority that we sometimes assume falls from us." It is pointed out that all will agree that the sale of articles devised to further the commission of criminal offences and that the sale of articles by means of fraudulent pretences should be penalized. "But if we invoke the interference of the State to restrict the sale of gray powder and iron pills or aloetic aperients merely because certain manufacturers give their preparations attractive names and sell them more cheaply than a doctor can dispense them, we must, as a lawyer would say, show cause." Except in rare instances people do not take patent medicines when seriously ill and are quicker to detect arrant imposture than one imagines. Not all the claims put forward by the vendors of proprietary articles are extravagant. "If we are to set up arbitrary standards and condemn as quackery everything we can't explain (coming from unorthodox sources, *bien entendu*) we run two grave risks. We run the risk of discredit with the public when we have to revise our standards in the light of fresh knowledge; and we run the risk of having, in the alternative, as the lawyers say, to perpetuate, Chinese fashion, a face-saving orthodoxy." One "may be tempted to forget that there is often some truth in heresy and error in orthodoxy."—*The Universal Medical Record*, September, 1912.

Plato on Contract and Dispensary Practice.—F. W. Jollye notes that even in ancient days there were two classes of practitioners who were supposed to treat their patients differently according to whether they were club or private patients, and these two classes of medical men were consequently held in very different esteem by the public. Plato in one of his dialogues refers to the two sorts of doctors as follows: "The slave doctors run about and cure the slaves or wait for them in the dispensaries; practitioners of this sort never talk to their patients individually or let them talk about their own individual complaints. The slave doctor prescribes what mere experience suggests, as if he had exact knowledge, and when he has given his orders like a tryant, he makes off with equal assurance to some other servant who is ill, and so he relieves the master of the house of the care of his invalid slaves. But the other doctor, who is a freeman, attends and practises upon freemen; he carries his inquiries far back, and goes into the nature of the disorder; he enters into discourse with the patient and with his friends, thus at the same time getting information from the sick man and also instructing him as far as he is able, and he will not prescribe for him until he has first convinced him; at last, when he has more and more brought the patient under his persuasive influence, and set him on the road to health, he attempts to effect a cure. Now which is the better way of proceeding in a physician and a trainer? Is he better who accomplishes his end in a double way, or he who works in one way, and that the rude and inferior?"—*The Lancet*, September 28, 1912.

The Teaching of Medical Economics.—A. H. Madry believes that every medical school should give a course in medical economics. The future physician should be taught that while the acquisition of wealth should not be his dominating motive, the satisfaction of duty well done is *not* to be the sole recompense, and that he who discharges faithfully the duty entrusted to him deserves a financial reward commensurate at least in part with the labor performed. It is the failure of this adequate reward that is the real cause of inefficiency and unethical living among professional men. Too often the physician begins his career with high ideals and well equipped for his duties and responsibilities save for a knowledge of the value of his services. The want of this knowledge permits the confiscation of his earnings and compels him to turn his attention to speculative and commercial enterprises, or to launch out into the uncharted sea of irregular medicine. Proper instruction in economics will teach the future physician the conservation of resources that strengthen character, build professional reputation, and inspire self-confidence; and at the same time this instruction will enable him to give to the world the happiness and prosperity it has a right to expect from his labors.—*Journal of the Missouri State Medical Association*, September, 1912.

Seven-Inch Tires.—Seven-inch pneumatic tires are now being used on the rear wheels of the automobiles in the service of the Detroit Police Department, and after a test of about 5,000 miles the tires are in good condition.—*Automobile Topics.*

New York's 1913 Tags to Be Purple.—According to news from Albany another attempt is to be made to solve some of the license plate problems that have been bothering the State of New York for several years. Next year's plates have been contracted for, 90,500 pairs having been ordered. The background will be of dark, purple, with raised letters in white. Each plate will bear "1913" and if for a motor truck will bear in addition the word "Commercial." The latter change has been made in order to prevent the use of the $5 commercial car license for pleasure cars, licenses for which cost from $5 to $25.—*Automobile Topics.*

Medical Record

A Weekly Journal of Medicine and Surgery

Vol. 82, No. 16.
Whole No. 2189.

NEW YORK, OCTOBER 19, 1912.

$5.00 Per Annum.
Single Copies, 15c.

Original Articles.

THE SYPHILITIC PSYCHOSES.

BY FRANCIS M. BARNES, JR., M.D.,

WASHINGTON, D. C.

CLINICAL DIRECTOR, GOVERNMENT HOSPITAL FOR THE INSANE AND INSTRUCTOR IN PSYCHIATRY AND NEUROLOGY, GEORGE WASHINGTON UNIVERSITY.

"SYPHILIS is one of the most important etiological moments in psychopathology." This poignant statement made by such an experienced observer as Ziehen[1] merits the most attentive and careful thought on the part of all medical men and especially of those interested in psychiatry and neurology. During the early centuries following the spread of the Neapolitan sickness northward throughout continental Europe, sporadic mention of the possibility of syphilitic lesions within the central nervous system is met with in the literature. Under the sway of the doubt of the authoritative Hunter medical opinion veered from this trend until the work of Virchow and Hübner toward the end of the nineteenth century conclusively demonstrated that syphilis of the internal organs, of the brain, was a definitely recognizable pathological condition. Following this period advances in accurate knowledge of disease dependent upon this infection were comparatively slow until within the past few years, during which time developments in biological methods have rendered our progress tumultuous. Close upon the serological test of Wassermann follows the cutaneous reaction of Noguchi, which, though but recently in the field, bids fair to offer even more delicate aid than the method of complement fixation.

Such advances in our ability to recognize the existence of a latent, though possibly potentially virulent syphilitic infection, have obviously served to attract a vast amount of attention and profitable study toward the enormous pathological potential of syphilis and particularly toward those abnormalities of function associated with syphilitic lesions of the central nervous system, especially the mental disorders. So great has been the zeal in this latter direction that at times it is quite apparently forgotten that in dealing with such a widespread disease as syphilis, mental disorder occurring in a syphilitic does not necessarily mean that such mental disorder is a result of the syphilis, the question of coincidences as well as cause must receive due and proportionate attention.

An idea which is rapidly gaining currency is that syphilis, particularly syphilis involving the central nervous system, is becoming more prevalent. While statistics tend to bear out this belief, and it is a matter of common knowledge that such evidence is notoriously unreliable concerning this disease, it must not be forgotten that our added diagnostic ability may, in part at least, explain the apparent increased incidence of the infection and its subsequent manifestations. It is, in fact, noted that syphilitic diseases of the central nervous system are more often observed than formerly, whereas the malignant form of syphilis, particularly that affecting the cutaneous and skeletal tissues, is becoming less frequent. From this the question has been raised (Graves[2]) whether this infrequency of the latter form of malignant syphilis does not indicate that our population is acquiring a relative immunity from such forms because of the general syphilization of the race, this immunity being acquired at the expense of other structures of the body and especially the nervous system. But may we not find an explanation for this along broader avenues of approach? Cannot the application of the principle of biological racial differentiation be of aid here as well as in the study of the development of mental disorders in general? History shows that mental disorders in a given race increase in frequency of occurrence in direct proportion to the progress of biological differentiation—the increment is not a steady one, but rather expresses itself in the form of a curve, the lower levels representing the periods of heightened physical development during which the incidence of mental alienation is low, while the peaks indicate epochs of intense organization and specialization with the logical concomitant, increased mental stress and its associated natural result, more frequent mental breakdown. If there is any justification for the belief so often expressed, that syphilization and civilization run in parallel courses, we should not be surprised to find its proof at the present day. In brief, then, it would apear that we may expect the psychotic moment to become intensified when the pressure of activity is unequally distributed and is associated with imperfect or incomplete development and asymmetry or disharmonies in individual make-up. It appears very probable that in just this sort of ontogenetic defect we may find a partial answer to the question—why is it that one syphilitic develops, as a result of the infection, a mental disorder, while a second does not? One explanation has been sought in the postulation of an especial strain of syphilitic virus which possesses a particular affinity for nervous tissue, but the assumption of a *lues nervosa* has not received sufficient or convincing substantiation (Hübner[3]). It is very patent that aside from the syphilitic virus there must be other factors which are coactive determinants in the production of the psychosis. From analogy, perhaps, it becomes almost as obvious that here must be considered principally the mental make-up upon which the syphilis has become a modifying factor—the soil upon which the seed has fallen. It has been observed (E. Meyer[4]), that the symptomatology of certain nervous system disorders is made more intense by a subsequently acquired syphilis. We know, too, that there are constitutional psychopathies which predispose the individual to frank mental upsets which do not

occur in more normally constituted mental organizations under similarly unfavorable circumstances. Quite recently Czarnicecki[5] has observed that the symptomatology of dementia precox may be markedly modified by a superimposed cerebral syphilis as somewhat similarly Graeter[6] has demonstrated clearly the active rôle of alcohol in bringing into full bloom a latent precox. In the foregoing particular reference is made to the effects of an acquired lues. But also our appreciation of the ravages of this disease among the progeny of syphilitic antecedents is gaining ground in the medical mind. The more evident signs of an inherited lues, such as Hutchinson's teeth, rhagades, snuffles, interstitial keratitis and the like, are no longer the only criteria upon which judgment may rest. We now recognize that syphilis in the parents may be the cause of more generalized deviations from the normal in the progeny, the organism, as a whole or in certain particular respects, shows marks of weakness revealed in both physical and mental characters showing evidences of varying grades of imperfect and incomplete developmental growth or disharmonies and asymmetries expressive of illy balanced, one-sided products. The *Treponema pallidum* is no respecter of age, sex, or class, and, taking into consideration this markedly deleterious influence which it may exert upon the progeny, it is easily to be seen that the rôle which it plays in the fertilization of the soil from which mental disorders of varied types may take root and flourish is a leading one among the etiological factors in psychical disorders.

With the specific laboratory methods which we have as diagnostic aids it might appear at first glance that the recognition of a syphilitic process active within the tissues of the central nervous system was merely a matter of technique. Only too frequently the opposite state of affairs exists, and particularly in affections of the brain which make themselves known in more veiled forms through psychical manifestations than by physical signs. The internists have taught us that syphilis has but little originality, that it is the imitator *par excellence*, but it is only recently that this has been more extensively recognized by those interested in mental medicine, and that it has been appreciated that there is no mental symptom-complex which may not owe its existence to a syphilitic infection. In dealing with mental disorders, the psychiatrist has to face an entirely different problem from that which confronts the surgeon who meets with a case of appendiceal inflammation. To the contrary, he has to deal with processes which do not permit of immediate examination, and consequently it is largely by deduction derived from observed outward manifestations of cerebral activity that conclusions may be drawn. In the past it has been customary to recognize correctly those forms of cerebral syphilis with which occur the more prominent physical signs such as are dependent upon the more circumscribed and focal lesions, particular stress having been laid upon the occurrence of the epileptoid attack or its equivalent varying period of lowering of conscious threshold. The mental symptoms accompanying such conditions have received but scant attention, as a rule being looked upon as the unimportant and variable accompaniments of the more frequent, more evident and more tangible neurological disturbances. It certainly has not been so well appreciated that mental disturbances of varied types may be associated with cerebral syphilis when the focal signs may be entirely absent or may only occur at a time when the disease is clinically far advanced, thus assuming a rôle of secondary importance. More recent studies of the direct or remote effects of syphilis upon the functions of the central nervous system have shown that many of our former conceptions and conclusions must be altered and some entirely discarded. Further observation is needed before generalizations may be reformulated and at the same time by a more careful study of individual cases, there is a greater possibility that, should there be any characteristic symptom-complex expressive of the different pathological types of cerebral syphilis, it may be recognized and given definite form.

It may be well at this point to mention briefly the various mental symptom-complexes that in the past have been described as characteristic of cerebral syphilis. The principal types recognizable to-day were set forth in very good clinical descriptions nearly half a century ago by Wille[7] and it is largely due to the more recently forced recognition of the pathological potential of syphilis, acting upon the central nervous system to produce disturbances of function that the term "syphilitic psychosis" has come to occupy its present prominent position. It has, as it were, within the past few years, been *rediscovered*. It is quite apparent, also, that not too definite or fixed limitations have enclosed the group of cases thus rubricated. Here, as in every opinion based upon unsatisfactory observations, the greatest diversity obtains. On the one hand, by some, disease pictures are described as characteristic of cerebral lues; on the other, it is denied with equal decisiveness that there exists any such symptom-complex and it is asserted that there is absolutely nothing characteristic unless it may be the banality of the ultimately resulting demential process. However, to express briefly our conceptions of the etiological rôle of syphilis in the production of mental disorder, without restriction to any particular or supposedly characteristic type of psychotic disturbance, the term syphilitic psychosis possesses a definite value.

Among the earlier works attempts to delineate a characteristic abnormal symptom-complex dependent upon cerebral syphilis resulted in the description of certain depressive and anxiety states, *e.g.* syphilophobia or a more generalized hypochondria, which were to be looked upon as prodromal phases of the syphilitic psychosis, the concluding picture of the series being a progressive deterioration. Besides this hypochondriacal introduction, it was recognized (Wille[7]) that the ultimate dementia might be preceded by an excitement, a delirium, or mania. The important point is that these abnormal mental states presenting themselves early in the disease were looked upon as the initial symptoms, only stages in a developing picture, and yet an attempt was made to segregate them as separate types of mental disorder characteristic of syphilitic processes involving the brain. Thus it was that the terms syphilitic melancholia, hypochrondria, paranoia, amentia, and dementia had their origin, the last being found so frequently in brain syphilis that almost all writers agreed that it was the characteristic symptom of all mental disorders associated with syphilitic alterations in the brain. By simply modernizing the above terminology and making a few slight alterations it will be found that a practically similar grouping under subheadings is in use to-day.[8]

A more definite tendency in this direction is evidenced in the syphilitic neurasthenia described by

Jolly[9], although he, too, recognized that this neurastheniform reaction often paved the way for more or less serious forms of mental disease. Although placing especial stress upon these psychoneurotic states, Jolly likewise recognizes the other types of mental disorder which may accompany luetic infection, that is, the paranoid, amential and manic or delirioid states, speaking of these as the more severe symptom-complexes. We do not have to deal here with mild, depressive reactive types of mental disturbance developing in persons at the time of primal awareness of luetic infection, but rather with those more aggravated states, during which there are complaints of headaches, transient and ephemeral confusional periods, fainting sensations, difficulty in recalling words and events, fleeting pains generalized in distribution, numbness in legs or general feeling of fatigue and exhaustion—the neurasthenic syndrome. There is quite apparently reasonable cause for doubting the existence of any such definite symptom-complex bearing a causal relation to syphilis, excepting in so far as it may occur as an introductory phase, as above indicated. It is, indeed, in this instance a difficult task to separate coincidence from cause. An outspoken neurasthenic attack in an individual having a predisposing tendency and an asymmetrical mental organization may no doubt be precipitated by a syphilitic infection. But the syphilis itself is not directly the prime factor—it is but secondary, merely an exciting agent. On the other hand, it is by no means infrequent that we meet with a neurasthenic onset in cases of cerebral syphilis and paresis. The examination of the spinal fluid and blood serum has been a reason for the numerical reduction of diagnosis of neurasthenia in the incipient states of such conditions. To separate a group of symptoms which occurs as a prologue to a definite disease, to speak of this as an entity under the term "syphilitic neurasthenia" can, however, accomplish no possible good. Such attempts to single out certain prominent features in the varied and multiform symptomatology of those psychotic states arising as a result of, or at least in connection with, luetic cerebral lesions, and to group these into the formation of a clinically recognizable symptom-complex have not been infrequent.

However, the classification of the different clinical manifestations of brain syphilis is not a matter of prime importance, so that we can afford to lay this aside for the moment and turn to a consideration of our ability to recognize that a given mental disorder is dependent upon syphilis. The difficulty in distinguishing coincidence from cause has been mentioned. What differentially diagnostic data do we possess that may aid us in this regard? With those mental diseases which are associated with gross destructive lesions of the brain, the diagnosis may be made with a feeling of greater security and accuracy. Yet even in connection with that paradigm of organic disease, paresis, we have recently come to recognize many of the formerly unappreciated difficulties which confront the clinician, and we have been surprised to find how great our error has been in this one type. Although it may be true that there are several forms of what may be spoken of as the pure type, wherein a reasonably certain diagnosis may be made, a still greater number remain obscured by their close resemblance to other forms of mental disorder of functional or non-specific organic character. Mental disorders developing within the devolutional epoch, those dependent upon arteriosclerosis and senile changes offer heretofore unsuspected difficulties in differentiation. In addition it is found that syphilis of the brain may occur in an individual in combination with or superimposed upon another mental disease, such as dementia precox. In other communications[10] detailed case records illustrating these various difficulties have been presented with emphasis upon the fact that often the solution of the problem must be of necessity turned over to the pathologist.

However, certain criteria have been set up to aid the recognition of psychotic states originating upon a syphilitic basis, which may be briefly reviewed to advantage. In correlation with the anatomical findings, it is thought that the mental disorders associated with the acute and subacute meningoencephalitic forms of cerebral syphilis are much better recognized clinically than are the more chronic types. The latter are more frequently mistaken for arteriosclerotic psychoses or paresis. This may be because many of the simple demential forms occur as an expression of the chronic meningoencephalitis. When one recalls the great variety of anatomical lesions which may be produced by syphilis in the central nervous system, inflammations of the membranes, especially of the base, gummatous formations and the very frequent vascular changes, it might be expected that from such anatomical substrata multiform clinical manifestations might arise. Also, it might be expected that attempts to correlate the anatomical and clinical findings would be met with great difficulties and uncertainty. Krause[11] believes that with the basal type of brain syphilis the mental symptoms are of secondary importance and occur at a comparatively late period in the disease. With the meningoencephalitic forms involving primarily the convexity the psychical symptoms appear early—there are stupidity, confusion, sleepiness (sopor), delirium, with rapid transition into dementia. Also, the course may be more chronic, the dementia appearing later. Irritative signs are characteristic of this localization. The arterial forms are, like the former two, associated with headache; fainting and stupid episodes occur. On the mental side there is to be noted a decrease of mental activity, irritability with tearful affect changes. The alternation from periods of clear consciousness to those of death-like coma and the half waking, half dreaming states often associated with motor activity are looked upon by some as very characteristic of the arterial form.

Although such correlation may be found to exist in many cases, it must not be forgotten that the lesions of cerebral syphilis are not necessarily, and often are not, in fact, of one given variety; there may be combinations and mixtures of the several types. This is clearly stated by Mott[12] when he says that active syphilitic meningitis, arteritis, and gummata all may occur simultaneously, successively or progressively over the whole cerebrospinal axis. Surely one may not confidently anticipate a clear-cut symptomatological expression of such an anatomical *mélange*. From the purely clinical standpoint the following features are considered of importance in this diagnosis. Firstly, in the course of the disease are seen distinctive features—the prolonged prodromal stages, the long duration, the varying progress, and the long remissions. As compared with other demential processes, there is a greater degree of preservation of the personality with retention of a fair amount of autocritical ability. Also, orientation is not greatly impaired as in the more

generalized deteriorating psychoses, such as senile dementia and paresis. Memory defects, especially for recent occurrences, in some cases are quite prominent. A diminution in attention may no doubt explain in part this defect, and also, as well, the observation that these patients as a rule do not acquire new ideas. The defects when noted are prone to occur in lacunar fashion and affect certain spheres more markedly than others, the demential process being more elective in its attack rather than lowering intelligence as a whole. The affect is possibly capricious, unstable—depression, excitement, apathy, and indifference may alternate rapidly. Somnolent, drowsy, semicomatose conditions of consciousness which are highly significant are not uncommonly observed from which, after varying periods, the individual may emerge into an approximately normal state of uncertain duration—a remission. Hallucinations and delusions may dominate the picture or occur sporadically, the content of the latter being not infrequently of a paranoid character, the hallucinations often lending support to the persecutory beliefs. Accompanying these psychic abnormalities are to be noted the many motor disturbances which follow in the train of variously located focal lesions.

The differential diagnosis between paresis and its imitator—diffuse cerebral syphilis, or syphilitic pseudoparesis—has recently received abundant attention and needs no detailed mention here. The distinction must in the last analysis very frequently be left to the pathologist. Clinically the differentiation is in some instances quite impossible. Even the serological examinations of the blood serum and the results of spinal puncture may offer insufficient data on which a final decision may rest. Now that this difficulty is more fully appreciated and the clinical similarity of the two conditions are kept more constantly in mind, it is but natural that errors should become less frequent than formerly.

The foregoing presentation of some of the clinical difficulties associated with the recognition of mental disorder dependent upon cerebral syphilis brings to light one general need, namely, that there is necessary for the more accurate knowledge of these mental disorders more definitely delimited and concise clinical descriptions, not alone of the syphilitic psychoses, but likewise of those included within the terms arteriosclerotic and senile dementias. We are possibly too prone to dodge the issue by keeping before the mind what may be called a type case and blanketing all apparently insignificant variations from this type under such convenient phrases as atypical, allied to, etc. It is just these so-called atypical features that should merit the closest attention, for by such intensive study we stand to gain a closer insight into the underlying process.

In considering the possibility of syphilitic etiology in the case of one suffering from mental disorder, the following points should be borne in mind:

1. There is no mental symptom-complex characteristic of syphilitic disease of the nervous system.

2. Many types of psychoses may be simulated by mental disorders caused by syphilis.

3. Cerebral syphilis may develop in a brain already affected with mental disorder and may occur in conjunction with other organic diseases of the brain.

4. Paralysis, paresis, and convulsive episodes may be absent in cases when mental disturbance is due to syphilis.

5. The differential diagnosis *intra vitam* is frequently difficult and often impossible.

REFERENCES.

1. Ziehen: "Psychiatrie," 4th Ed., Leipzig, 1911.
2. Graves: "The Scaphoid Scapula," etc., MEDICAL RECORD, 1910, May 21, 1861.
3. Hübner: "Zur Lehre von der Lues Nervosa," *Berliner klinischer Wochenschrift*, 1906, xliii, 1448.
4. Meyer, E.: "Untersuchungen des Nervensystems Syphilitischer," *Berliner klinischer Wochenschrift*, 1907, xliv, 943.
5. Czarniecki: "Démence précoce et Syphilis," *Arch. Internat. de Neurol.*, 1910, 7s. i, 242, 305.
6. Graeter: "Dementia præcox mit Alcoholismus chronicus," Leipzig, 1909.
7. Wille: "Die Syphilitischen Psychosen," *Allg. Ztsch. f. Psychiat.*, 1871-2, xxviii, 503.
8. White and Barnes: "A Plan for Indexing Cases in Hospitals for the Insane," Second Paper, *Amer. Jour. of Insanity*, 1912, lxix, 97.
9. Jolly: "Syphilis und Geisteskrankheiten," *Berliner klinische Wochenschrift*, 1901, xxxviii, 21.
10. Barnes: "Mental Disorders Associated with Brain Syphilis," *Amer. Journal of Insanity*, 1912, lxviii, 633; and "Errors in the Clinical Diagnosis of Mental Disorders Associated with Cerebral Syphilis," Bulletin No. 4, Government Hospital for the Insane, Washington, D. C., 1912.
11. Krause: "Die Erkrankungen des Nervensystems in folge von Syphilis," *Deutsche Militärorztl. Ztschr.*, 1907, xxxvi, 820.
12. Mott: "The Diagnosis of Syphilitic Diseases of the Nervous System," *British Medical Journal*, 1909, i, 1403.

SURGICAL PSYCHOSES.

By J. EWING MEARS, M.D.,

PHILADELPHIA.

WITH some misgivings as to the correctness of the title chosen, I desire to place on record several cases which, in my earlier surgical experience came under my treatment. They possessed interest possibly, in a neuropathic sense rather more than from a surgical viewpoint; their treatment, however, belonged to the surgeon, and for this reason they may be properly classed as surgical in character. They illustrate also the methods of treatment employed nearly two score years ago, and as well, in their varied features, they assisted to build good foundations on which some of the popular and absorbing creeds of the modern days have erected their stupendous structures of fantastic beliefs and practices.

Differ as we may in opinion with the followers of these schools of belief, real or fancied, and condemn as we must the harmful influences exerted, not only upon the individual, but upon the community, by their practice, we are constrained to believe that the person, male or female, especially the latter, who seriously lives in the belief that he or she is *sick*, is to all intents and purposes, sick, mentally sick, and is a legitimate subject for the most skillful methods of treatment in the power of the most learned and most observant practitioner of scientific medicine to administer. In any case and under all conditions treatment based upon erroneous diagnosis is disastrous, alike to the patient and to the disciple of medicine. To the former the failure of beneficial results makes them an easy prey to the alluring promises of the nostrum venders, professional and lay, who fill the world with their panaceas, banking in more than one way upon the credulity of the victim, whose faith, once shattered in the effort of an honest medical profession, refuses to accept its dogmas or to be placed again under its protecting ægis.

In the summer months of a year now gone two

score, I was asked to see the patient of an eminent physician who was spending the season abroad. I found the patient to be a young lady of some eighteen years residing in an attractive suburban home, enjoying all of the luxuries and comforts that the wealth of her parents could provide. The history given to me at the time of my visit was to the effect that for a period of seventeen months she had been confined to her bed suffering from an abdominal tumor and from a flexed condition of the left knee joint, the limb involved being on the same side as the abdominal swelling. There was no history of pain and suffering located either in the tumor or in the affected joint. The tumor when recognized occupied the left ovarian region and had increased but little, if any, in size since its discovery. The state of flexion in the knee joint had come on gradually and was unaccompanied by any increase in size of the joint—it exhibited simply a state of ankylosis, which could not be influenced by the efforts, apparently made by the patient. The facies of the patient was that indicating a normal state of health—nutrition did not seem to be impaired.

A disturbed nervous condition had, I was informed, ushered in the state of invalidism, but the symptoms had largely subsided under the treatment by bed rest and possibly, by remedies directed to the condition present. The respiratory and circulatory systems were in normal state and the functions of all organs were in harmony with the life of inaction which the patient had led for so long a period of time. In the quick movements of body and the manner of speech there could be detected evidences of a perturbed nervous condition, which may have been somewhat due to the presence of a strange medical adviser.

An examination of the abdominal enlargement revealed the presence of a circumscribed swelling about the size of the ordinary grapefruit, firm and immovable. Apparently, the overlying abdominal wall was involved in the mass. Deep inspiration and forced expiration caused the swelling to move synchronously with the movement of the superincumbent muscular walls of the abdomen. The slight effort at percussion, which the resisting efforts of the patient permitted, did not elicit any conditions of fluctuation. None but the gentlest manipulation was permitted by the patient, making it quite impossible by either auscultation or percussion to derive any very positive information as to the character of the apparent growth.

An examination of the flexed knee-joint showed a state of flexion at nearly a degree beyond a right angle. Compared with the joint of the right limb there was no evidence of difference in size beyond the condition of asymmetry found so frequently to exist between the right and left lower extremities of the anatomically normal individual; there was no pain produced by pressure. The muscles of the thigh and of the leg were found under palpation to be tense, firm, and resisting. All motion in the joint seemed to be impossible by any effort of the will of the patient. Attempts made by forced extension to straighten the limb were met by exclamations of suffering and a still further state of tension in the muscles of the extremity at once took place.

Failing to obtain satisfactory information from the examination I was permitted to make with regard to the apparent pathological conditions which were present, I stated to the mother of the patient who was present that it would be necessary to administer ether to her daughter in order to remove any resistance on her part, and to facilitate the examination required to be made to determine the nature of the abdominal growth and of the flexed knee-joint. To this proposition the patient strenuously objected. When urged to express her reasons for the refusal to be placed under the influence of ether she stated that patients who took ether "talked when they were asleep." In this attitude of belief she persisted, although informed that all statements which she might make when in a state of anethesia would be held in strict confidence by her mother, and that her medical adviser was forbidden by professional ethics from betraying any secrets divulged by patients under any conditions. After some discussion a compromise was effected, the patient agreeing "to take chloroform," under the influence of which she stated patients did not talk. The dangers incident to chloroform inhalation were fully explained, and were lightly dismissed by her when considered in connection with the other and greater dangers of "talking when asleep."

On the day following I visited the patient and placed her profoundly under the influence of ether, the medical knowledge of the patient not extending to such a degree as to render her able to recognize any difference in the character of the anesthetic agents. Fully satisfied that she would not talk while asleep under the influence of chloroform, she did not talk, and no important secrets were divulged while in a state of anesthesia under the influence of ether. When completely anesthetized the abdomen was exposed and on inspection the swelling was found to have disappeared—the most careful examination failed to discover any abnormal condition—the abdominal walls were flaccid and deep palpation could be made without showing the presence of any disease of the ovary or of associated organs. Under the relaxing influence of the anesthetic agent the limb had resumed spontaneously a straight position—by manipulation of gentlest kind it could be flexed and extended to the fullest extent—no grating sound was evoked by movements and in all respects the joint was found to be normal.

Waiting until full consciousness of the patient was accomplished, I observed that the conditions of abdominal swelling and flexure of the knee-joint returned with a somewhat abrupt effort on her part, and with a facial expression indicating that some disclosures had been unwillingly made. Two days later I visited the patient and informed her that the examination which had been made gave undoubted evidence that the conditions from which she was suffering were amenable to treatment, without the need of any surgical procedures, which I was informed had been advised by a prominent gynecologist and surgeon who had been called into consultation, and who had made an examination without the aid of an anesthetic. In accomplishing her restoration to normal health, I stated that it was absolutely necessary I should have her confidence and active cooperation, to which proposition, after a gentle suggestion that it might prove a shock and, possibly, a grief to her family to learn the exact nature of her ailments, she gave acquiescence, with the saving remark that she would regard the divulgence of the character of her illness as, in a way, a flagrant violation of professional confidence on the part of the medical adviser. To this statement I cordially assented.

and began treatment with the administration of a mild tonic, massage over the abdominal swelling and of the knee-joint, with movements of flexion and extension practised daily to revivify, as it were, the muscular structures of the limb, and restore the normal function. In a few days the patient was able to leave her bed and was carried to the porch where she sat in an easy chair with the affected limb in an elevated position on a rest, thus testifying to the fact that it was the subject of a disordered condition. Later locomotion was aided by crutches, the employment of these agents being regarded as necessary to assist the bodily movements and to avoid a too rapid return to normal methods, which might excite the suspicions of observant friends who should be disposed to regard the quick convalescence as savoring of things miraculous. In due time came carriage drives over the beautiful country roads, with restful days in the open air in shady groves and a gradual return to participation in social enjoyments.

With the end of the summer season the patient returned with her family to the city home, in all respects in normal health. On the return of the family physician from his sojourn abroad, she greeted him in the reception salon instead of in her boudoir where he expected to find her, still a subject of grave surgical affections which might demand operative interference in the near future. Calling on me promptly for an explanation of the methods employed in accomplishing results which had apparently baffled his endeavors for so long a time, I handed him from my library shelves a monograph entitled "Phantom Tumors," contributed to medical literature by a distinguished medical author. "Hysterical Joints" might well have been discussed in the same pages—conditions which, even at that period of modern surgical practice, had claimed attention and study.

The second case, illustrating results which may be designated as following methods of practice popular in the day of which we write, I shall describe briefly and without detail. A woman, unmarried, approaching forty years of age, came to me from one of the interior cities of my State for surgical advice and operative interference. With the utmost sincerity and candor she informed me that she had been subjected to several surgical operations which, as she bluntly stated, had removed all of the organs of generation, clearing out the cavity in which they were contained and leaving nothing behind but the "stumps," as she expressed it. With the information she had given I informed her that nothing more could be done by any surgical operation and advised her to return home. She then stated that she desired me to remove the "stumps" which gave her pain and which she was determined to have removed. If I would not perform the operation, she asserted vehemently, she would consult an advertising surgeon whom she knew who would do it.

Feeling that I might help this deluded person, the subject of many surgical procedures, according to her statement, I sent her to the hospital to be admitted into the surgical ward under my care, instructing the interne to make a careful record of her case, to observe her condition from day to day, to keep her rigidly in bed, and to treat her as a gravely sick patient. On inspection a cicatrix in the abdominal wall was found and digital examination disclosed the fact that the neck of the uterus had been the site of operation. No definite information could be obtained by palpation as to the condition of other organs belonging to the generative system. Her mental condition was apparently normal and physically she gave evidence of being in good health. She was resolute in her determination to have the "stumps" removed. Keeping her under observation for a week's time, in which I studied the conditions present in her case, I decided to influence her perturbed mental state if possible by performing a *quasi* operation, very simple in character, but deemed to be sufficient to accomplish the purpose. For this purpose the patient was placed upon the operating table, an anesthetic administered, and a simple scratch was made with the scalpel over the site of the cicatrix in the abdominal walls. Dressings of an elaborate character were applied, the patient returned to bed and care taken by the attention given her to impress her profoundly with the important nature of the operation which had been performed and the necessity of great care in conducting her recovery. No permission was asked to inspect the "stumps" which she had so earnestly desired to have removed. She expressed herself as greatly relieved, and at the expiration of two weeks returned home to all intents and purposes cured.

I believe the method of treatment employed in this case was not only legitimate, but in every respect justifiable. While we cannot sit in judgment on the necessity for operative interference in her case to relieve conditions the character of which we know not, we can certainly say that she became the subject of mental perversions which would have jeoparded her life, possibly, by placing her in the hands of the advertising surgeon, or sent her into the fold of the prayer-healers as an unhelped subject of scientific medicine, to swell the growing army of believers enlisted as recruits from those hostile to its progress.

The third case was not under my immediate care. Asked to assist, by the surgeon to whom the patient came for advice, I was placed in general charge, and had an opportunity to study the case which presented such interesting features as to warrant record. The patient, a woman between forty and fifty years of age, of slight physical development, with evidences of progressive emaciation, gave a history of epileptiform seizures, the aura initiating the attacks taking origin in the thumb of the right hand and passed up the arm, as she described it, until it reached her head when the seizure would occur. The convulsive movements, she stated, were limited to the side of the body on which the aura took origin and were not accompanied by mouth frothing or inversion of the thumb so far as she knew. They occurred frequently and the hand, forearm, and arm were the seats of intense pain, the suffering, which forbidding doses of morphia—½ to 1 grain in amount—did not ameliorate, but which I was able to quiet with a syringe full of cold water hypodermatically administered—being so great as to have become unendurable, and she had determined, unless relieved by surgical operation, to take her life. She insisted upon the removal of the hand in which the trouble began and the surgeon decided, without consultation so far as I know, to comply with her request.

In her ordinary garments the patient took a seat in a straight-backed chair and her body was covered by a sheet to protect her dress from being soiled by blood. She refused to be placed under the in-

fluence of an anesthetic agent, asserting that it was her desire to see how the operation was performed and, presumably, to know that it was properly done. The fore-arm being exposed, the hand was grasped by an assistant, and without any attempts at cleansing the field of operation, amputation was performed at a point midway between the elbow and wrist-joint. Throughout the entire procedure the patient did not express any sensation of pain, holding her arm rigidly firm and watching, with apparent interest, the steps of the operation. During the period of convalescence from the operation, which took place favorably, no seizures occurred and the patient returned to her home in the country quite well satisfied that the operation would effect a permanent cure.

With the subsequent history of the case I am not familiar. A dissection was made of the part removed. With the exception of a possible swelling of the median nerve and its digital branches, there was no evidence macroscopically of any morbid condition which could have caused the intense pain complained of by the patient. Unfortunately, a microscopic examination was not made of a section of the nerve, which might have given information as to the presence of possibly degenerative changes following inflammatory attacks.

I make no comments upon the methods of treatment employed in the cases I have recorded. They seem to possess interest as subjects which suggest reflection on the part of the disciple of scientific medicine to-day, to increase, if possible, the sense of responsibility which rests upon him in recognizing not only his duty to heal the body, but to so minister to the mind in such cases as it may be needed, as will correct perverted states, and maintain the faith of those who may come to him for advice and counsel, in the integrity of purpose which the practice of the science of medicine confers. In this way only it would seem possible to erect impassable barriers to stop the progress of the advancing armies of disciples of dissembling creeds, whose banners bear escutcheons with the distorted legend, *"Non omnibus sed sibi."*

THE SIGNIFICANCE AND MANAGEMENT OF CHRONIC DISCHARGING EARS.*

By ALFRED BRAUN, M.D.,

NEW YORK.

VISITING OPHTHALMOLOGIST, WASHINGTON HEIGHTS HOSPITAL; ASSISTANT AURAL AND OPHTHALMIC SURGEON, MANHATTAN EYE, EAR, AND THROAT HOSPITAL; LECTURER IN LARYNGOLOGY, NEW YORK POLYCLINIC.

An abscess in any part of the body is regarded as a menace to the human organism, and a condition to be gotten rid of, as soon as possible, yet a chronic discharging ear, which is nothing more than a chronic abscess in the middle ear, and the adjoining bony cavities, is often regarded with complete indifference, not only by the laity, but even by many physicians. It is a common superstition among the laity, that a discharging ear should be left alone. The discharge is supposed to be the "badness" which is coming out of the child, and it is dangerous to stop it. The origin of this superstition is very evident. It is a well-known fact, that intracranial complications of ear disease are usually accompanied by a cessation or diminution of the aural discharge. This is due to blocking of drainage from the middle ear. But it is an entirely different matter to go to the seat of the trouble, and eradicate the disease.

This indifference is shared by many physcians. When their attention is called to the presence of a running ear, by the parent, they will often say that as long as it doesn't bother the child, it is best to leave it alone, as the child will probably outgrow it.

All physicians recognize the seriousness of suppuration in the nasal accessory sinuses, and nobody would hesitate to advise interference, as soon as a diagnosis of accessory sinus disease is made; yet suppuration in the middle ear is a much more serious condition, as there are many more vital and important organs in relation with the middle ear, than with the nasal accessory sinuses. Intracranial complications are much more common with middle ear disease, than with accessory sinus disease.

The roof of the middle ear is a thin plate of bone, no thicker than paper. This is all that separates the middle ear from the temporo-sphenoidal lobe of the brain. Erosion of this plate of bone results in epidural abscess, brain abscess or meningitis. The

Fig. 1.—Longitudinal section of the right temporal bone (schematic) T, Tympanic cavity; AD, aditus; AN, antrum; CR, cranial cavity; F, facial nerve; C, internal carotid artery; J, jugular bulb; S, lateral sinus.

mastoid cells are separated by a thin plate of bone from the lateral sinus and cerebellum. Erosion of this plate of bone may result in perisinus abscess, sinus thrombosis with pyemia, cerebellar abscess, or meningitis. The oval window leads into the vestibule of the internal ear, and the round window, into the cochlea. Disease spreading through either of these two openings, or through the horizontal semicircular canal, which lies exposed in the aditus, leads to suppuration of the labyrinth, with complete deafness, and a possible extension of the disease through the internal auditory meatus, to the posterior fossa of the skull, with meningitis or cerebellar abscess.

Under the posterior portion of the floor of the middle ear, lies the jugular bulb, extension to which, may cause thrombosis of the bulb, with pyemia. Below and internal to the tympanic orifice of the Eustachian tube, lies the internal carotid artery, erosion of which, causes uncontrollable hemorrhage.

*Read at a meeting of the Bronx Medical Society, March 13, 1912.

Passing along the inner and posterior walls of the middle ear, is the facial nerve, exposure of which, causes paralysis of one side of the face.

In the face of all these possible dangers, it is perfectly evident that no case of middle ear suppuration should be allowed to go on unchecked.

What are the factors which tend to prolong an acute middle ear suppuration, and transform it into the chronic form? One of the most important factors, is the presence of hypertrophied tonsils and adenoids. This lymphoid tissue contains septic material, which gives rise to repeated infection of the middle ear, through the Eustachian tube. The child is scarcely over one attack, when there is a second infection. After a time, the mucous membrane in the middle ear is so changed, that a condition of chronic suppuration is set up. Another way in which adenoids act, to prolong the middle ear suppuration, is by interfering with proper drainage of the middle ear through the Eustachian tube.

Another factor in prolonging acute suppuration in the middle ear, is an extreme intensity of the infection, causing a destruction of the mucosa in certain areas of the middle ear, with a resultant necrosis of the underlying bone. This is especially apt to occur in the scarlatinal and diphtheritic infections.

A third factor, is the general condition of the patient. In an anemic, poorly-nourished child, with poor recuperative powers, the suppuration is very apt to become chronic. Syphilis or tuberculosis is sometimes at the bottom of a persistent suppuration.

A fourth factor is the extension of the suppurative process into the antrum and mastoid cells. It is claimed by many otologists that every middle-ear suppuration extends to the mastoid antrum. This may be so, but in a large proportion of cases the communication between the antrum and middle ear is so free that the pus in the antrum can drain freely through the perforation in the drum membrane. Where the passageway between the antrum and middle ear is very narrow, suppuration is apt to be prolonged.

Finally, the anatomical conditions within the middle ear have an important bearing on the prolongation of a suppurative process. In some cases of middle-ear suppuration, the disease expends most of its force in the upper portion of the middle ear, or epitympanic space. The communication between the epitympanic space and the middle ear proper is narrowed down very considerably by the presence of the major ossicles, the malleus and incus, and their ligaments. In addition to this there are, in some cases, folds of mucous membrane stretched between the ligaments and the walls of the attic, so that the epitympanic space is almost completely shut off from the middle ear proper. When the suppuration becomes localized here, the drainage is so poor that the condition is very apt to become chronic. This condition is recognized by the fact that the perforation is situated in Shrapnell's membrane, or by necrosis in the upper part of the annulus tympanicus, whereas the membrana tensa is normal.

What, then, are we to do when we are brought face to face with a case of chronic suppuration in the middle ear? In the first place, I think that a chronic running ear should be treated by the otologist only. I think that the general practitioner, if he learns how to use an ear speculum and a head-mirror, can do a paracentesis, and treat the simple cases of acute middle-ear suppuration; but in chronic middle-ear suppuration, the pathological conditions are so varied, and the possibility of latent intracranial complications is so great, that only the trained otologist is at all fitted to cope with the situation. And in many cases even the most skilful otologist fails to bring about the desired result.

The diagnosis of chronic suppuration of the middle ear is simple enough. The patient, or the parent of the patient, makes the diagnosis. But here, a word of warning. The statement of the patient will often mislead you in regard to the duration of the suppuration. Sometimes the discharge is so slight in amount that it does not flow out of the canal, and the patient is not aware of the suppuraion. If, in the course of the suppuration, the pus increases in amount, the patient will tell you that his suppuration has lasted only a few days, whereas this is only an acute exacerbation of a chronic condition. The diagnosis as to the chronicity of the condition must be made by the appearance of the middle ear and the character of the discharge. In chronic cases

Fig. 2—Horizontal section of the left temporal bone (schematic): T, tympanic cavity; A, antrum; F, facial nerve; I, internal auditory meatus; C, internal carotid artery; S, lateral sinus; CO, cochlea; SS, superior semicircular canal; ES, external semicircular canal; PS, posterior semicircular canal.

the discharge is apt to be foul smelling, the membrana tympani is not acutely inflamed or swollen, there may be granulations in the middle ear, and necrotic bone may be seen or felt with a probe. The presence of cholesteatoma is a positive indication of a chronic middle-ear suppuration.

The cases of persistent chronic running ears are not the only serious ones. Just as serious, and often more so, are the cases of recurrent middle-ear suppuration. These are the cases where the patient has an attack of middle-ear suppuration every few months, or even every year or two. In the majority of cases, these are not individual acute attacks, but merely exacerbations of a chronic condition. In the intervals there are no subjective symptoms, but the disease-process is progressing all the time. Experience teaches us that it is in this type of cases that we are especially apt to get intracranial complications.

Having made our diagnosis of chronic suppurative inflammation of the middle ear, what is our

method of procedure? We must first, if possible, determine what is at the bottom of the continued suppuration. If there are hypertrophied tonsils and adenoids present, these should be removed. If the patient is poorly nourished and anemic, he should be built up and given tonic treatment. If tuberculosis or syphilis is present, the treatment suitable to these conditions should be instituted.

If, after having eliminated every possible underlying cause, the suppuration still persists, what are we to do? We can divide the cases of chronic suppuration into two classes, as far as the pathology, dangers, and treatment are concerned. In the first class, the disease is confined entirely to the mucous membrane lining the middle ear. This type may run on for many years, without extending any further, with no other symptom except the discharge, which is mucopurulent, or even purely mucous in character, and has no offensive odor. This class of cases can often be cured by simply keeping the middle ear clean. One of the best ways of cleansing such an ear is by dropping a few drops of peroxide of hydrogen into the middle ear, and after allowing it to bubble up for a few minutes, irrigating the ear with warm water. In the cases in which the attic is largely shut off from the middle ear proper, irrigation of the attic by means of a small cannula inserted into the attic through the perforation in the drum membrane may cure. I have seen cases of 15 or 20 years' duration dry up in a few weeks under such simple treatment.

In some of this type of cases the suppuration is undoubtedly kept up by repeated reinfections from the nasopharynx, through the Eustachian tube. These can be cured by means of the Yankauer operation. This consists in curetting the mucous membrane from the isthmus of the Eustachian tube by means of a specially constructed curette with a curved shank, which is introduced through the perforation in the drum membrane. This curettage is followed by a cicatricial closure of the tube at its isthmus, thus preventing any further reinfection of the middle ear from the nasopharynx.

The second class of cases consists of those in which, in addition to involvement of the mucous membrane, there is necrosis of the bony contents or walls of the middle ear and adjacent cavities. These are the cases which cause serious symptoms and often result in death. In the vast majority of these cases the disease is not confined to the middle-ear cavity, but involves also the mastoid antrum. In these cases the middle ear and external auditory canal simply serve as a means of exit for pus which is being formed in the mastoid antrum and cells, or even within the cranial cavity. Consequently it is foolish to hope to cure these cases by means of local treatment directed to the middle ear.

These cases of chronic middle-ear suppuration with necrosis are recognized by the appearance of the middle ear and the character of the discharge. The discharge usually has a very offensive odor. It may be thick and creamy, but is usually thin and brownish. It may be bloody, when there are granulations present. The perforation in the drum membrane is apt to be marginally situated, especially at the upper posterior margin, near the antrum, and the bony margin may be necrotic. The presence of granulation tissue in the middle ear or canal is usually indicative of necrotic bone. The necrotic bone may be felt by introducing a probe through the perforation into the middle ear. The presence of cholesteatoma always indicates extensive destruction in the middle ear and adjacent cavities. Cholesteatoma consists of a mass which lies in the middle ear and antrum, consisting of desquamated epithelial cells and cholesterin. It is recognized by its pearly white color and its foul odor. The odor is so characteristic that when once smelt, it is never forgotten. By mechanical pressure the cholesteatoma causes an erosion of the bony walls, and in this way the dura may be laid bare. It also forms a very excellent culture medium for bacteria.

In addition to these objective signs in the middle ear there are certain subjective symptoms which indicate a necrotic process in the middle ear and its adjacent cavities. There are periodic attacks of pain in the ear and side of the head; or the pain may be more or less constant. There may be headache. Vertigo, vomiting and nystagmus, with complete deafness, indicate that the disease has extended to the internal ear. Facial paralysis indicates necrosis of the bony covering of the facial nerve as it passes through the walls of the middle ear. There may be tenderness and swelling behind the ear, indicating the presence of mastoiditis. There may be symptoms of sinus thrombosis, brain abscess, or meningitis.

Ninety per cent. of cases of brain abscess are caused by suppuration in the middle ear. Practically all of the cases of thrombosis of the lateral sinus are caused by ear disease. A large proportion of the cases of purulent leptomeningitis is caused by ear disease.

The cases of middle-ear disease with necrosis cannot be relieved except by operative intervention. The operative intervention consists of one of several procedures: either ossiculectomy, the Heath operation, or the radical mastoid, of which there are two types, the Stacke and the Schwartze-Stacke. Ossiculectomy is efficacious in only a small proportion of cases. There are two classes of cases which are benefited by this procedure. First, the cases where the necrosis is limited to the ossicles. But we can never be sure that the necrosis has not extended to the walls of the middle ear and the adjacent cavities. Secondly, the cases where the attic is shut off from the middle ear proper, as the result of adhesions and granulations about the major ossicles, thus resulting in obstruction to drainage.

Ossiculectomy consists in the removal of the malleus and incus along with what is left of the drum membrane. It is not a perfectly harmless procedure, as some of the granulations in the middle ear may spring from the dura, and the removal of the granulations may start up an infective process in the meninges. In attempting to remove the incus, the stapes may be torn out of the oval window, and an infective labyrinthitis set up. The facial nerve may be injured, and a facial paralysis result.

The so-called "Heath" operation consists in opening up the mastoid antrum, and taking down the posterior canal wall, up to the annulus tympanicus, not disturbing the contents of the middle ear. The purpose of the operation is to conserve the hearing, if possible. It is based on the theory that a large proportion of cases of chronic suppurative middle-ear disease is kept up by suppuration in the antrum. But the surgical principle of the operation is bad. Good surgery demands the complete removal of all diseased tissues, whereas this operation deliberately leaves necrotic bone in the middle ear. The cases which get well, as a result of this operation, are either cases which would have gotten well as the

result of conservative intratympanic treatment or cases which would have gotten well with a simple mastoid operation.

After all, the vast majority of cases of chronic suppurative middle-ear disease with bone necrosis will not get well except with a radical mastoid operation. The two forms of radical operation are the Stacke and the Schwartze-Stacke operations. In the Stacke operation an incision is made behind the ear, as for a simple mastoid operation. The antrum is opened, the posterior canal wall is taken down, as far as the facial nerve will allow, thus making one cavity out of the middle ear, external auditory canal, and antrum. A portion of the roof, anterior wall, and floor of the canal is removed, so as to obliterate all recesses in the middle ear. The ossicles and all necrotic bone are removed. The posterior wound is then sewed up, and a skin-flap made in the meatus, and the entire bone cavity allowed to epidermatize. The Schwartze-Stacke operation consists in the removal of the mastoid cells, in addition to the above operation, and is indicated in those cases where the mastoid cells are diseased.

When you broach the subject of a radical operation to your patient, he will naturally ask what results you expect to obtain from the operation, and what are the dangers thereof. There are several points to consider. First, is the operation necessary, in order to save life? Second, will it stop the discharge? Third, will it improve or restore the hearing? Fourth, will it prevent the possibility of future intracranial complications? Fifth, what are the dangers of the operation?

In regard to the first point, there are several classes of cases in which the operation is a life-saving measure. These are the cases where chronic middle-ear suppuration is complicated by a mastoiditis, brain abscess, epidural abscess, meningitis, or disease of the labyrinth. A facial paralysis coming on in the course of a chronic middle-ear suppuration is an absolute indication for operation, as this is usually one of the accompaniments of labyrinthine disease.

In regard to the second point, as to whether it will stop the discharge, we must answer that it does not do so in all cases. But in the majority of cases persistence of discharge is due to an improperly performed operation. The operation must be so performed that all recesses and crevices in the middle ear are obliterated, so that there is no place for secretion to stagnate. With a complete, correctly performed radical operation, 90 per cent. of the cases should dry up. The remaining 10 per cent., even though they are not thoroughly cured, are usually so much improved that the patient is well satisfied, and does not mind the slight amount of discharge which persists.

In regard to the third point, as to whether it will improve the hearing, we cannot say definitely beforehand. In many cases the hearing is not changed much by the operation. Where the hearing has been very good before the operation, it is usually made worse by the operation. On the other hand, where the hearing has been very poor, and where there is no labyrinthine disease, the hearing is usually improved by the operation.

As to whether it will prevent future complications, we can say that they are much more likely to be prevented by this method than in any other way that we know of.

Finally, in regard to the dangers of the operation. In the hands of a skilled otologist, who is thoroughly conversant with the anatomy of the region and who has done many of these operations, the dangers are practically nil. Facial paralysis, following the operation, is usually due to faulty technique. The stapes may be torn out of the oval window during the operation, setting up a purulent labyrinthitis, but this can be avoided by a reasonable amount of care. Injury to the dura, jugular bulb, carotid artery, or labyrinth need not occur in a carefully performed operation. Occasionally, even after a perfect operation, symptoms of brain abscess or meningitis set in, followed by death. But these are cases in which the intracranial condition was already present in a latent state, before the operation, and was simply fanned into activity by the traumatism incident to the operation.

616 Madison Avenue.

HOW THE DEPARTMENT OF AGRICULTURE TREATS THE LOCO DISEASE; A LESSON IN COMPARATIVE PSYCHIATRY.

By BAYARD HOLMES, M.D.,

CHICAGO, ILL.

For centuries there have been abundant story and tradition among the Mexicans of the use of the loco weed by the love-lorn and the criminal; but the contact of the American and the Mexican civilization in the middle of the last century did not bring this dire plant into English fiction until 1882. In the first volume of *Scribner's Monthly* (p. 75) Thomas A. Janvier referred to this Mexican tradition and used it in a popular story, but his description of the plant was so incorrect that it is plain he used a stramonium for his literary model.

As cattle raising on the plains began to command national economic attention gossip among rangers furnished many yarns of "locoed" horses and other animals. These half-credited stories at last became the basis of irrefutable economic statistics and the various local governments in the semiarid region undertook to exterminate the loco weed.

The Department of Agriculture in 1873 published a short account of the loco disease in which O. B. Ormsby of Bakersfield, Cal., is quoted, and this early description is classical; he describes the effect of the plant as follows: "It prevails quite abundantly over an extent of 150 square miles in this valley and is found in other valleys of the State and also in Arizona. This year the army worm and a minute insect which destroys the seed have killed a good deal of it, but if not molested it will flourish to as great an extent as ever. I think very few if any animals eat the loco at first from choice, but as it resists the draught until other feed is scarce they are at first starved to it, and after eating it a short time they appear to prefer it to anything else. Cows are poisoned by it as well as horses, but it takes more to affect them. It is also said to poison sheep. As I have seen its action on the horse, the first symptom of the poison apparently is hallucination. When led or ridden up to some little obstruction, such as a bar or rail lying in the road, the animal stops short and if urged leaps as though it were four feet high. In the next stage he is seized with fits of mania in which he is quite uncontrollable and sometimes dangerous. He rears, sometimes even falling backward; runs or gives several successive leaps forward and generally falls down. His eyes are rolled up until only the whites can be seen. They are strongly injected. He sees nothing and is apt to leap against a wall or

a man. Anything which excites him appears to induce the fits, which I think are more apt to occur crossing water than anywhere else, and the animal sometimes falls so exhausted as to drown in water not over two feet deep. He loses flesh from the first and sometimes presents the appearance of a walking skeleton. In the next and last stage he only goes from loco to water and back. His gait is feeble and uncertain and his eyes are sunken and have a flat, glassy look. His coat is rough and lusterless. In general the animal appears to perish from starvation and constant excitement of the nervous system, or sometimes appears to suffer acute pain, causing him to expend his strength in running wildly from place to place, pawing and rolling until he falls and dies in a few minutes."

This paper of George Vasey was distributed widely as a Farmers' Bulletin, but no mention of the subject appears in the medical literature for more than ten years.

The first notice of the condition in the psychiatric literature, so far as I have read, was made by Dr. Henry M. Hurd to the committee on new remedies of the Association of Superintendents and published in the *Journal of Insanity*, vol. XLII, October, 1885, p. 176. His description is graphic and valuable.

"Ranchmen say that no animal will eat the 'loco plant' unless driven to it by great hunger. After eating it for several days they begin to crave it, and soon prefer it to all other forage. It has been noticed that a horse who has become accustomed to eating loco will refuse all good food and wander for miles in search of the plant. It seems to produce a sort of intoxication at first, and afterwards hallucinations of vision. It is impossible to lead the animal through a gate or into a barn. He walks mincingly, magnifies the size of trifling objects in his path, shies without any cause, and becomes unmanageable. He seems apprehensive of danger and can neither be coaxed nor driven. His gait becomes unsteady and he is manifestly ataxic. He pays little attention to his driver and stands with drooping head and seems indifferent. It is difficult to get him started and equally difficult to stop him. He becomes headstrong, indifferent to the bit, and extremely difficult to drive. If driven into the water or near water, he rushes headlong into the stream and often lies down and refuses to rise. He refuses all food except loco, and rapidly emaciating dies of exhaustion. There is often great cutaneous hyperesthesia, especially in the region of the neck and face. If the horse is struck ever so lightly under the jaw with the flat of the hand, he struggles violently and frequently throws himself backward upon his head. All power of reasoning is gone and he seems utterly unable to control his morbid impulses. If the horse be removed from the plant at an early stage of his disorders and started into eating other food, the disease may be arrested, but complete recovery is impossible. The horse is ruined. Cattle are affected much the same way. They lose all ability to care for themselves and wander about in a daze, confused state, and die from exhaustion. They are frequently tormented by a persistent thirst and instinctively seek water, which they lie down in. In many instances they drown in a few inches of water because too indifferent or too stupid to make any effort to get out of it."

In Bulletin 45 of the Montana Agricultural Experiment Station, June, 1903, J. W. Blankenship shows that the cost of loco disease in Montana was not far from $100,000 per year or 0.3 per cent. of the total valuation, $44,000,000. He discusses the subject fully and gives a vivid description of the symptoms of the disease. There are many interesting points in this description of the disease at its northern limit.

"The loco is a slow poison and appears to affect primarily the nervous system so that animals addicted to the habit become stupid, wander from herd to herd, step high, their eyes are glassy, their front teeth grow long and become loose, their coat becomes shaggy, and they seek the loco weed and will eat nothing else if it can be obtained. They not only eat the plant itself but dig for the roots with their hoofs. They appear to have false ideas of form, size, and distance, and horses, particularly when hot or exhausted, are apt to become frantic. Hence the term 'loco' or crazy, has been affixed to the disease. Moreover, the effects are usually lasting and no remedy has been found. Horses are permanently injured as their crazy spells disqualify them for hard work. Few cases of recovery have been noted."

The early botanists found that several plants produced the loco and the pharmaceutical chemists sought without success for some alkaloid similar to those of its cousins, the Jamaica dogwood and the Calabar bean. The *Astragalus* is the principal source of the disease. It is a leguminous plant that roots deep in the ground and retains its greenness long after most plants have dried up.

The plant is not poisonous until it has been eaten in considerable quantities for two or three months.

In 1893 N. S. Mayo tried the plant on animals and even ate it himself with no bad result; but when he went into the ranges and saw the sick animals he changed his mind and he decided that the loco was a real disease. His description is full, careful, and scientific.

Dr. A. J. Givins in 1893 tried the tincture of *A. molussimus* on three insane persons with no effect either for better or worse.

McCullough, in describing the condition in 1892, mentions all the symptoms that others had emphasized and notes the appearance of exostosis of the frontal bone, and warns buyers to feel of those parts when buying horses from locoed regions. This is an early symptom.

Marshall made his studies of the loco disease mostly on sheep and considered very largely the terminal condition. He failed to discover any adequate cause in the loco weed and found the sheep toward the end of life infested with all sorts of parasites.

These observations are very interesting as compared with the ordinary observations in institutions for the insane where the secondary diseases are often described as a part of the primary condition which led to the mental aberration.

In 1898 the Department of Agriculture collected statistics of the loss by the loco disease. Colorado had already expended $425,000 during the preceding nine years in attempts to eradicate the weed. In Montana the loss was irregular. In one range 300 out of 2,000 cattle died of loco in one season, but later the weed was exterminated in May and June and no more animals were sick. In 1905 the Agricultural Department, in cooperation with the State of Colorado, began a systematic investigation of the disease.

The results of this investigation, which covered more than three years, are published by C. Dwight Marsh (Bureau of Animal Industry, Bulletin No. 112) and by Albert C. Crawford (Bureau of Plant Industry, Bulletin No. 129). These two contributions give a clear perspective of the subject.

Several plants produce the disease and all hoofed animals are susceptible at all ages. The watery, alcoholic, and other extracts have not proved poisonous. Crawford found that the ash of the loco plants contained barium salts and that these salts were poisonous. Marsh, in his experiments, found Fowler's solution therapeutically valuable in horses, but strychnine more useful in cattle. In spite of the unfavorable prognosis in this disease, animals gained weight and recovered when well fed and thoroughly dosed with arsenic or strychnine.

In the State of Illinois with a gross income to the treasury from all sources of a little more than $10,000,000 a year, 40 per cent. or more is expended in the care of the insane and other wards not criminal. Yet the State appropriated only $11,800 a year for the investigation of the causes of insanity.

The number of the wards in the several institutions is about 19,000. If this condition of custody is expensive, their retention in the ranks of useful citizens would be a greater public gain. Not all the insane are committed. The death rate of the insane is very high. The 19,000 insane in custody are but a residue of the 5,000 or more who become insane every year.

To rescue the 0.5 per cent. of the animals locoed by eating the weed on the arid plains of Colorado and Montana, the Department of Agriculture spent several years in expensive research and has at last made commendable and rational progress.

If the work of Crawford is proved by subsequent experiments to be reliable the loco is a disease related to beriberi, to milk sickness, and to scurvy. It is in the category of toxemias not far from lead poisoning. If the salts of barium in such small quantities are potentialized by the biochemistry of the *Astragalus*, then what new toxemia may we not find with the multitude of inimical resources of nature?

With a certain outgo for a custody of meager charity of 40 per cent. of the total receipts of the State Treasury a paltry $12,000 a year for an Institute of Research into the cause, cure, and prevention of diseases that destroy one out of every 500 citizens is extravagant parsimony.

The Psychopathic Institute should be a part of the University. It should be liberally supported by a rate proportional to the life, largess, and happiness at stake. It should be looked to for a solution of the problems of the insanities as we looked to the Yellow Fever Commission.

Our precedents are numerous. As the result of research, suppuration, erysipelas, puerperal fever, and hospital gangrene are historical afflictions, surgery is possible, and the capacity of our hospitals and their usefulness are multiplied. As a result of research hydrophobia and lockjaw are robbed of their terrors. As the result of research tuberculosis, the great white plague, is routed and another generation will see it on the run. As a result of research, cholera, the plague, and yellow fever will never again blockade half the ports of commerce and stampede the frenzied population of States and cities. As a result of research the armies of the world no longer lose more by disease than by the enemies' weapons, nor need the great labors of civilization be stayed by typhoid fever, malaria, the hookworm, or disease-bearing mosquitoes. And by the same rational methods of research, the insanities will be made clear, their sources discovered, and the terrible monuments to our helpless ignorance will disappear from the face of civilized States. With such a history why these millions for custody and not a mite for research?

The bibliography of loco disease has been written by the following authors:

Sayer, L. E.: Bibliography of the loco weed. Trans. Kansas Academy of Sciences, vol. XIX, p. 194-197 (1903-1904).

Marsh, C. D.: The loco weed disease of the plains. Bureau of Animal Industry, Bulletin 112, 1909.

Crawford, A. G.: Barium as a cause of loco disease. Bureau of Plant Industry, Bulletin 129, 1908.

THE DIFFERENTIAL DIAGNOSIS OF ALCOHOLIC COMA.

By HUBERT A. GUILE, B.S., M.D.

NEW YORK,

ADJUNCT ASSISTANT VISITING PHYSICIAN, BELLEVUE HOSPITAL.

THE diagnosis of alcoholic coma is perhaps one of the most difficult and obscure problems that the clinician is called upon to elucidate. This is chiefly due to the fact that the condition presents so few characteristic symptoms and no pathognomonic signs upon which any reliance may be placed. In addition, there are unhappily many other types of coma in which the same statement will hold true. If we could only be sure that we were dealing with but one clinical entity our position would not be so perilous; but frequently there is present some other complicating condition, which for the time being is obscured by the associated alcoholism. For it is unfortunate but true that among the more ignorant classes, when illness befalls them, their first recourse is to alcohol, which is held in high repute as a panacea for all ailments. Then again, those under the influence of alcohol are subjected to a rare and varied assortment of violence. While at times it might seem as if there were a special providence that stands guardian for the intoxicated, yet we know that alcohol cannot increase the tensile strength of bone or lessen the chances of intra-abdominal injury. In addition it must be borne in mind that the vasomotor depression usually present in the acutely alcoholic prevents to a considerable degree the evidences of shock that would ordinarily be present in a sober individual subjected to the same amount of trauma. This fact alone might readily mislead one in underestimating the seriousness of a patient's condition.

These are but a few of the difficulties that present themselves in the diagnosis of alcoholic coma. To be sure, the condition can frequently be diagnosed with some degree of certainty, yet it is well not to believe too firmly that such is the case, lest one's confidence be rudely shaken. It is far safer to approach the case with an air of scepticism, resorting rather to the process of exclusion at the expense perhaps of one's reputation for positiveness.

In alcoholic coma the degree of unconsciousness varies considerably. Many can be aroused from their stupor by simple pressure upon the supra-orbital nerve, by pricking the internasal septum

with a pin, or by briskly slapping the face. Frequently a whiff of ammonia will elicit a vigorous response. While it is generally accepted that one in alcoholic coma can be aroused in contradistinction to other types of coma, nevertheless there are many cases in which the intoxication is so profound that all the superficial and deep reflexes are abolished and no response to external stimuli can be obtained. There is nothing characteristic about the respiration. It is deep and regular, slightly accelerated, occasionally stertorous, rarely Cheyne-Stokes in type. The pulse is usually of good size, regular in its force and frequency. The rate is often increased and the tension is invariably low. At times it may show dicrotism. The temperature is seldom above normal unless of course some complication is present. More often it is subnormal, especially after exposure. In fact, a temperature between 85 and 95° F. is almost pathognomonic of alcoholism, provided starvation and wasting diseases be excluded. In these cases it is often agonal or preagonal in time.

The face is flushed, often cyanosed and frequently shows the stigmata of chronic alcoholism. The pupils are moderately dilated and react to light. As a rule they will dilate still further upon slapping the face or pinching the skin of the side of the neck. On rare occasions the pupils may be pinpoint as in morphine poisoning. It is well to bear in mind in this connection that inequality of the pupils often occurs in people who are normal in all other respects. Also chronic alcoholics when sober frequently have unequal and irregular pupils that react quite sluggishly to light and accommodation. This condition is also present in cerebral arteriosclerosis and cerebral syphilis. And of course there is no reason why a tabetic or a paretic should be immune to alcoholic coma. Therefore little or no reliance can be placed on the condition of the pupils.

The alcoholic odor of the breath is, needless to say, of no value. It is dangerously misleading. However, its absence speaks fairly positively against alcoholic coma, especially in those cases that have been in coma for only a short period of time. Gastric lavage will usually show alcohol in excessive amounts together with a large quantity of poorly digested food. The stomach having been washed out, the patient should begin to regain consciousness in the course of the next few hours. Should this not occur, it would be well to suspect that there may be some complicating condition present; or that the case is not alcoholic coma at all. While it is not common, patients do, however, die from acute alcohol poisoning, notably after the ingestion of wood alcohol. However, such a conclusion should not be reached until every other possibility has been considered and eliminated.

In every case of suspected alcoholic coma a most thorough and painstaking examination should be made. The body must be minutely searched for signs of trauma. The skull should be palpated for evidences of depressed fracture and the scalp inspected for signs of hematoma. Subcutaneous emphysema, especially about the mastoid and frontal sinuses, is of the utmost importance in differential diagnosis. The aural, nasal, and buccal cavities should be examined for blood. It is not enough to determine the presence of hemorrhage, but the source if possible must be found. The leakage of cerebrospinal fluid or the escape of brain substance is of course pathognomoic of fracture of the skull. Ecchymosis anywhere about the head should be regarded with grave suspicion. Frequently it will mean nothing. When it occurs on the forehead, beneath the eyes or conjunctivæ, or over the mastoid cells, especially if the overlying skin is intact, it is particularly significant. Very often ecchymosis comes on several days after the time of injury. So that it is advisable that the above sites of election should be examined two or three times in the course of twenty-four hours. The patient should be catheterized as soon as possible and the urine examined. The blood pressure should be determined hourly and the eyegrounds examined. These when normal will speak in favor of alcoholic coma.

Lumbar puncture, in recent years, has ceased to be regarded as a serious procedure; and the information gained from examination of the cerebrospinal fluid is often so valuable that it is quite justifiable to tap the cord in all cases of coma. The following findings all speak against alcoholic coma: (1) An incranial pressure above 150 mm of water. (2) A turbid fluid. The presence of fibrin flakes. Coagulation or web formation on standing. (3) An increase in the cellular content above five or ten cells per mm. (4) An increase in the globulin content. (5) A negative reaction to Fehling's solution. (6) The presence of bacteria in smear or culture. (7) A positive Wassermann, Nonne Apelt or Neguchi reaction.

The nurse should be instructed to watch the patient constantly for convulsions. These may be focal, quite brief and transitory. Unless the closest watch is kept, these may occur unbeknown to anyone and thus a most valuable and life-saving clue be lost. The patient's clothes and property should be carefully searched for any evidence that might help to throw light upon the nature of his condition. Most important of all, no pains should be spared in endeavoring to get in communication with relatives or friends of the patient. If possible eye witnesses of the onset of coma should be sought, in order that some history of the case may be obtained. If we are successful, the nature of the trauma, if there be any, and the sequence of events should be carefully inquired into, lest the cause be taken for the effect or vice versa.

Perhaps confusion in diagnosis will occur most often in cases of cerebral hemorrhage, for it is remarkable how many attacks of apoplexy seem to be precipitated by excessive indulgence in alcohol. In the majority of cases the condition will not be difficult to differentiate. For fully 70 per cent. to 80 per cent. of all cases will show paresis or paralysis of some sort. Mistakes among these will be chiefly due to carelessness. However it is among the remaining 20 per cent. to 30 per cent. that errors are prone to occur. These will show no focal symptoms. The hemorrhage as a rule is very extensive and is often of the intraventricular type. The degree of unconsciousness is in no way to be distinguished from the more severe types of alcoholic coma. In these cases it will be helpful to remember that the vast majority of apoplexies occur between the ages of forty and sixty, and over one-half show cardiac hypertrophy and the other evidences of chronic interstitial nephritis. In the differential diagnosis of this condition the history obtained from friends is often invaluable; particularly if they have seen the patient from the beginning of his acute illness. For apoplectic coma comes on far more suddenly than does alcoholic stupor. In addi-

tion many of these cases may have shown transitory signs of paralysis; for about 50 per cent. of intraventricular hemorrhages are secondary to hemorrhage into the internal capsule. Such cases after the onset may show slight improvement during the subsequent few hours. Then the patient will suddenly lapse into profound stupor. His respirations become loud and stertorous. The veins of the neck are distended, the face and extremities markedly cyanosed. Not infrequently the skin will be bathed in profuse perspiration. The limbs may be absolutely flaccid or completely rigid. In either event there is rarely any evidence of paralysis. Such a picture as this, when seen for the first time, might readily be mistaken for alcoholic coma. However, any of the following signs, if present, should make one promptly abandon the diagnosis of alcoholism and suspect the possibility of some intracranial mischief. (1) A slow, full, high tension pulse is especially significant if it can be shown that the tension is increasing while the respirations are becoming progressively slower. (2) A rapidly rising temperature without any apparent reason, taken in conjunction with coma and a slow high tension pulse, is quite suggestive. (3) A Kernig, Babinski, or Gordon reflex will rule out alcoholic coma, as will also the presence of true ankle clonus or a unilateral loss of the superficial reflexes. (4) The eyegrounds may show recent retinal hemorrhages, a slight blurring of the disc, together with a moderate engorgement and tortuosity of the veins. The beaded appearance of the vessels and the broadening of the central light streak of the arteries are good evidence of the degenerative changes of the circulatory system elsewhere in the body. (5) Lumbar puncture may show blood tinge fluid. However it must be remembered that occasionally blood is obtained from lumbar puncture in normal cases owing to perforation of the venous plexuses that surround the spinal cord. In these cases we obtain pure venous blood, a condition that does not occur in intracranial hemorrhage. Frequently if the needle be pushed further inwards, clear spinal fluid will be obtained. (6) Coma associated with glycosuria with no diacetic acid or acetone in the urine is suggestive of intracranial injury. In these cases the copper reduction is not quite as complete as is the case in diabetes.

Uremia is readily mistaken for alcoholic coma, especially in those cases in which the urine shows nothing characteristic and in which the amount of cardiac hypertrophy can be accounted for by hard work and alcoholism. To be sure anemia, edema, associated with hypertension, suppression or reduction of the urine output, together with albuminuric retinitis, when present, are all in favor of the diagnosis of uremia, but these signs are by no means constant. What is more confusing still is the fact that most alcoholics have to a greater or lesser degree some chronic interstitial nephritis to which frequently there has been added an acute exacerbation caused by their recent excesses. So that there will be cases that are indistinguishable from alcoholic coma aside from the fact that the latter condition tends to become progressively better while uremia is, of course, far more likely to terminate fatally. The recent work done with the phenolsulphonephthalein test in the estimation of renal function has undoubtedly proved of the utmost value in the diagnosis of uremic coma. For many of the grave cases of uremia show a phthalein elimination ranging from zero to a faint trace within two hours.

The differential diagnosis of diabetic coma rests practically upon the sweet, fruity odor of the breath, and the presence of sugar in the urine associated with acetone bodies. In these cases the history will often prove of the utmost importance in the absence of the urinary examination; for it is very rare for diabetic coma to develop in a patient who has never had treatment for his glycosuria at some time previously.

Epileptic convulsions followed by profound stupor are frequently precipitated by the excessive intake of alcohol. In these cases a careful search of the clothing is often of value; for many epileptics carry cards stating that they are subject to fits. Also the finding of bromides is quite suggestive. Numerous scars about the head and old lacerations of the tongue coupled with the fact that epileptics frequently show the stigmata of degeneracy are all of diagnostic value. While in many cases there will be some doubt at first as to the diagnosis of the condition, one will not remain long uninformed; for epileptics either promptly regain consciousness, pass into postepileptic excitement or confusion, or develop the status epilepticus.

The possibility of narcotic poisoning must ever be borne in mind. Of the narcotics morphine and chloral are the most frequent etiological factors. The former is distinguished, of course, by the pinpoint pupils and the marked slowing of the respiration, coupled with the fact that the patient can be aroused to some slight extent in all cases save the most serious. Chloral poisoning is not as common nor is it as easily identified. The condition resembles the third stage of ether narcosis except that the face is usually white and livid, and the skin is bathed in cold perspiration. The pupils at first are moderately contracted; later they are dilated. The reflexes are lost comparatively early. The picture resembles alcoholic coma in many respects, and this is not to be wondered at when we consider how closely the two drugs are allied, both in their chemical derivation and in their physiological action. Not infrequently we will find narcosis may be due to the combined action of chloral and alcohol; for the peculiar merit of this mixture is well known to the criminal fraternity.

In every case of apparent alcoholic coma that does not regain consciousness, the possibility of pachymeningitis hemorrhagica interna should be borne in mind. The condition is so often found at autopsy that it forms a strong contrast to the infrequency with which the diagnosis is made clinically. There are no symptoms that are characteristic of the disease. Persistent headache occurring in a chronic alcoholic without any apparent reason or following a severe head injury associated with periodical and transitory attacks of paralysis, cortical in type, is suggestive of pachymeningitis hemorrhagica interna. To be sure, these are present in uremia and in cerebral syphilis. However, in most cases the former can be diagnosed by the attendant symptoms of nephritis and the latter suspected by the presence of a positive Wassermann reaction and the other evidences of insufficiently treated lues. In regard to the attacks of coma occurring in pachymeningitis there are no signs that may not be present in cerebral hemorrhage save, if one recognizes the pathology of pachymeningitis, it can be readily seen it is impossible for blood to be found in the spinal cord fluid. In short, if one is to make the diagnosis at all it will be based upon the history of the case prior to the onset of coma.

Little difficulty should be experienced in recognizing hysteria simulating alcoholic coma. The peculiar insincerity of the clinical picture, the tendency to pose, the rolling of the eyes, the contrast between the pharyngeal, conjunctival, and cutaneous anesthesia and the prompt reaction usually obtained from a whiff of ammonia applied to the nose are inconsistent and quite characteristic of the condition.

Occasionally in alcoholics, attacks of unconsciousness are associated with the Stokes-Adams syndrome. The extremely slow radial pulse, and the auricular dissociation as evinced by the pulsation of the jugular bulb, should suggest the possibility of cerebral anemia due to heart block. The diagnosis is, of course, readily confirmed by a polygraph tracing. The attacks of coma are of so short duration that one will not remain for long undecided as to whether or not the condition is due to alcohol poisoning.

Sunstroke often simulates alcoholic coma and at times will cause confusion. The occupation, the time of year, the mode and suddenness of the onset of coma, the extremely high temperature together with the contracted pupils should be sufficient to prevent an undue number of mistakes.

The list of differential diagnoses might be indefinitely prolonged. General paresis, cerebral syphilis, meningitis and brain tumor should all be considered. So that while it must be admitted that it is quite possible to diagnose correctly many cases of alcoholic coma, yet one will agree that numerous surprises are in store for those who are too eager to accept things as they apparently are, and fail to realize the many possibilities that are presented by each case of alcoholic coma. Safety lies only in the process of exclusion, in the carrying out of which recourse must be had to the various diagnostic procedures which fortunately science has put at our command.

200 West Eighty-sixth Street.

REPORT OF A CASE OF EXTIRPATION OF THE BLADDER FOR MALIGNANT DISEASE.*

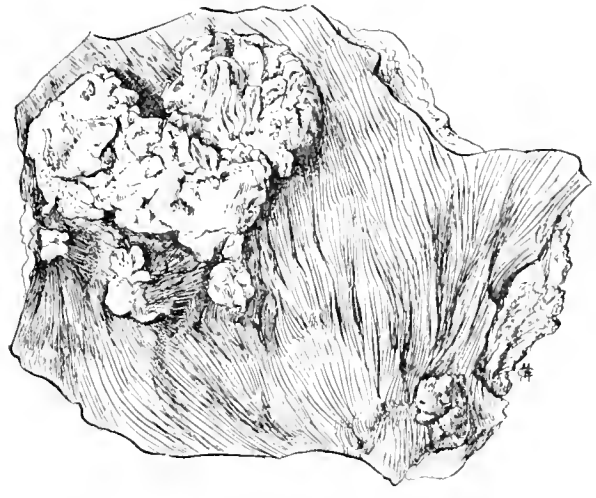
By FRANCIS R. HAGNER,

WASHINGTON, D. C.

PROFESSOR OF GENITOURINARY SURGERY, GEORGE WASHINGTON UNIVERSITY; ATTENDING GENITOURINARY SURGEON, GEORGE WASHINGTON UNIVERSITY HOSPITAL AND GARFIELD MEMORIAL HOSPITAL.

While there are a number of cases of total extirpation of the bladder that have been reported in literature, the procedure is so radical and the results following it are so interesting that I feel it might be of value to report the present case, although the end result was unsuccessful.

L. F., age 40, a Russian, was seen by me during the latter part of November, 1911. He presented the following history: He had hematuria of two years' duration, and painful and gradually increasing frequency of urination. His urine was very offensive and filled with blood and pus. At times the urination would be as often as every fifteen minutes, accompanied with great tenesmus. Again it would not be oftener than every one and a half hours. The more frequent the urination the greater the pain and tenesmus. Following the passage of the urine, which during the last six months was always blood-tinged, there would be the escape of almost pure blood. The patient was cystoscoped November 28. On rectal examination the prostate and seminal vesicles showed no evidence of malignant disease, being of normal size and shape. The bladder capacity was 125 c.c. After the instillation of adrenalin a satisfactory cystoscopic examination could be made, and a large irregularly shaped tumor with a broad base involving the entire base of the bladder was observed. The size of the base of the tumor was easily seen with a retrograde cystoscope. On December 5, a suprapubic cystotomy was performed under cocaine and adrenalin anesthesia. At the time of operation the cystoscopic findings were confirmed, and a suprapubic drain was inserted. The patient was much more comfortable after this operation and his general condition improved. As the patient was in fairly good condition, the gravity of the case was explained to him and he was advised to have the operation as advocated by Dr. Watson of Boston,



Sketch of extirpated bladder; one-quarter actual size.

namely, double nephrotomy with continuous drainage of the kidneys and subsequent removal of the bladder. The patient refused this operation as he said he did not wish his urine running out of his back. It was then explained that the ureters could be transplanted into his rectum. This he decided to have done. He was operated upon December 15, under nitrous oxide and oxygen anesthesia. The bladder was irrigated through the suprapubic wound and the opening packed with gauze to prevent any leakage into the peritoneal cavity. An incision was made from a point just above the suprapubic incision in the skin to just above the umbilicus. The intestines were pushed aside and packed off and the ureters were exposed; the left ureter was quite distended with urine on account of the involvement of the left ureteral orifice by the growth; the ureters were dissected down toward the bladder and clamped about 4 centimeters from their vesical orifices. The ureters were then incised, and the portion left attached to the bladder was well cauterized with carbolic acid and ligated. The operation chosen was Fowler's. The ureters were first sutured together in juxtaposition so that the lower ends ran parallel with each other. A longitudinal incision of 5 centimeters was made into the rectal wall down to the mucosa, and the muscularis and peritoneal coats were dissected and retracted. A U-shaped flap was then made through the submucosa into the gut; this flap was folded on itself and turned outwards, being held in place by two sutures so as to

*Read before the American Association of Genitourinary Surgeons, Philadelphia, June, 1912.

have a mucous surface for the ureters to lie upon, to thereby get the valve effect of the everted intestinal wall on the ureters. An attempt was made to clip the ureteral ends obliquely that they might lie flush on the intestinal flap; this was found to be more theoretical than practical, as the minute the ureter was obliquely cut the cut end became perfectly round. The ureters, stitched together as described, were placed on the folded piece of mucous membrane and held in place by four sutures into the submucosa. The muscularis and peritoneum were then brought over and the rectal wound was closed. The peritoneum of the abdominal incision was then closed, and the attention directed to the bladder. It was with comparatively little difficulty that the peritoneum was stripped and the bladder and the rectum separated from the base. At this time the patient's condition grew desperate and the operation had to be finished very rapidly. I had intended to remove the prostate with the bladder, as the growth, while not involving the prostate, was very near its posterior border. However, I did dissect the bladder down as near to the prostate as possible. After removal of the bladder the vessels were tied and the cavity was packed with sterile gauze, and the abdominal wound was closed, allowing vents for drainage. Before closure of the abdominal wound gauze was packed down to the point of anastomosis of the ureters and rectum for drainage. This, however, was unnecessary, as there was never any leakage, the anastomosis holding perfectly.

The patient was severely shocked from the operation, although the loss of blood was very small. Under stimulation and salt solution he rallied and did fairly well for one week; it appeared he was going to recover from the operation. However, he complained bitterly of stinging in the anal region and great tenesmus whenever urine passed; there appeared to be no pain while the urine was collecting in the bowel. Sometimes he would retain his urine one and a half hours. It was a continual fight to get this patient to take his nourishment. He seemed to give up after the operation, making no effort to help us in any way. There was no evidence of any abdominal infection and the one symptom he complained of was the pain and tenesmus during the passage of urine out of the rectum. The patient had very little fever, but a rapid pulse and a leucocytosis of 26,000. Unquestionably there was infection of both kidneys. He gradually grew weaker and died two weeks after the operation. I endeavored without success to secure an autopsy.

I feel that if I had insisted on the two-stage operation, double nephrotomy and removal of the bladder at a subsequent operation, the result might have been different. The valve-like operation for anastomosis is very satisfactory and beautiful to perform, but I question if these valve-like operations for ureterointestinal anastomosis would be permanent on account of the resulting scar tissue obliterating the valves.

THE FARRAGUT.

The Extent of Leucocytic Proteolysis.—J. W. Jobling and S. Strouse state that the proteolytic action of leucocytes is not a simple cleavage by one ferment. There are present two proteases, one acting in an alkaline medium and the other in an acid medium. This confirms Opie's work. In the leucocytes there was found in addition an ereptic ferment which is capable of acting in an acid or alkaline medium. This action probably represents a ferment which acts on the digestion products of the two proteases.—*Journal of Experimental Medicine.*

CELIAC PAROTITIS IN THE COURSE OF MALIGNANT DISEASE OF THE LIVER.

By DAVID I. MACHT, M.D.,

BALTIMORE, MD.

SECONDARY parotitis in various abdominal conditions, or as Dyball calls it "celiac" parotitis, is an extremely interesting condition, as pointed out by Osler[1] and first described by Stephen Paget,[2] whose reports appearing in 1886 and 1887 are still the most important contribution on the subject. Sporadic cases have been more lately reported by a number of observers[3] but altogether the condition is barely touched upon in most textbooks. Thus Kraus in Nothnagel's "Handbuch" hardly mentions it. Paget describes the disease as an inflammation of one or both parotid glands, leading to suppuration or not, and occurring after injury or disease of the abdomen or pelvis. He analyzed in all 101 cases. Of these 10 followed injuries of the urinary tract; 18 followed injury or disease of the alimentary canal: 23 followed injury or disease of the abdominal walls, peritoneum, or pelvic cellular tissue, and 50 followed lesions of the generative organs. Of the 101 cases 37 died, 3 of the patients being over 80 years old.

The injuries after which this secondary affection of the parotid glands may occur range from the slightest, such as the introduction of a catheter or a pessary, to those following very severe abdominal operations. The diseases of abdominal viscera associated with the secondary parotitis are also very different: perforation of the bowels, hernia, syphilis, pelvic inflammatory disease, typhoid fever, gastric ulcer, cholecystitis, appendicitis, etc. In this paper I wish to report a rare case of parotitis occurring in the course of malignant disease of the gall-bladder and liver. On looking over the literature on the subject, I find internal cancer or other malignant growths to be very rarely associated with the affection. Paget's series, which is the longest, includes only three such cases (cases No. 18, 26, and 39), which were malignant growths of the spine, the sigmoid flexure, and the ovary, respectively. I could not, however, find any reference to a case of parotitis associated with hepatic disease, either in his papers or in Rolleston's comprehensive treatise on diseases of the liver and bile-ducts, or in any other publications. For this reason I think the following history to be of interest.

Mrs. H. F., widow, 72 years old, was first seen by me June 3, 1912. She complained of jaundice. The family history was negative; there was no tuberculosis or cancer in the family.

Personal history: Patient was remarkably free from disease in her past life. She remembered not having had any children's diseases. There was no history of typhoid fever, pneumonia, rheumatism, or lues. She had five children and no miscarriages. She had been a vegetarian for many years. Present illness: About two months ago patient noticed that she was jaundiced. She never had pain of any kind in abdomen or elsewhere, but came complaining of a failing appetite and loss of strength. She had lost about twenty pounds in two months. Her bowels were regular or slightly loose and the stools were white or clay-colored. She passed very dark-colored urine. She complained of a bitter taste in the mouth, but outside of the loss of appetite and failing weight and strength, there were no other symptoms. Physical examination: The patient walked with difficulty, as if she had no strength.

The entire body was pigmented a deep yellow, her face having a bronze-yellow tint. The skin was dry and wrinkled from the extreme and rapid loss of subcutaneous fat. The tongue was dry and heavily coated. The pupils reacted to light and accommodation. The chest was symmetrical but thin and its movements were equal on both sides. Lungs clear throughout on percussion and auscultation. Heart: The apex beat was in the fifth interspace in the mammary line. The cardiac dullness was not increased to right or left. On auscultation a very soft systolic bruit was heard at the apex. A systolic bruit was also heard in the aortic region (probably due to atheroma). Pulse: 68 to the minute; moderate volume; good tension; vessel-walls distinctly sclerosed. Abdomen: Flabby and soft. On the right side under the costal margin a mass was *visible* and palpable, extending about a hand-breadth below the costal margin; it was confined entirely to the right side of the abdomen. It felt slightly irregular and was not tender on pressure. Spleen was not enlarged. There were no prominent veins on the abdominal wall and there were no ascites. The lower extremities did not show any edema. Temperature 99° F. Stools clay-colored. Urine contained bile (usual tests). From the history of the case and the physical findings, a diagnosis of a malignant growth, probably carcinoma, of the gall-bladder and liver was made. The subsequent history confirmed the diagnosis.

Subsequent history: The patient's condition continued to decline very rapidly. One week after the examination she had to go to bed and stay there. She loathed the sight of all food and drink, and was lying drowsy and apathetic, and had a slight remittent fever. She developed the symptoms and signs of an extreme cholemia. There was a gradual wasting away, and in spite of all that could be done (which was indeed very little) she went into coma and expired on June 21, three weeks after I had first seen her. About five days before death the patient developed a marked swelling of her left parotid gland, which caused her a good deal of pain and interfered with deglutition. Two days later a similar though somewhat smaller swelling appeared on the other side. The double parotitis caused the patient more suffering than the whole previous condition. It gave her pain and interfered with deglutition and respiration. Dr. O. Pancoast, a surgeon, who saw the case with me, did not find any abscess formation and did not advise surgical interference. The treatment remained entirely symptomatic. Unfortunately I was unable to get permission to perform an autopsy on the patient, but the post-mortem findings described by Paget in one of his cases would seem to fit very well with our clinical picture. In Paget's case a woman developed a parotitis after she was operated on for a sarcoma of the mesentery. The parotid gland was enlarged, but had no pus or abscess. It was found to be evenly distended with a reddish substance somewhat like spleen.

What the connection may be between the abdominal conditions and parotitides mentioned above is largely a matter of conjecture. Dyball,[4] who discusses the various theories advanced in explanation of it, sums up his views as follows: "It appears most probable that celiac parotitis is due to the action on the parotid glands of toxic substances absorbed into the blood and derived from (a) the secretions of certain organs modified by injury or disease; (b) toxins of microbic origin (*e.g. Bacillus coli*), absorbed either from the alimentary canal, peritoneal cavity, or bladder, and (c) products of deranged digestion." Which of these factors played the important rôle in my case I will not venture to say.

REFERENCES.

1. Osler: "Practice of Medicine," 1904, p. 447.
2. Paget: *British Medical Journal*, 1887, vol. i, pp. 613-616; *Lancet*, 1886, vol. i, 732.
3. Hawthorne: *Glasgow Medical Journal*, 1895, vol. xliv, pp. 17-23.
Swain: *Lancet*, 1893, vol. i, p. 527.
Dorland: *American Journal of Clinical Medicine*, 1906, vol. xiii, pp. 333-f.
Atkinson: *Johns Hopkins Hospital Bulletin*, 1897, vol. viii, pp. 204-207.
4. Dyball: *Annals of Surgery*, 1904, vol. xl, pp. 886-889.

1511 Madison Avenue.

Chronic Jaundice and Splenomegaly.—L. Guthrie reports the case of a girl, aged 6 years, who eighteen months ago became jaundiced. Icterus has varied in intensity from time to time, but has never disappeared entirely. The urine is sometimes dark in color but usually pale, and the stools are said to be always dark brown. She often complains of feeling sick, but seems well on the whole. Past illnesses: Varicella and pertussis at 3 years, "rheumatic fever" at 5 years, and morbilli at 5½ years, followed by chorea. Has always been troubled with thread-worms. Family history: Parents, and brother and sister, aged 10 and 13 years, are in good health. No miscarriages. No children have died. Present condition: Fairly well nourished blonde. On admission to hospital, December 11, 1911, the skin, mucous membranes, and conjunctivæ were of bright canary-yellow color. Bowels constipated, motions dark, containing much mucus, but no oxyurides. Urine pale, no bile pigment, acid, 1015, no albumin. Heart and lungs normal. Liver not felt, area of dullness normal. Spleen easily palpable, extending 2 inches below costal margin. Notch not felt. Blood examination: Serum is colored deep yellow. Reds, 4,190,000; whites, 10,200; hemoglobin, 80 per cent. Differential count: Polymorphonuclears, 76 per cent.; large lymphocytes, 4.5 per cent.; small lymphocytes, 17 per cent.; eosinophiles, 2.5 per cent. During three months' observation, the icterus has varied greatly in intensity but has never quite disappeared. The stools are always dark, and the urine has never contained bile pigment. The spleen is still enlarged. The area of hepatic dullness is normal. The probable diagnosis is: Toxic hepatic cirrhosis with splenomegaly.—*Proceedings of the Royal Society of Medicine.*

Papilloma of the Trachea in a Woman, aged 24.—W. H. Kelson reports the case of a married woman who gave no history of tuberculosis or syphilis. She stated that difficulty in breathing commenced a year ago, and that it became noisy three months ago, getting gradually worse. On examination it was found that the larynx was normal. At about 1 inch below the level of the cricoid cartilage and taking origin posteriorly from the tracheal wall a growth was seen. There was marked stridor, but no expectoration. No enlarged glands. Many rhonchi and other abnormal sounds were heard in the upper part of the chest, so that tuberculosis was suspected. The growth was removed by the direct method without tracheotomy under a general anaesthetic, with immediate relief to the breathing and the disappearance of the chest sounds. It appeared to be a papilloma.—*Proceedings of the Royal Society of Medicine.*

Aortic Regurgitation with Extreme Pulsation of the Aortic Arch; Diastolic Shock and Diastolic Thrill Over the Heart.—F. Parkes Weber, M.D., reports the case of a woman, aged 28, who during the last month has suffered from severe pain in front of the chest. When aged 15 she had rheumatic fever, and her heart has been said to be "weak." Above the level of the heart to the right of the sternum there is a loud systolic murmur to be heard, and pulsation can be felt, accompanied by a marked systolic thrill. There is much pulsation in the episternal notch. The cardiac apex-beat is displaced to the left axillary region. Over the aortic base there are both loud systolic and loud diastolic murmurs. Over the mid-cardiac region there is a loud diastolic murmur, accompanied by a diastolic thrill. With the flat of the hand placed over the heart the diastolic thrill can be felt as if travelling from the aortic base towards the cardiac apex. About the nipple line, in the fifth left intercostal space, a diastolic shock can be felt, which might possibly at first be mistaken for the apex-beat. The Wassermann reaction is positive.—*Proceedings of the Royal Society of Medicine.*

MEDICAL RECORD.

A Weekly Journal of Medicine and Surgery.

THOMAS L. STEDMAN, A.M., M.D., EDITOR.

PUBLISHERS

WM. WOOD & CO., 51 FIFTH AVENUE.

See fourth page following reading matter for Rates of Subscription and Information for Contributors and Subscribers.

New York, October 19, 1912.

FEEBLEMINDEDNESS IN NEW YORK.

IT is a most difficult problem to obtain reliable and complete data on the prevalence and actual importance of feeblemindedness in a community. Particularly is this true of New York City, in which the diverse elements of race, language, and religion make the exact determination of this factor almost impossible. The most thorough study so far made of this subject in New York is summarized in a report rendered to the Public Education Association of New York by Dr. Anne Moore.

The case histories on which this report is based illustrate very clearly the difficulty of proper segregation of defectives under the present laws and state provision. They further make very plain the demand on the resources of the city's public schools, and the serious results which follow the free presence of feebleminded persons in the community, such as the production of defective offspring, the indulgence of criminal and immoral tendencies, and the drain on the resources of the family and of charity. In the face of this evidently serious situation, it is a strange fact that there is no legal provision for mental defectives in the public schools. The Compulsory Education Law exempts from school attendance children who are "physically or mentally unfit," the ones who of all others most need it. Recognizing that the presence of backward children is undesirable in the same classes with normal children, the Board of Education has established certain ungraded classes for them, in which they can receive special training suited to their needs. Defective children are reported to the inspector of ungraded classes and after examination by a physician are assigned to a class if their condition justifies it. About 2,000 defective children are cared for in the 125 ungraded classes of Greater New York. Unfortunately the training most of these children receive ceases when they leave the class. Were it continued, many of them could be made useful, happy, and at least partially self-supporting. The classes are seriously handicapped at present by the lack of a proper segregation law providing for the enforced attendance of defective children and for the continuance of their training after they reach the legal age limit of sixteen years. Such a law would also remove the effects of ignorant opposition, and should provide for the transfer of cases more properly belonging in custodial institutions, thus relieving the overcrowding of the ungraded classes, to the advantage of the less deficient children who would profit most by the training.

Five institutions have been established in New York State for the care of the feebleminded. The capacity of these institutions is so lamentably inadequate that large numbers of mental defectives are at large. Moreover, they provide only for indigent defectives; the large middle class which can afford a moderate expense for institutional care usually will not accept charity, and cannot afford the expensive private institutions. At present there is no law requiring the commitment of the feebleminded to custodial institutions. Consequently it usually rests with parents or guardians to decide the question, and they are too often incapable of knowing or doing the best thing for the child or for the community. It costs the State an average of $161.20 annually to care for a feebleminded person in an institution. It is impossible to estimate the cost of such a person at large. His tendency to produce defective offspring, his inability to become self-supporting, when subjected to present day competition, and his large share in the criminal class all combine to increase his actual expense to, and drain on, the community. Dr. Moore very correctly points out that the segregation of defectives costs money, but saves much more than it costs. The best interests of the community demand segregation in proper institutions, and in addition no marriage license should be issued without a clean bill of health and evidence of a normal mind.

TESTING INDOOR AIR.

FOR many years sanitarians and hygienists have desired earnestly some ready test for the purity of room air without reference to CO_2 comparable, say, to the permanganate test for pure water. This necessity is even greater for schools, hospitals, barracks, etc., than for private houses. Tests of this sort have long been employed, but the results have been susceptible of different interpretations. In recent years attempts have been made to determine not only the kind, but the quantity of organic impurities. Naturally such tests demand such extreme delicacy that only the method of catalysis could be expected to give results of any sort. If this principle is found to be trustworthy for the estimation of expired substances it would naturally be available for impurities generated in manufactures of various kinds, in which artificial substances are added to the product of human lungs. In the case of workingmen who exert much muscular activity it should also be possible to recognize the added production of waste substance. The new avenues thus opened to study, if we suppose that delicate catalytic tests become practicable, are not a few; and it must be borne in mind that the very delicacy of the tests, as happens so frequently elsewhere, may be a bar to their utilization.

In the *Münchener medizinische Wochenschrift* for August 27 Weichardt and Kelber discuss this subject in a brief but highly suggestive fashion. An apparatus is required for obtaining specimens of

air for analysis which combines all the most recent utilizable principles. There is an air pump worked by a motor, a gas meter, wash bottles, etc. The air is forced through glass pearls which contain glycerine solutions of various catalysts.

Colloidal osmium is used as an indicator for the presence of extraneous matter, but it is necessary further to use a color test to make the catalytic action visible. This is effected by the presence of a solution of starch in a solution of potassium iodide with the addition of oil of turpentine. The normal appearance of the blue color indicates that the air is sufficiently pure. If the color reaction is absent or imperfect deleterious substances are present in the expired air. The presence of carbon dioxide alone exerts hardly any influence on the catalysis. The test for purity of air, as already suggested, corresponds roughly in its general outcome with the test for organic matter in water with potassium permanganate.

THE ASSAULT ON MR. ROOSEVELT.

The attempted assassination of Mr. Roosevelt last Monday evening was fortunately frustrated by the spending of the force of the bullet in passing through a thick overcoat and coat and a package of manuscript and by its deflection by a spectacle case. The bullet was on its way to pierce the lungs and possibly one of the large vessels or some other vital part when it met these obstacles and was turned upward, lodging in the tissues of the chest wall. If the newspaper accounts are correct the intended victim is suffering from a wound of slight moment, despite a broken rib, and had he been an ordinary citizen his case would have given the surgeons but little concern. Of course there was a minute chance of tetanus and a somewhat greater one of suppuration in the wound and possibly of pyemia, but these chances were so small that, the proper precautions being taken, they would have caused little apprehension ordinarily. It was characteristic of the man that he disregarded the injury to his chest and delivered a long political speech before receiving medical attention. In the case of the ordinary citizen again, this would have been called foolhardy and might have had most serious consequences; doubtless it was done in face of the protest of his medical advisers, but it apparently did him no harm.

With fear for the life of the patient allayed, one's thoughts naturally turn to the fact of the attempted assassination, associating it with the murders of Garfield and McKinley. There seems to be no possible way of shielding a public man from the murderous attack of a paranoiac. This is one of the dangers to which he is exposed by virtue of his calling, and is no more to be guarded against than is any other accident. It is obviously impossible to shut up all "cranks," even were it possible to pick them out and to draw the line between the simple fool and the dangerous paranoiac. No form of punishment would deter certain of these degenerates from their criminal attempts. Solitary confinement, the most fiendish and horrible of all punishments, which is meted out to the assassins of the Italian kings, does not stay the hands of others. We can, therefore, only guard our public men the best we can, and hope that, if they are attacked, they will have the good luck which has been Mr. Roosevelt's, and over which everyone, politically friend or foe, can but rejoice with all his heart.

PUERPERAL TETANUS.

Tetanus in the puerpera furnishes a special opportunity for the study of this still mysterious disease. The difficulties attendant upon infection in many puerperal cases, the differences in findings, the extreme mortality of the type, all demand special consideration. In a paper read recently before a Strassburg medical society (*Deutsche medizinische Wochenschrift*, September 19) Freund reported three fatal cases of puerperal tetanus. One followed manual delivery, the others were abortions induced by introducing familiar objects, one wooden, into the uterine cavity. In none of these cases was there found any trace of a bacillus, either in the uterine secretions, the dust, or garden soil. Animal inoculations were also negative throughout. Tetanus antitoxin had absolutely no favorable influence, while opiates gave temporary relief. In this connection Freund cited a case of tetanus neonatorum due apparently to the application of wood dust in the umbilical stump. In this case, in contrast to the preceding, the tetanus germ was found in both the secretion of the navel and in the wood dust. The paper gave occasion for considerable comment. One member of the society cited a case of inversion of the rule that prolonged incubation means a more favorable prognosis. In a case of only two days' incubation period, recovery promptly followed antitoxin exhibition. Unusual was the fact that in this case injury of the knee was first succeeded by stiffness of the corresponding leg. Only later did tetanus proper follow. Ledderhose is so impressed with the frequency of splinters and other wooden articles in causing lockjaw that he always insists on a prophylactic injection of antitoxin in wounds of this type.

AN "ANATOMICAL DEMONSTRATOR."

The list of freaks who go from clinic to office and who often derive their subsistence from demonstrating their peculiarities to physicians and students appears to be constantly increasing. There is the subject with the absence of pharyngeal reflex, perhaps a stigma of hysteria, who allows her larynx to be studied; the man with the musical heart murmurs, who is ornamental rather than useful, and the man with the double singing voice who is a vaudeville headliner and does not have to eke out a livelihood from the doctors. This list might be extended almost indefinitely if we include the museum freaks and those who in general appeal chiefly to the public curiosity; but even those who interest the profession only are sufficiently numerous. According to German exchanges one Franz Boehner has appeared before nearly all the clinics and medical societies in Germany. He styles himself an "anatomical demonstrator," but is not a contortionist or an artist's model. His remarkable control of groups of muscles enables him to simulate at will various spastic and paretic conditions. He reproduces ptosis, various forms of strabismus, mydriasis and myosis, nystagmus, cutis anserina, etc. He is able to change the position of the heart and other viscera, can slow his pulse, and force a bolus of food from mouth to anus in 45 minutes. His ability is due to voluntary control of muscular fiber commonly classed as involuntary.

News of the Week.

Excess of Males.—The population of the United States comprised in 1910, according to the Federal census, 47,332,277 males and 44,039,989 females, or 106 males to every 100 females. In 1900 there were 104.4 males to every 100 females. This excess of males is due mainly to the extensive immigration, the foregn-born white population numbering 129.2 males to 100 females. In the native-born white populaton the ratio is 102.7 to 100. In the negro populaton, however, the females outnumber the males, the ratio being 98.9 to 100. The preponderance of males is most marked in the Pacific and Western States, while in the New England States the females are slightly in excess. In New York City the population is about evenly divided as regards sex, while in Philadelphia there is a preponderance of females, and in Chicago there are 106.3 males to 100 females.

Vital Statistics of Texas.—During the month of August there were reported to the State Registrar 4,844 births and 2,032 deaths. As compared to the previous month this shows an increase of 480 births and a decrease of 311 deaths. There were 412 deaths of infants under one year of age and 184 from tuberculosis, which was the leading cause of death during the month.

Births in Chicago.—During the first nine months of this year 31,346 births were reported to the Health Department of Chicago, an increase of 9,878, or about 46 per cent. over the number reported during the same period of 1911.

Doctors Pledge Autopsies.—The members of the Associated Physicians of Long Island at a recent meeting adopted a resolution prepared by a special committee, setting forth the need of educating the public to a better understanding of the value of autopsies in the advancement of medical science. In the adoption of the report many of the physicians present agreed to sign a form containing a request that in the event of death their heirs consent to the performance of an autopsy, since it was their opinion that in beginning a campaign of education to overcome the popular dislike of a post-mortem examination it was the duty of the physicians themselves to set an example.

Gifts to Columbia.—The Trustees of Columbia University at a recent meeting announced that by the will of the late Mr. Augustus W. Openhym, the university will eventually come into the possession of a fund, to be known as the Openhym Research Fund, and to be used for research into the cause, prevention, and cure of cancer. If at any time further research into cancer becomes unnecessary the income of the fund may be used for other researches in the field of medicine and surgery.

A gift of $2,500 from Mr. Clarence H. Mackay for surgical research was also announced, as well as anonymous gifts of $1,800 for the department of materia medica, and of $1,000 for the department of physiology.

Pure Water Oysters Only.—Health Commissioner Lederle of New York City has notified dealers and shippers of oysters in New York that before their permits will be renewed they must file with the Health Department exact information as to the name of the grower of the oysters handled, the location from which the oysters are obtained, and the definite location of "drinks," if any, and, most important, absolute proof of the purity of the waters in which the oysters "drink" or are freshened up for market. The Commissioner believes that the greatest danger of contamination occurs in the freshening beds or "drinks." These new rules will cover not only the oysters grown here, but also those shipped in from outside. Dr. Lederle has again declared that in spite of the Government's finding that the waters of Jamaica Bay were not all that they should be, the Health Department had not been able to discover anything wrong there—a declaration which is not altogether reassuring to oyster eaters.

Concession to English Physicians.—It is reported that the physicians in England have been offered a substantial increase in the sum allotted to them under the Insurance Act. The Government, which at first offered 1.08 per insured person a year, and later offered 1.44, has now by increasing the appropriation made possible the payment of 1.80. The doctors had declared that 2.04 was the least they would accept.

University Hospital.—Columbia University, New York, has undertaken to oversee the health of its students, and has opened a miniature hospital on the university grounds under the direction of Dr. W. H. McCastline, who is connected with the department of physical education of Teachers' College. An office has been opened in Earl Hall, which is equipped with the simpler devices of the operating-room, and in addition includes a laboratory for the examination of the eye, ear, nose, and throat, and apparatus for dental work. The University requires that all cases of illness be reported to Dr. McCastline, whether in the student's home or in the dormitory.

198th Aviation Victim.—With the death of Joseph Stevenson, who fell from his biplane during an exhibition flight at the Alabama State Fair Grounds in Birmingham on October 7, the total number of aviation victims since 1908 is increased to 198, of whom 87 have been killed during the current year.

City Vital Statistics.—During the month of September the death rate in New York City was 12.11 per thousand, the lowest on record for that month. The total number of deaths was 5,149, as compared to 5,331 in September, 1911, when the rate was 13.1 per thousand. For the month of September the average for the preceding fourteen years was 15.53. All of the age groups show a decreased mortality except that from 45 to 65 years, in which there is a slight increase. During the same month 10,951 births were reported, an increase of 142 over that period last year, while the number of marriages reported was 4,089, a decrease of 13.

During the week ending October 5 there were 1,274 deaths in the city, of which 271 were of children under one year of age, as against 1,204 in the corresponding week of last year, of which 301 were of children under one year. For the first forty weeks of 1912 the death rate was 14.30 in the city, while for the same period of 1911 it was 15.56.

Diphtheria Epidemic.—Forty cases of diphtheria have developed in the mill towns of Webster and Dudley, Mass., within the last few days and strenuous efforts are being made to check the spread of the disease.

Restrictions on Sale of Milk.—The New York City Board of Health has recently passed resolutions strengthening the safeguards which surround the sale of milk in the city. After June 1, 1913, it will be illegal to sell milk dipped from cans except in approved milk stores under permits from the

Board of Health, and in stores in which foodstuffs other than milk are sold in the original packages only. It is estimated that 800,000 quarts of loose or dipped milk are sold each day in the city, and the problem of guarding this supply has been one of the chief objects of the department.

Lectures on Hydrotherapy.—Dr. L. Brieger, professor of therapeutics and special pathology in the University of Berlin, Germany, lectured by invitation of Dr. Baruch to the students in the Hydrotherapeutic Department of the Vanderbilt Clinic, College of Physicians and Surgeons, on October 9. Dr. Brieger demonstrated a hydriatic method of treating sciatica, devised by himself, consisting of active and passive movements designed to put the nerve on the stretch, together with firm trembling pressure upon the painful spot, first gentle, then increased, until no pain is produced. After the painful parts have been subjected to steam douches of ten minutes' duration, these movements are made while the patient is submerged in water at 95°, reduced at each treatment. The demonstration was successful, the patient expressing himself as greatly relieved and able to walk with ease.

New Tuberculosis Hospital.—The Municipal Tuberculosis Hospital in Yonkers, N. Y., was formally opened on October 12 and was ready on the 14th for the reception of patients, of whom forty had made application before the opening. The building, which cost about $1,500,000, has been erected on a five-acre plot given to the city by Mr. A. S. Cochran.

Yellow Fever from Brazil.—A well-developed case of yellow fever was discovered among the crew of the British steamer *Chaucer*, which arrived at the New Orleans Quarantine Station on October 8, from Brazilian ports. The patient was sent to the detention ward of the Marine Hospital and the vessel was held in quarantine for six days. No apprehension is felt as to the danger of spread of the disease.

Cases of Hookworm.—The Rockefeller Commission for the study of hookworm disease in Alabama reports that from January 1 to September 30 of this year 8,685 cases of the disease were observed in twenty-two counties of the State. That the work of the commission is increasing is shown by the fact that during the first six months of this period 5,334 cases were observed, while during the last three the number reached 3,351. Most of the patients were treated in the dispensaries established by the Commission.

To Study Malaria.—Dr. J. M. Jackson, president of the Southern Medical Association, has appointed a commission to take up the study of means for the prevention of malarial fever, consisting of Dr. Charles F. Craig, U. S. A., Washington, chairman; Dr. Graham E. Hanson, Crescent City, Fla., secretary; Dr. R. H. Von Erzdorf, U. S. Public Health and Marine-Hospital Service; Dr. Seale Harris, Mobile, Ala., Dr. William Krause, Memphis, Tenn., Dr. Creighton Wellman, and Dr. C. C. Bass, New Orleans, La., Dr. William H. Deadrick, Marianna, Ark., and Dr. W. S. Thayer, Baltimore, Md.

Poliomyelitis in Los Angeles.—A correspondent writes that the report of an epidemic of infantile paralysis in Los Angeles during the past summer was greatly exaggerated. Instead of a total of 226 cases with 43 deaths, a committee of physicians found that there had been only 23 authenticated cases with 3 deaths.

German Physicians Sail.—The delegation of German physicians, 225 in number, who came to this country to attend the sessions of the International Congress of Hygiene at Washington last month, sailed for home on the *Victoria Luise* from New York on October 10.

Radium in Springs.—Analysis of the waters of the lava hot springs at Dempsey, Idaho, has shown, it is said, the presence of radium, and further investigations are to be made to determine the existence of deposits in the vicinity. The springs belong to the State, having been taken over several years ago, and have long been noted for their healing power.

Beriberi on Shipboard.—With three of her crew dead and six others ill with beriberi, the bark *Daylight* reached Philadelphia on October 6 after a 125-day voyage from Bombay, India. The ship was held at Quarantine for several days.

Inspection of Railroad Trains.—The Surgeon-General of the Public Health and Marine-Hospital Service has been instructed to inspect the features of railroad trains and vessels engaged in interstate commerce. As a result it is expected that the railroad trains and passenger carrying vessels will be cleaned up a bit and made more sanitary, and that the Government's interest in the matter will prompt the managers of such lines to have fumigation carried on at certain intervals, especially in parts of the country where there is a constant movement of persons afflicted with tuberculosis. As there is at present no appropriation available for defraying the cost of the inquiry the members of the service will be obliged to conduct it at times when orders for travel are issued for other duties.

Civil Service Examinations.—The New York State Civil Service Commission announces that examinations will be held on November 2, 1912, for the purpose of filling the following positions: Medical librarian, State Library, at a salary of $1,200 to $1,500. Physical instructor, women only, at a salary of $540 and maintenance. Sanitary inspector, Ossining, at a salary of $720. In the last case, residence for three months in the town is required. Application blanks must be filed on or before October 25, 1912. Full particulars may be obtained from the State Civil Service Commission, Albany, N. Y.

Alvarenga Prize.—The College of Physicians of Philadelphia announces that the next award of the Alvarenga Prize, being the income for one year of the bequest of the late Señor Alvarenga, and amounting to about $180, will be made on July 14, 1913, provided that an essay deemed by the Committee of Award worthy of the prize shall have been offered. Essays intended for competition may be upon any subject in medicine and must be unpublished. They must be typewritten in English or accompanied by an English translation, and received by the secretary of the college on or before May 1, 1913. Each essay must be sent without signature, but must be marked and accompanied by an envelope bearing the same mark and containing the name and address of the author. The successful essay or a copy of it remains in the possession of the college.

Weir Mitchell Lectures.—The sixth of the Weir Mitchell Lectures of the College of Physicians of Philadelphia will be delivered on Monday evening, October 21, 1912, at 8.15 o'clock, in Mitchell Hall, by Prof. G. H. F. Nuttall, M.D., F.R.S., of Cambridge, England. The subject of the lecture will be: "Some Recent Advances in Our Knowledge of the Mode of the Spread of Protozoal Diseases."

Lectures on Skin Diseases.—The governors of the New York Skin and Cancer Hospital announce that Dr. L. Duncan Bulkley will give a fourteenth series of clinical lectures on diseases of the skin in the Out-Patient Hall of the Hospital, Second avenue and Nineteenth street, on Wednesday afternoons, from October 30 to December 18, 1912, at 4.15 o'clock. The course will be open to physicians on the presentation of their professional cards.

Nobel Prize Award.—The Nobel Prize in Medicine for 1912 has been awarded to Dr. Alexis Carrel of the Rockefeller Institute for Medical Research, New York, for his work in the suturing of blood vessels and the transplantation of organs. The prize amounts to $39,000. Dr. Carrel, who was born in France thirty-nine years ago, has been connected with the Rockefeller Institute since 1906, and is now an associate of the Institute. He is a Fellow of the American Surgical Association, and a member of the American Philosophical Society.

Medico-Chirurgical College of Philadelphia.—The following elections have been announced: Dr. Stillwell C. Burns, to be professor of operative surgery, in succession to Dr. Mitchell F. Warmuth, resigned; Dr. Robert Boyer, to be demonstrator of anatomy, in succession to Dr. Van Duyne A. Sutliffe, resigned; and Dr. L. Napoleon Boston, to be professor of physical diagnosis, in succession to Dr. Howard S. Anders, resigned. In addition, Dr. Herbert M. Boyer has been appointed demonstrator of histology and embryology, Dr. John J. Gilbride, demonstrator of surgery, and Dr. Philip Fichelis, secretary and librarian, in succession to Dr. A. C. Morgan.

Personals.—Dr. B. Sachs of New York announces his removal to 116 West 50th street.

Dr. Walter S. Reynolds of this city has removed to 132 West 73d street.

Dr. Hobart A. Hare of Philadelphia has been appointed a member of the Board of City Trustees of that city.

Dr. Mary Almira Smith of Boston received the honorary degree of Doctor of Letters from Mt. Holyoke College at the celebration of its seventy-fifth anniversary on October 9.

Dr. Benjamin P. Watson of Edinburgh, Scotland, has accepted the appointment as professor of gynecology and obstetrics in the University of Toronto, Faculty of Medicine, and will assume his new duties on November 1.

Gifts to Charities.—By the will of the late Mrs. Marion de Forest Clark of New York, the New York Society for the Ruptured and Crippled and the New York Orthopedic Dispensary and Hospital receive bequests of $7,500 each.

By the will of the late Sarah I. Wohlgemuth of Philadelphia, a residuary bequest of $5,000 is made to the Presbyterian Hospital of that city to endow a free bed in the men's ward in memory of her father, and in addition the sum of $5,000 to endow a free bed in the women's ward of the same hospital in memory of her mother.

The Medico-Chirurgical Hospital of Philadelphia receives a bequest of $500 by the will of the late Katherine Shoemaker of that city.

The Society of Sanitary and Moral Prophylaxis.—A meeting of this society will be held in connection with the New York Association of Biology Teachers at the Academy of Medicine on Thursday evening, October 24, at 8.30 P. M. The subject for discussion will be the report of the special committee of the American Federation for Sex Hygiene (Dr. Prince A. Morrow, Prof. Maurice A. Bigelow, and Prof. Thomas M. Balliet) on the Teaching of Sex in Schools and Colleges.

Colorado State Medical Society.—At the annual convention of this society held in Pueblo the following officers were elected on September 26: *President,* Dr. John A. Black, Pueblo; *Vice-Presidents,* Dr. Carroll E. Edson, Denver; Dr. William Henry Hally, Rouse; Dr. Henry A. Calkins, Leadville, and Dr. Charles A. Ringle, Greeley. The next annual meeting will be held in Glenwood Springs on October 7, 8, and 9, 1913.

Association of Military Surgeons of the United States.—The following officers were elected at the twenty-first annual meeting in Baltimore recently: *President,* Surgeon William C. Braisted, U. S. N.; *Vice-Presidents,* Brig.-Gen. Charles Adams, Illinois National Guard; Lieut.-Col. J. R. Kean, U. S. A., and Surgeon-General Rupert Blue, U. S. P. H. and M.-H. S.; *Secretary and Editor,* Major Samuel C. Stanton, Illinois National Guard; *Treasurer,* Major Herbert A. Arnold, Pennsylvania National Guard. Denver was chosen as the meeting place for next year.

Cape Breton (N. S.) Medical Society.—At the annual meeting on September 24, in Sydney, the following officers were elected: *President,* Dr. Andrew Love, Sydney Mines; *Vice-President,* Dr. John Knox McLeod, Sydney; *Secretary-Treasurer,* Dr. John G. B. Lynch, Sydney.

Obituary Notes.—Dr. William Brewster Clark of New York, a graduate of Amherst College in 1876 and of the College of Physicians and Surgeons in 1879, a member of the American Medical Association, the New York State and County Medical Societies, the New York Academy of Medicine, the Greater New York Medical Association, and the Society of Sanitary and Moral Prophylaxis, died at his home on October 11 after several months' illness, aged 62 years.

Dr. Arthur Hugo Friedeberg of St. Louis, Mo., a graduate of Washington University, Medical Department, St. Louis, in 1904, died suddenly on September 28 from strangulation following the lodgement of a fishbone in his throat.

Dr. John Jay Colton of Lowell, Mass., a graduate of the University of Pennsylvania, Department of Medicine, Philadelphia, in 1869, a member of the Massachusetts State and Middlesex County Medical Societies, and formerly city physician of Lowell, died at his home on September 23, aged 82 years.

Dr. R. J. Grimes of Bethel, N. C., a graduate of the University of Pennsylvania, Department of Medicine, Philadelphia, in 1876, and a member of the North Carolina State and Pitt County Medical Societies, died at his home of appendicitis on September 28, aged 62 years.

Dr. Charles Nelson Ballard of Oklahoma City, Okla., a graduate of Rush Medical College, Chicago, in 1890, a member of the American Medical Association, the Oklahoma State and County Medical Societies, and the Illinois State Medical Society, died at his former home in Logansport, Ind., on September 21, after a long illness, aged 53 years.

Dr. Henry Johns Rhett of Washington, D. C., a graduate of Brown University in 1885 and of the University of Pennsylvania Department of Medicine in 1890, and a member of the Medical Society of the District of Columbia, died in the Newport Hospital, Newport, R. I., on October 7, aged 50 years.

Correspondence.

LONDON LETTER.

(From Our Regular Correspondent.)

INSURANCE: DANGER TO LIBERTY; LEGAL VIEWS OF THE REGULATIONS EXTENDING; STEPS TO ADMINISTER ACT TAKEN; RESOLUTIONS OF PRACTITIONERS AGAINST—EFFECT OF TUBERCLE ON RACE—EXHIBITION—HOSPITAL RESPONSIBILITIES—ITEMS.

London, September 27, 1912.

The manner in which the Insurance Act was rushed through Parliament has resulted in a striking illustration of a danger to liberty which has been gradually extended of late. The Cabinet has been indirectly aiming at the power of forcing its will by mere decrees, such as when directly issued have brought monarchs to ruin. The act set up an executive body—the Insurance Commissioners—and that body was authorized to issue rules and regulations which should become law as binding as the clauses of the act itself. Since the passage of the act the commissioners have been issuing regulations on numerous points, not a few of which could not have been anticipated, and are causing great discontent, but nothing can stay their hand except an address to the Crown by one of the Houses of Parliament. Such legislation is an abuse which has grown up to the peril of the liberty of the subject. The lawyers even are condemning it as a breach of the constitution.

At the annual meeting of the Law Society it was forcibly urged that from a national point of view the act would prove a crippled scheme with a hostile medical profession. The doctors were, it was said, the first line of defense against malingering and without their co-operation approved societies would undoubtedly, many of them, become bankrupt. The casual laborer had suffered much wrong, had often had to pay a double contribution—an employer's and his own—before he could get employment. The appointment of outside authorities under the act was only one instance of the evil extension of officialism. Actually, in connection with sanatorium benefit, six sets of authorities had to be consulted and satisfied in some cases. An amending act was necessary, agreed several speakers, as it was now recognized in all directions that without legislation it would be impossible to give satisfactory terms to the medical profession.

Rumors as to the scope of the regulations had for some time been plentiful and contradictory, but on Monday some of the papers issued a statement to the effect that a draft had been prepared which afforded hope for settlement and had been submitted to the sickness committee of the British Medical Association. In this it was said medical remuneration was left to the local health committees to arrange as to the capitation, or attendance, or special service system. It was added that Mr. Lloyd-George would probably submit to the Cabinet a proposal for a parliamentary vote of a percentage of the State Insurance Fund for payment of medical men—not a flat rate, but differing according to the circumstances of different districts. The next day the secretary of the British Medical Association informed the press that no draft of proposed regulations had been received—nor probably would be until made public generally. To this denial one of those who supplied the statement replied that the committee's information was only "unofficial," the advantage of that distinction being that similarly unofficial suggestions may be received by the commissioners and considered before finally adopting the draft "officially."

He further declared that the facts he had communicated as to these regulations, the Government action when Parliament meets, and the general procedure of the doctors were strictly accurate, though much may happen "unofficially," and is, therefore, not officially recognized.

A belief seems to be gaining ground that Mr. Lloyd-George will attempt some compromise and that our average rate of 7/6 if offered with some extras might be accepted. But the grounds for this belief are not very substantial and perhaps may be regarded as mere rumors, or even only as feelers put forward by the Government with the hope of entrapping the profession.

Steps are being taken in many places by committees under the act to carry out its provisions as though the profession would consent to them. This is especially the case in regard to sanatorium benefit. In London a temporary subcommittee has been appointed for each metropolitan borough. The Borough Councils have all consented to their Medical Officers of Health acting on these subcommittees, and have granted the use of their offices for giving information. It is thought that these committees will eventually merge into the district committees, which must be appointed for the boroughs as well as for the cities of London and Westminster. As far as these bodies are concerned there seems no likelihood of delay in organizing all duties devolved upon them by the act. In some instances insured persons have already been sent to a sanatorium or given dispensary or domiciliary treatment.

At a meeting of practitioners on the 20th inst. at Lancaster it was resolved to resign all contract practice appointments in accordance with the policy of the British Medical Association on the Insurance Act. Further than this the meeting resolved to call in consultation only those who are pledged to that policy. This is certainly a strong measure, but it is very likely to be put in force in many localities. Nor is it only the British Medical Association's policy for other organizations or specially formed committees are adopting much the same decisions or agreements, though with slight variations according to local conditions.

The medical staff of the Lancaster Hospital, with one exception, have informed the management that they cannot undertake the treatment there or in other voluntary charities of persons insured under the act. From Dundee in the north to Bournemouth on the south coast come similar reports of unanimity or overwhelming majorities, and only dissentients enough to show the practical union of the profession on the subject.

Some education authorities are withdrawing their provisions which deal with the pay of teachers during sickness on the ground that the Insurance Act compels them to contribute. At Heaton and Isleworth a resolution to discontinue sick pay has caused a petition against it signed by one hundred and fifty-two certificated teachers, who allege that the act was not intended to extend to them and that it is a breach of faith, as it varies the contracts under which they have been working.

The views on the racial effect of tubercle put forward by C. E. W. and mentioned in my last

have naturally called forth vigorous protests; some of them challenge the medical profession not to let them pass without repudiation. Several say immunity can be produced artificially and, therefore, it is not necessary to wait for thousands of years while nature carries on her slow process. Some regard the sanatorium as an agent for raising immunity, but this can only be to a trifling extent. Tuberculin treatment is much more active in this sense and immune substance (the I. K.) enormously greater than that. Against this it is urged that the stamping out of smallpox is but raising immunity artificially by vaccination, and where this is compulsory the disease has disappeared. It is hardly to be expected that preventive medicine alone can exclude an infectious disease from any community, and if it could the first intrusion of the germs would offer a pure soil for the rapid spread of that disease. Many think that the gist of C. E. W. was to advocate waiting nature's slow method and that to propose scientific rapid methods is an unanswerable reply. But the logic of his statement might rather point to the lethal chamber.

In the antituberculosis exhibition which I mentioned had been opened, prominent objects are various forms of shelters erected in the garden of the house of the Medical Officer of Health by which the exhibition has been organized. One of these revolves on a circular rail. The doors and windows are all removable so as to secure such ventilation as may be desired in any case. In another pattern the ventilation is regulated by Venetian blind. Among other exhibits are aspirators of different forms for antiseptic and other inhalations as well as for disinfecting; milk sterilizers and milk humanizers; many milk and other food preparations; drugs, disinfectants; soaps; instruments for examining the blood and other fluids; a special form of bedding which it is said is perfectly damp resisting and will stand steam disinfection without detriment.

A prominent place is given to a dust collector, not unlike that which one has seen in Switzerland, and the general adoption of which would be a boon in London. Here the primitive system with the cart into which the dust and rubbish is shot from the house bins is a constant offense. The plan proposed only requires the householder to have a tin contrived to fit a groove of the cart along which it can be slid. Then a trap door opens and at the same moment opens the bottom of the tin, emptying it. Then the sliding the reverse way automatically restores the previous position, the tin being empty. The cart can just as easily discharge its contents into a destructor or rubbish chute. Our local authorities might well adopt the plan and their sanitary advisers will perhaps suggest it.

At the concluding meeting of the Hospitals Association at Birmingham Mr. Gilbert Barling, senior surgeon of the General Hospital, urged that there should be one body and that the managing committee be responsible for administration. Colonel Roxburgh of Glasgow Infirmary supported this, but he would not interfere with the medical department. So agreed Mr. Campbell of Dumfries Royal Infirmary, and Mr. West, chairman of St. George's Hospital, London, who as others hoped the voluntary system would be maintained. Dr. Cureton (Salop Infirmary) was of the same opinion and thought they must be very careful about allowing inspection or they might find themselves taken over by the Government. They must maintain the voluntary system, not only of the hospital but of the sanatorium also. Mr. Denvers Powis, Councillor of King Edward's Fund, read a paper arguing that the life of the voluntary system was local management. Once let a central authority touch details and the system was taken away and he would never be associated further with it. Responsibility must be undivided. Medical work was separate. But there is a wide stretch of country between the physician's prescription and the kitchen maid's evening out.

The Royal Sanitary Institute has established a special examination for candidates for the post of smoke inspector. Certificates are to be awarded and forty sanitary authorities have agreed to act as examiners. The first examination will be held in Manchester in April, 1913.

Next week will be occupied by the Eighth Medical Exhibition, organized like its predecessors, and the Chemists' Exhibitions by the staff of the *British and Colonial Druggist*.

The Corporation of St. Helen's has obtained parliamentary power to detain persons suffering from phthisis when proper precautions are not or cannot be taken to prevent the spread of the infection of tuberculosis. Under their act on September 23 a man living in a small house with two children and five adults who refused to go to the workhouse was ordered by the magistrates, on the representation of the Medical Officer of Health, to be detained for three months.

OUR LETTER FROM THE PHILIPPINES.

(From Our Regular Correspondent.)

NEW CASES OF PLAGUE IN MANILA—MODE OF INFECTION A MYSTERY—STATUS LYMPHATICUS LIABLE TO BE MISTAKEN FOR PLAGUE—MANILA MEDICAL SOCIETY—PERSONAL.

MANILA, P. I., August 14, 1912.

As has been stated in a former letter, there were two cases of bubonic plague in the city of Manila during June, one on June 17 and the other on June 26. There was a complete absence of the disease from the Philippines during the entire month of July, except one case at Iloilo, which is a port which, heretofore, has always remained free from this disease. On August 19 two additional cases were discovered in Manila. These occurred in the persons of two boys who were students at the Ateneo College of Manila and lived at 27 and 37 Calle Villalobos, respectively. The history of the cases does not show that the boys were companions, either inside or outside of the school, or that they had anything more in common than what is stated above. Both were typical cases of bubonic plague, and resulted fatally. A thorough investigation was made of the houses in which they lived, and of the vicinity, but no dead rats were discovered. Many rats have been caught in the neighborhood of the houses since the deaths took place, but none have shown any evidence of plague. On August 11 another case of plague was discovered in the person of a Chinaman, a barber, who lived and worked at 417 Calle Poblete. This house is within half a block of where the first victim worked, who died on June 17, and who was the one who had the first case discovered in Manila in six years. No dead rats have been found in the vicinity, and since the death of the first case, several thousand have been caught in this neighborhood, but none of them have shown

any evidence of plague infection. An inspection of the premises in which the last case occurred showed that next door to the place in which the man worked was used as a warehouse by an importing firm which deals in imports from China and Japan. For instance, there were large numbers of crates which contained lamp chimneys around which straw was packed; great numbers of baskets of garlic, onions, and other dried vegetables, all of which furnish most excellent harboring places for rats, and it is assumed that possibly some plague infected rats may have been introduced into Manila from China or Japan in this way. There have been over 4000 rats caught in Manila since the first cases occurred, and all of them have been carefully examined by laboratory methods, and, so far, none of them have been found to be plague infected. Rats which show glandular enlargements or other pathological evidences that might be taken for plague, have the very delicate test applied of having suspected material rubbed upon the shaved surfaces of guinea-pigs with the view to infecting them, but, so far, none of the guinea-pigs so treated have contracted plague.

In view of the foregoing it is evident that, so far, no specific evidence has been adduced as to the manner in which plague has been introduced in Manila. It is noteworthy that all the cases occurred in permanent residents of the city, and, with the possible exception of the Chinaman, none of the victims had been in contact with persons who ordinarily make visits to China or Japan, or who come from those countries.

In connection with the plague work, it has been customary to transfer to the hospitals all cases suspicious of plague, and to make daily examinations of all deaths in the city, in order to be certain that no plague cases are being overlooked. In this way several cases of status lymphaticus have already been encountered, and it is interesting to observe that during the acute stage of this disease it is difficult to distinguish it, clinically, from plague. In addition to the cases of status lymphaticus there have also been a number of cases that have been diagnosed as glandular fever. Repeated laboratory examinations of these cases have failed to reveal any plague bacilli, and all of them have recovered so far as the fever was concerned, but the glandular enlargements have persisted. The cases generally give a history of several days' illness with fever, general malaise, loss of appetite, and then the femoral glands begin to swell upon one side, soon resulting in a typical bubo; the other limb usually becomes similarly involved from 10 to 24 hours later. This is followed by axillary, cervical, and often epitrochlear enlargements. The whole process lasts about seven days when the fever gradually disappears and, in a few days more, the patient is ready to leave the hospital.

The regular monthly meeting of the Manila Medical Society took place in the upper amphitheatre of the College of Medicine and Surgery, at 8.30 P.M., August 5, 1912. The meeting was devoted exclusively to the exhibition of *x*-ray plates taken of various cases treated at the Philippine General Hospital, and presented nothing out of the ordinary or of unusual interest.

Drs. Hardee and Cox, graduates of 1912 from the Jefferson Medical College, and Dr. Diller, a 1912 graduate from the University of Pennsylvania, have arrived in Manila, and have been appointed internes in the Philippine General Hospital.

FIFTEENTH INTERNATIONAL CONGRESS ON HYGIENE AND DEMOGRAPHY.

(Special Report to the MEDICAL RECORD.)

SANITATION OF ROADBEDS, STATIONS, AND REPAIR CAMPS—SANITARY SUPERVISION OF MERCHANDISE IN TRANSPORTATION—MILK DISTRIBUTION—INDUSTRIAL ANTHRAX—HOOKWORM DISEASE IN PORTO RICO AND THE UNITED STATES—OCCUPATIONAL BRASS POISONING—INDUSTRIAL MERCURIAL POISONING—INDUSTRIAL PLUMBISM—OCCUPATIONAL DISEASES IN NEW YORK—LEGAL PROTECTION FOR WORKERS—MUNICIPAL VITAL STATISTICS—INFANT MORTALITY IN THE UNITED STATES—MORTALITY OF BREAST-FED AND BOTTLE-FED INFANTS—INFANT MORTALITY IN NEW YORK—CONTROL OF MALARIA—PREVENTION AND SPREAD OF YELLOW FEVER—PROPHYLAXIS OF SLEEPING SICKNESS—STRONGYLOIDES AND ANKYLOSTOMUM INFECTIONS.

"The Sanitation of Roadbeds and Stations" was discussed by the Section on Hygiene and Transportation. Professor William T. Sedgwick of the Massachusetts Institute of Technology, Boston, Mass., and Dr. Eugene R. Kelley, Health Commissioner of the State of Washington, read papers and Dr. H. Taylor Cronk of New York described and illustrated an apparatus which could be attached to the toilet and washstand of a car which would collect all excreta, separate the liquid from the solid, disinfect and retain them without the return of noxious odors to the toilet room. The device would cause but little change in the present method of the construction of cars and would detract nothing from their appearance. Dr. T. D. Tuttle, State Board of Health of Montana, spoke of the "Sanitation of Railroad Construction and Repair Camps," and after calling attention to the various measures which were necessary to secure proper conditions in such camps said that at a meeting of representatives of Boards of Health, Railroad Commissioners, and Railroad Operative Departments, held in Helena in March, 1912, a set of regulations relative to railroad camps were drafted. These regulations had been adopted by the State Board of Health of Montana, and would go into effect October 1, 1912, and he believed that if these regulations were strictly enforced, much of the disease resulting from these camps would be eliminated from the State. Dr. Thomas R. Crowder of Chicago presented a study on the "Ventilation of Sleeping Cars" and described the exhaust methods used in the modern steel car by which the air supplies to the lower berth are from 1400 to 2200 cubic feet per hour. He illustrated the various findings by tables and charts.

"The Sanitary Supervision of Merchandise in Transportation" was also discussed at this session. Dr. Robert M. Chapin, Bureau of Animal Industry, Department of Agriculture, Washington, D. C., giving an illustrated talk on the subject. After describing the methods which are in actual use in the various modes of transportation he said that betterment of conditions must be obtained through (1) development of intelligent public sentiment; (2) commercial inducements; (3) efficient inspection service. All three are closely interdependent, but the maintenance of expert and efficient inspection service is the final agency through which results can be accomplished. Dr. John R. Williams of Rochester, N. Y., gave an illustrated talk on the "Economic Problems of Milk Distribution in Their Relation to

the Public Health." He emphasized the point that there could be no general improvement in the public milk supply if the industries associated therewith were not established on a sound business basis; consequently he had studied the economic side of the question. He found that farmers were making milk on land near cities too valuable for the purpose, and experiment had shown that milk could be delivered more efficiently than is now being done at about one-fourth the cost of present distribution.

In the Section on Hygiene of Occupation, Dr. E. W. Hope, Medical Officer of Health, City and Port of Liverpool, Prof. of Hygiene, Liverpool University, and Dr. W. Hanna, Assistant Medical Officer, Liverpool, England, presented a paper on the "Incidence of Industrial Anthrax in Liverpool." They stated that the number of cases of anthrax arising in association with the working in important products was 60, covering a period of about eight years. Thirty-six of these were dock laborers and carters engaged in the discharging of cargoes of ships in the docks, but a large proportion of these cases were infected during the loading or the carting of hides. Six persons contracted infection during the handling of horsehair in hair factories, while 13 contracted the disease during the handling of wools. Dr. Bailey K. Ashford, Major, Medical Corps, U. S. Army, San Juan, Porto Rico, presented a paper on the "Economic Aspects of Hookworm Disease in Porto Rico" and told of the part taken by the hookworm in degrading coffee, fifteen years ago the chief product, to its present condition. Hookworm disease, among other factors, is still preventing the coffee industry from attaining the rich development of the sugar and tobacco industries. There were about 300,000 laborers ill with the disease and it was a very significant fact that a worm-sick laborer could usually be transformed into a healthy man for sixty cents. Prof. C. W. Stiles, Public Health Service, Washington, D. C., told of the "Economic Aspects of Hookworm Disease in the United States." He presented two North Carolina boys, 14 and 17 years old, and said that the mental tests given them by the Binet system showed that, as the result of the hookworm disease, these boys were, so far as their mental development was concerned, only 9 years old. Hookworm disease was a serious economic problem confronting the United States because it reduces the mental efficiency of its victims.

Dr. Emery R. Hayhurst, College of Medicine of the University of Illinois, Chicago, read a paper on "Occupational Brass Poisoning and Brass-Founder's Ague," the latter being an acute malaria-like affection, each attack of very brief duration, and due to the inhalation of fumes arising from molten brass. There is no antidote for this so-called ague, only prophylaxis. Dr. Frank E. Tylecote, Physician to the Salford Royal Hospital and Withington Union Hospitals, Manchester, England, presented a paper on "Industrial Mercurial Poisoning," basing it on 20 cases. The symptom for which the hatters invariably come under notice is the tremor, first seen in the arms and hands. Blackening of the teeth is the main condition noted in the mouth. Dr. Ludwig Teleky, Privat-Docent, Social Medecine, University of Vienna, Austria, presented a paper on the "Dangers of the Use of Mercury in the Industries," in which he described three forms of this poisoning, (1) the subacute; (2) the wholly chronic, and (3) that form in which gingivitis and tremor are noted. The acute form with serious diarrhea hardly ever appears in Austria as industrial poisoning; the subacute form is met with among fire-gilders, and also in Idria; the chronic form is found in well established hat factories. In Austria, Germany, England, and France the mercury mirror has been completely superseded by the silver mirror.

"Industrial Plumbism" was another subject under discussion and many facts of great interest were brought forth. Dr. Alice Hamilton, Special Investigator, U. S. Bureau of Labor, Chicago, said that anilin dyes are beginning to supplant chromate of lead in textiles, wall-papers, artificial flowers, and paints; cut glass is usually finished with acid instead of lead powder; the sulphate of lead has largely taken the place of the basic carbonate in the manufacture of rubber, and is used more and more as a substitute for white lead in the manufacture of paints. These substitutions or adulterations may not always be creditable commercially, but they are an advantage to the workman. There is no legislation in the United States, except in Illinois, which obliges the employer to remove poisonous dust or to provide adequate equipment for personal cleanliness. The results of the admirable legislative control in Europe, on the one hand, and the lack of legislative control in the United States, on the other, can be shown by statistics gathered in a few lead trades which have been intensively studied, viz., the making of white and red lead, of pottery, of glazed tiles, and the porcelain enameling of sanitary ware. Dr. Francis D. Patterson, Philadelphia, believes that industrial plumbism is just as much a preventable as it is an occupational disease, and he tells how this prevention can be accomplished. Dr. W. Gilman Thompson of New York considered the "Occupational Diseases in New York," such as (1) metal poisoning, especially by lead, brass, arsenic, phosphorus, chromium and mercury; (2) poisoning by toxic gases, vapors and fumes, especially illuminating gas, wood alcohol, and acid fumes; (3) poisoning by irritant dust and fibers; (4) compressed air illness, including an abstract of 3,692 cases with 20 deaths reported by Dr. F. L. Keays; (5) occupational injuries to the skin; (6) to the nerves; (7) occupational diseases of environmental origin; and (8) miscellaneous occupational hazards. John B. Andrews, Secretary, American Association for Labor Legislation, New York, presented a paper on the "Legal Protection for Workers in Dangerous Trades in the United States." He said that the labor laws for the regulation of hazardous employment in the United States may be briefly summarized as follows: I. Reporting of Industrial Injuries. (1) *Accidents.*—Forty-two States have now enacted laws providing for the reporting of industrial accidents in factories, mines, and railroads. (2) *Diseases.*—During 1911 and 1912, for the first time in America, eight States enacted laws requiring physicians to report all cases of certain diseases of occupation, including anthrax, compressed air illness, and poisoning from lead, phosphorus, arsenic, and mercury or their compounds. II.—Prevention of Industrial Injuries. (1) *Accidents.*—Forty-eight States have laws designed to provide for the installation of safety devices and to protect workmen against industrial accidents. (2) *Diseases.*—General legal regulations in the interest of comfort and health have been adopted as follows: Provisions for protection against: (a) *injurious dusts,* in twenty-two States; (b) *improper lighting,* in twelve States: (c) *poisonous gases, fumes, and vapors,* in fifteen States; (d) *excessive temperature and humidity,* in eleven States; (e) *work in com-*

pressed air, in one State (New York). By an Act of Congress (April 9, 1912) the manufacture of poisonous phosphorus matches is prohibited in the United States after July 1, 1913. III. INSURANCE AGAINST INDUSTRIAL ACCIDENTS. (1) *Accidents.*—Thirteen States have workmen's compensation or accident insurance laws, all of which were enacted during the last two years. (2) *Diseases.*—In the recent development of workmen's compensation and insurance legislation, no provision has yet been made in the United States for insurance against occupational diseases. For many years it has been our shame in the United States that in labor legislation we have lagged behind some of the most progressive countries of Europe. But recently we have made remarkable progress. In a few instances, as in the creation of the Wisconsin Industrial Commission, we have surpassed other countries. Another generation of labor legislation may see America leading the nations of the world.

In the Section on Demography there was a symposium on the "Present Position of Municipal Vital Statistics." Dr. Eugene Würzburgher, Director of the Royal Statistical Office, Dresden, Saxony, spoke for the German Empire. Most of the large German cities carry on statistical work very zealously, as appears in the fact that 42 cities have established statistical offices, and these are concerned not only with demographic statistics but with all fields of administrative statistics. Complete information regarding the collection and tabulation of vital statistics by state officers of the German Empire is found in the supplement to the seventh volume of *Allgemeine Statistischen Archiv.* M. Maurice Sauveur, Director-General of the Administration of the General Statistics of Belgium, Brussels, was to speak for Belgium, but what he offered was read by title. Mr. Frederick L. Hoffman, Statistician, Prudential Insurance Company of America, Newark, N. J., spoke for the United States. The publication of the annual vital statistics of American municipalities is, as a rule, too long delayed and the reports are not available at the time when they would be of most public interest and value. The reports, as a rule, vary so much in essential matters of detail from year to year that they fail to afford an adequate basis for an intelligent study of local mortality in its relation to sanitary efficiency as reflected in the death rates from all causes and specified causes by divisional periods of life. The English plan of uniform annual reports should be followed and a series of standard tables should be adopted, after the manner of the tables required by the Local Government Board. The mortality by age and sex is almost entirely ignored in the annual reports of American boards of health. The true changes in the death rate can only be measured by means of death rates calculated for divisional periods of life and with a due regard to sex, race, and the principal causes of death. The rules of statistical practice, as approved by the American Public Health Association and the Division of Vital Statistics of the Census Office, should prevail as far as practicable to bring about the required uniformity in the tabular presentation of the facts. The Budapest system of death classification is not at present made use of by a single American municipality, although the intrinsic merits of this method are so self-evident that they require no discussion. Most of the health reports of American cities fail to give sufficient consideration to the mortality statistics of previous years. For comparative purposes most of the health reports of American cities are of very limited utility at the present time. The increasing economic and social importance of preventable mortality emphasizes the imperative necessity of accuracy and uniformity, since serious errors may result from the blind acceptance of official, but nevertheless untrustworthy, statistical returns. The mortality from specific causes does not receive the adequate and qualified critical consideration which is essential for the ascertainment of underlying causes of public ill-health due to conditions more or less subject to social control. In infantile mortality statistics, for the first four weeks at least, mention should be made as to the legitimacy and illegitimacy, and whether the child was breast-fed, or nourished by artificial means. Occupational mortality is practically ignored in the health reports of American municipalities; the admirable method employed by the boards of health of Blackburn and Sheffield, England, should be followed. Deaths in public institutions are not, as a rule, redistributed according to the residence of the deceased, and as a result the ward death rates are more or less untrustworthy and frequently seriously misleading. No health reports of large American cities give the mortality by single years of life, although for many purposes such a return would be extremely useful. The graphic illustrations, or charts and diagrams, in American health reports are, as a rule, extremely crude, and from an artistic point of view more of a hindrance than a help in the visualizing of the vital facts of the community to which they refer. Apparently the best method of presenting the statistics of diseases of sanitary importance is the one used for many years by the Superintendent of Health of the City of Providence, R. I., in his annual report, which is a supplementary report on vital statistics. Statistics of births and still-births for American cities are all more or less untrustworthy. The praiseworthy effort of the Census Office to bring about a radical improvement in this respect, and to provide for the American people a tustworthy basis of fact as regards fecundity is deserving of every possible encouragement. In view of the ever-increasing practical importance of eugenics, the data as to births and still-births are to-day of recognized national and even international importance. There is also much urgency for the more accurate reporting of abortions, and the returns should differentiate criminal abortions from those due to natural causes. Statistics of marriage and maternity of some cities are not reported with reasonable attention to matters of detail. Statistics of this kind should show the ages at marriage for both bride and groom, as well as the ages of the contracting parties remarrying, and whether single, widowed, or divorced; such statistics have a practical bearing upon the problem of eugenics. Vital statistics are public property. Registrars of vital statistics hold an exceedingly important position, and for the fulfillment of their responsible duties they are entitled to more ample compensation than is paid in the case of the majority of American cities at the present time. There is, unfortunately, a disposition to have the function of city registrar merely as that of a bookkeeper, instead of the custodian of records of the highest possible legal, medical, and social importance. It is a matter of regret that not a single health report of an American city can be referred to as a suitable model for general acceptance throughout the country. None of the four larger cities (New York, Chicago, Philadelphia, Boston) publishes reports

which conform in essentials to the admirable reports published on the sanitary administration of the County of London, or for most of the large cities of England, Scotland, and many of the British dominions and protectorates throughout the world. At the present time the anual reports of the Medical Officer of Health of the London County Council (Sir Shirley Murphy), supplemented by the annual reports of the Medical Officer of Education (Dr. James Kerr), are the models which suggest themselves to the most earnest seeker after truth and ideals in American health administration.

"Infant Mortality in the United States" was the topic next under discussion and Edward Bunnell Phelps, editor, *The American Underwriter*, New York, told of the "World-Wide Effort to Diminish Infant Mortality—Its Present Status and Its Possibilities." By a series of tabulations and charts tracing the infant mortality of the principal European cities and countries in recent years, he demonstrates a pronounced and, in the main, continuous decrease in the European death-rates, especially in the last decade. Owing to the defective registration and varying accuracy of American statistics, it is impossible to measure the movement of the infant mortality rates of the United States as a whole, or of any large portion of its population. The paper shows that beyond all peradventure at least a material part of the recent decrease in infant mortality is due to the aroused public conscience and resultant widespread public effort to grapple with the problem of preventable infant mortality. Dr. William H. Davis, Vital Statistician, Health Department, Boston, Mass., read a paper on "Statistical Comparison of the Mortality of Breast-Fed and Bottle-Fed Infants." During the siege of Paris, 1870-71, when the milk supply failed, the Parisian women nursed their children and the infant mortality rate fell from 330 to 170 per 1,000 births. A similar fall in the infant mortality rate was seen during the Lancashire cotton famine, when mothers were not at work in the mills. Wherever a large percentage of mothers suckle their children, the infant mortality rate is low. Dr. William H. Guilfoy, Registrar of Records, New York, told of the "Infant Mortality in the City of New York," and stated that in the second largest, the most congested, and probably the most cosmopolitan city in the world, the death rate among infants is not necessarily higher than that of the smaller and less congested cities. The death rate under one year of age per 1,000 births in New York City in 1911 was 112. The rate for London in 1910 was 104. The cosmopolitan character of a city is one of the stumbling blocks in the pathway of the health officials. Ignorance of the customs and language with a deep-rooted adherence to the habits and errors of the fatherland are factors that prevent immediate results. It is interesting to note that representatives of the Association of Life Insurance Presidents are attending most of the sections.

In the Section on Military, Naval, and Tropical (Colonial) Hygiene, a consideration of the Control and Restriction of Malaria was entered into. Prof. Dr. Angelo Celli of the University of Rome, Italy, in a paper which was read by Dr. Attilio M. Caccini of New York, discussed the "Restriction of Malaria." The fight against malaria in Italy started in 1898 in the Roman Campagna; thence it extended to the rest of Italy. Through great periodic attenuations of malaria in the course of 25 centuries there had been in the Roman Campagna four eras of civic development and colonization, which were again disturbed by unexpected recrudescences of the epidemic. It was necessary to enlarge the knowledge of epidemiology of malaria in the light of Ross's theory and to restore the prestige of the old remedy. The least organotropic action is obtained by administering quinine every day or two. Certain outlined studies stirred the Italian antimalarial legislation to adopt State-furnished quinine. The exercise of this function enabled the State to accomplish achievements in the fight against malaria which were notable. Through the State-furnished quinine the mortality from malaria had fallen from 15,000 to 3,500 yearly. Marine-Generalarzt Prof. Dr. Ruge, Kiel, Germany, said that in the fight against malaria one or another method of combating the disease must be emphasized, especially the fight against mosquitos, not only their extermination and that of their larvæ, but also the protection of individuals from their bites. In combating the larvæ, we may resort to petroleum and cover ponds and swamps with it, trim off the edges, remove vegetable matter from ditches and ponds, remove old tin cans that serve as breeding places, in short, we must endeavor to destroy all artificially created breeding places, or introduce therein Notanects, and little fish (*Cirardinum pocciloides*), etc., screen wells, incline roof gutters, if for housekeeping reasons it is necessary to store up water reserves. Regions with malaria parasites immune against quinine are to be specially considered. Dr. Edmond Sergent, Director Pasteur d'Algérie, Mustapha, Algiers, said that ten years of antimalarial work in Algeria had led them to the following conclusions: (1) An isolated person protects himself by daily preventive quininization, by the bed screen, and by avoiding the neighborhood of the reservoir of the virus and the breeding places of anopheles. (2) A collectivity (family, administration, etc.) protects itself by the daily preventive quininization, by collective mechanical protection, by selecting their dwelling place far from the reservoir of the virus and breeding places of the anopheles, and by slight antilarval measures. (3) The State should aim at the modification of the virus reservoir, constituted chiefly by natives. The State must also educate the people and teach antimalarial hygiene, chiefly in the schools.

Dr. J. A. Le Prince, Chief Sanitary Inspector, Ancon, Canal Zone, read a paper on "Recent Progress in Antimalarial Work with Specific Reference to Anopheles Flight as Studied on the Isthmus of Panama," in which he stated that for rapid eradication or control of malaria in the tropics it is essential, first, to determine which anopheles production areas affect the town, village, or settlement, and then to concentrate the antimalaria work upon such places.

Dr. J. H. White, U. S. Public Health Service, spoke of the "Dissemination and Prevention of Yellow Fever and of the Agency of the Mosquito in its Dissemination." The methods employed for destroying the infection were, first, by segregating all the infected mosquitoes and destroying them at leisure; second, the general destruction of all mosquitos, thus preventing any reproduction. Dr. Harald Seidelin, Liverpool, England, presented a paper on the "Nature of Yellow Fever and Its Prevention" and said that his recent experience in Yucatan had strengthened his belief in *Paraplasma flavigenum* as the specific parasite in yellow fever which was transmitted by *Stegomyia fasciata*. In the absence of *Stegomyia* there is no need of quarantine.

M. le Dr. Laveran, Member de l'Académie de Médicine, Paris, France, and M. le Dr. Rhiroux, Médecin des troupes coloniales, Saint Louis, Sénégal, presented a paper on the "Prophylaxis of Sleeping Sickness." Endemic for a long time on many points of the western coast of Africa, from Sénégal to St. Paul de Loanda, sleeping sickness has spread greatly during the last years, in the Belgian Congo, the French Congo, in Uganda, and in German East Africa; the question of the measures to be taken to combat this plague which depopulates entire regions of intertropical Africa claims the urgent attention of hygienists. The sleeping sickness is caused by the *Trypanosoma gambiense*, Dutton, 1902, and spread by the *Glossina palpalis* and possibly by other species of tsetse flies of glossines. In Rhodesia N. E. there exists a form of sleeping sickness of which the agent differs from the ordinary *Trypanosoma gambiense* and which is spread by the *Glossina morsitans*. Glossines alone, among blood-sucking insects, appear to be able to spread sleeping sickness and, as these flies are seen only in intertropical Africa, it is to be hoped that the disease will not spread beyond this area. The sleeping sickness has often been imported, especially in America, and one cannot mention any cases of contagion noticed outside of tsetse areas of Africa. As in the case with malaria, prophylaxis must apply here, on the one hand to the spreading agent, on the other, to those affected. (1) *Measures to destroy the glossines or protect man from their stings:* Glossines multiply in moist ground, protected by thickets from the heat of the sun; therefore methodically clearing the thickets around agglomerations is one of the most useful measures to be taken against glossines. The removal of native villages located on the shores of *Glossinæ palpalis* infested lakes or rivers has been prescribed, often successfully, chiefly in Uganda. The use of bird-lime or latex of certain plants, has given favorable results in the destruction of glossines in Principe Island and in Nyassaland. The mechanical processes of protection which render such great service in the prophylaxis of malaria may also be utilized against glossines. No effective vaccination against human trypanosomiasis is known. No drug is known which may be used preventively, in a continuous way, as is quinine in malaria prophylaxis. (2) *Measures to prevent patients suffering from trypanosomiasis from spreading the disease*: In the areas where sleeping sickness is endemic, camps or villages in which the patients are gathered and submitted to proper treatment should be created. Isolation camps or villages should be installed in places where there are no glossines. To prevent the spread of the disease in areas still unscathed, there should be created inspection stations on the highways, so as to prevent those suffering from the disease to enter these areas. Workingmen passing from one region to another must have health certificates issued within less than a year. The fight against sleeping sickness has already begun in many points of intertropical Africa; in order to coordinate all efforts and render them more effective, it is desirable that an agreement be reached between all interested governments.

Prof. John L. Todd, McGill University, Montreal, Canada, read a paper on the "Prevention of Human Trypanosomiasis" and believes that not enough is known of the disease to permit the assertion of an absolute means of preventing it. A comprehensive consideration of the disease must discuss the host, the parasite, the fly, and the relation of these to one another. Dr. Samuel T. Darling, Ancon, Canal Zone, presented a paper on "Murrina, a Trypanosomal Disease of Horses in Panama and the Means Used in Controlling an Outbreak." This disease is confined to work horses; in no instance was a saddle horse attacked. Drs. F. G. Novy, W. A. Perkins, and R. Chambers, University of Michigan, Ann Arbor, Mich., presented a paper on "Immunization by Means of Living Cultures of Trypanosoma Lewisi." Capt. Edward B. Vedder, Medical Corps, U. S. Army, presented a paper on the "Prevention of Beri-Beri" which was read by Capt. Henry J. Nichols, Medical Corps, U. S. Army, Washington, D. C.

Prof. Dr. F. Fülleborn, Hamburg, Germany, read a paper on the "Method of Infection with Strongyloides and Ankylostomum." In dogs whose trachea or esophagus has been severed a comparatively light infection appeared after a subcutaneus injection with larvæ of strongyloides and askylostomum, while most of the larvæ were excreted from the operative wounds. If these and supplementary experiments confirm on the one hand the views of Loos concerning the migration of ankylostoma larvæ which have penetrated into the body through the skin, they show, on the other hand, that a fraction of the larvæ, although infinitesimal, reach the intestine through the circulation of the blood after having passed the lungs. When strongyloides larvæ are fed directly into the stomach of the dog apparently all perish except those which succeed in penetrating the walls of the stomach. The former return to the stomach by way of the stomach wall, vascular system, right heart, trachea, and esophagus, and give rise to an infection which, however, is insignificant if the trachea of the dogs has been previously severed. Strongyloides can develop into a sexually mature filariform parasite not only in the intestine, but in the trachea as well. Dr. Fülleborn also presented a paper on a "Differential Diagnosis of the Microfiliriae of the Blood" and gave some demonstrations of some "Kinematograms for Instruction in Tropical Medicine." One film showed the cultivation of strongyloides or ankylostomum according to Fülleborn's funnel method, the development of strongyloides in manure and the penetration of the filariform larvæ into the skin of the guinea-pig. A second film showed the larvæ, pupae, and the imagoes of the mosquitos, likewise the preparation of the stomach and the salivary glands of the mosquitos. A third film showed the miracidia of the *Schistosomum hematobium* emerging from their shells.

(To be continued.)

Progress of Medical Science.

Boston Medical and Surgical Journal.

October 3, 1912.

1. A Further Study of the Problem of Race Betterment. J. Ewing Mears.
2. A Contribution to the Study of Coccygodynia. C. G. Cumston.
3. Results of the Complement Fixation Test for Gonorrhea at the Massachusetts General Hospital. R. F. O'Neil.

1. **The Problem of Race Betterment.**—J. Ewing Mears presents the following propositions for discussion: (1) The State, in the exercise of its duty as guardian of the privileges and of the rights of its citizens, and, as well, charged with the duty of affording protection against conditions which are harmful to its social integrity, has the right to enact laws which will prevent the perpetuation of criminality and of degeneracy by inhibiting procreation in the confirmed criminal and in the defective subject. (2)

The confirmed criminal and the defective subject may be rightfully regarded as in a state of disease, mental, moral, and physical, and therefore, the legitimate subjects for medical and surgical treatment. (3) Extended experience on the part of competent students of criminology and sociology, confirms the opinion that neither education nor punitive measures are effective in restoring the criminal and defective subject to normal conditions. (4) As heredity is conceded to be an important factor in the perpetuation of criminality and degeneracy, through the power of procreation, the fundamental treatment of these conditions consists in the abrogation of this power. (5) Experience teaches that in many of the criminal and defective subjects inverted or perverted sexual desires and practices are the dominating factors of their disordered conditions. In such subjects remedial and curative results can only be obtained by depriving them, through the chosen surgical procedure, of the sexual power. (6) That the testes and ovary produce an internal secretion which is necessary to the normal functioning of the body tissues has been demonstrated. It is believed that after cord or tube ligature sufficient blood supply, through the collateral circulation which is established, is distributed to these organs to maintain this secretion. (6) Surgical procedures instituted for the prevention of procreation in the confirmed criminal, pervert, degenerate, idiot, imbecile, epileptic and vicious insane should not be regarded as a method of punishment, but as a remedial measure, the sole objects of which are the betterment of the human race, through the arrest of the continually flowing stream of degeneracy and the mental, moral, and physical improvement of the defective subject.

2. **Coccygodynia.**—C. G. Cumston notes that in considering the differential diagnosis between this and other conditions, the following facts are to be borne in mind. A methodical examination of the coccyx by palpation will eliminate any lesion if none is present. In sacrocoxalgia the pain is distinctly located in the sacroiliac joint and not in the sacrococcygeal articulation. Then again, pressure over both iliac crests awakens the pain in sacrocoxalgia but does not give rise to any in coccygodynia. Neuralgia of the lumbar plexus need not call for one's attention but that of the sacral plexus may give rise to some confusion if a careful exploration is not carried out. The author points out that in the preataxic period of tabes fulgurating pains may occur in the anococcygeal region, but the true nature of the trouble may be detected with the aid of the pupillary symptoms particularly. The neurasthenic woman and her accompanying backache provide a source of error, and in many cases of failure of surgical treatment the coccyx has been removed from this type of subject. The treatment is strictly surgical and if one is dealing with a real case of coccygodynia very excellent results will be obtained by resection of the coccyx in most cases.

New York Medical Journal.

October 5, 1912.

1. Skin Diseases in Relation to the Sexual Organs. S. Pollitzer.
2. Sarcoma of the Mediastinum. H. B. Allyn.
3. Secondary Infection in Pulmonary Tuberculosis. I. H. Alexander.
4. Therapeutic Nihilism. M. Schulman.
5. The Empirical Treatment of Spirit and Drug Neuroses. T. D. Crothers.
6. Further Notes on the Sanitary Control of Prostitution in Some European Cities. F. Bierhoff.
7. Importance of the Early Training of Mothers in the Care of Babies. S. A. Agatston.
8. Tetany Following Thyroidectomy. W. Lathrop.
9. Reimplantation of the Patient's Cartilage after Submucous Resection of the Septum for Correction of Obstructive Lesions. S. Goldstein.

1. **Skin Diseases in Relation to the Sexual Organs.** By S. Pollitzer. (See Medical Record, vol. 81, page 690.)

2. **Sarcoma of Mediastinum.**—H. B. Allyn reports two cases of this condition. He states that while tumors may develop either in the anterior or the posterior mediastinum, they are distinctly more frequent in the anterior, the ratio of frequency in the two places being about three to one. Primary malignant tumors are generally of thymic origin. They form a hard, fibrous, generally whitish mass, occupying the anterior mediastinum, adherent to the sternum and adjacent organs. They give rise to general symptoms which most frequently include extreme weakness, often with some cachexia, and to local symptoms depending upon the organs subjected to pressure.

6. **Control of Prostitution.**—F. Bierhoff believes that the first steps for departments of health to take, if they wish to be considered sincere in their attempts to grapple with the problem of venereal diseases, should be the establishment of a hospital for the proper treatment of patients of both sexes, and of all ages, afflicted with venereal diseases, who may not be able to find accommodation in other hospitals; the passage of enforceable laws to compel every hospital that receives financial support out of city funds, to accept and treat cases of venereal diseases; to bring about the passage of enforceable laws providing for the medical examination of all individuals, men as well as women, arrested on the charge of vagrancy (which includes prostitution, solicitation, pimping, etc.), and to provide for the compulsory hospital treatment of individuals of this class found to be infected with venereal diseases. When this has been done, one might proceed to the reporting of all cases of venereal diseases, but without names.

Journal of the American Medical Association.

October 5, 1912.

1. The Administration of Salvarsan in Syphilis. J. A. Fordyce.
2. Identification of Spirocheta Pallida in Culture. H. Noguchi.
3. Anaphylaxis to Salvarsan. H. F. Swift.
4. The Proper Places of Mercury and Salvarsan in Treatment of Syphilis. A. Post.
5. The Relative Value of Mercury and Salvarsan from a Serologic Point of View. H. Fox.
6. The Teaching of Syphilis. The Attitude of Hospital Boards to This Disease. W. T. Corlett.
7. The Intensive Treatment of Syphilis. H. F. Swift and A. W. M. Ellis.
8. The Importance of the Early Diagnosis of Syphilis. R. Dexter and C. L. Cummer.
9. A Comparison of Normal and Syphilitic Extracts by Means of the Wassermann and Epiphanin Reactions. A. Keidel and S. H. Hurwitz.
10. The Luetin Reaction. H. Noguchi.
11. Secondary Syphilitic Meningitis. A. W. M. Ellis.
12. Four Years' Experience with the Wassermann Reaction in Practice. B. C. Corbus.
13. The Value of the Four Reactions in the Diagnosis and Treatment of Syphilitic Diseases of the Nervous System. C. R. Ball.
14. A Case of Extensive Brain Disease from Endarteritis Probably of Syphilitic Origin. S. T. Orton.
15. Cardiospasm with Sacculation of the Esophagus. J. C. Myer and R. D. Carman.
16. Bloodless Surgery of the Liver. J. R. McDill.
17. A Simple Apparatus for Administering Salvarsan Intravenously. J. Hamilton.
18. The Treatment of Chronic Influenza. G. I. Jones.
19. Extensive Dermatitis Medicamentosa from Midal (Pyramidon). P. E. Bechet.
20. Congenital Defect in Armenian. A. R. Hoover.
21. Anuria Following the Intravenous Administration of Salvarsan. G. R. Livermore.
22. Non-Adherent Membranous Patch in Pericolitis. V. F. Marshall.
23. A Home-Made Infant Incubator. F. E. Leavitt.
24. A Peculiar Case of Common Salt Poisoning. O. H. Campbell.
25. Common Salt and Constipation. L. S. Hine.

1. **Salvarsan in Syphilis.**—J. H. Fordyce states that the efficiency of salvarsan bears a direct relation to the age of the infection. In the early stage three or four doses supplemented by mercury will in many cases cure the disease in from six months to a year. The florid stage requires more intensive treatment; five or six doses followed by several mercurial courses are necessary. In some forms of syphilis of the nervous system the effects of salvarsan are more satisfactory than mercury and potassium iodide. In malignant syphilis, when mercury has been given over a long period continuously without changing the clinical manifestations or the blood reaction, not infrequently all of the manifestations disappear after one or two doses of the drug. These patients probably develop more or less immunity to mercury, or their strains of spirochetes are more amenable to arsenic treatment. A reaction uninfluenced by a long course of mercury may be changed by one or two injections of salvarsan. In other words, a com-

bination of salvarsan and mercury is more efficient in changing the blood reaction than either alone.

3. Anaphylaxis to Salvarsan.—H. F. Swift has observed that after repeated injections of salvarsan, certain patients show symptoms of a respiratory and vasomotor nature like those seen in anaphylaxis, and in one of the author's cases there occurred a toxic erythema. Guinea-pigs which have been sensitized by the injection of a mixture of guinea-pig serum and salvarsan, and have been reinjected, after a suitable time, with the same mixture, show symptoms like those seen in anaphylactic shock. The mixture acts like a foreign proteid.

7. The Intensive Treatment of Syphilis.—By H. T. Swift and A. W. M. Ellis. (See MEDICAL RECORD, Vol. 81, page 1166.)

11. Secondary Syphilitic Meningitis.—A. W. M. Ellis notes that this condition may occur early in the course of syphilis. It may be latent, causing no obtrusive symptoms, over long periods. It is a more frequent complication than is commonly considered. The so-called nerve recurrences after salvarsan are examples of such a meningitis. In most cases the infection of the nervous system has probably already occurred before the institution of treatment. Syphilitic meningitis represents the development of the disease in a region notoriously difficult to reach with curative agents. The belief that salvarsan predisposes in any way to the development of disease of the nervous system has not yet been confirmed.

15. Cardiospasm with Sacculation of the Esophagus.—By J. S. Myer and R. D. Carman. (See MEDICAL RECORD, Vol. 81, page 1164.)

The Lancet.

September 28, 1912.

1. Dust and Fume, Foes of Industrial Life. Sir Thomas Oliver.
2. The Etiology of Dementia Paralytica. W. F. Robertson.
3. Amputation in Infantile Paralysis. E. M. Corner and C. E. Vastall.
4. The Earlier Stages in the Development of the Pituitary Body. J. E. Frazer.
5. Acute Colliquative Necrosis of the Spleen. G. W. Watson and M. J. Stewart.
6. Acute Irreducible Intussusception in a Child Aged Six Months; Resection; Recovery. G. S. Hughes. With a Note by D'Arcy Power.
7. A Record of the Treatment of Bacterial Infections by Autogenous Vaccines. T. B. Scott and G. Bodley Scott.
8. Fracture of the Cervical Spine; Operation; Necropsy. A. Don.
9. Child Welfare and Industrial Insurance. R. M. Leslie.
10. On the Claim of Sir Charles Bell to the Discovery of Motor and Sensory Nerve Channels. A. D. Waller.

1. Dust and Fume, Foes of Industrial Life.—By Sir Thomas Oliver. (See MEDICAL RECORD, September 28, 1912, page 580.)

2. The Etiology of Paresis.—W. F. Robertson believes that syphilis merely predisposes to the development of paresis, which is in reality caused by chronic infection with a microorganism which is stated to be an attenuated form of the Klebs-Löffler bacillus. The author applies the name "*Bacillus paralyticans*" to this member of the diphtheroid group. If hemoglobin agar is used as the culture medium, it can be shown that the *Bacillus paralyticans* is constantly present in the genitourinary tract and the nasal mucosa of the general paralytic. In tabes dorsalis there is always in the early stages an infection of the genitourinary tract by a similar microorganism; in the later stages this bacillus may be entirely displaced by a coliform one. The nasal infection in general paralysis can be traced along the lymphatics, through the base of the skull, to the intracranial lymphatic system, and a culture of the bacillus can be obtained from the cerebrospinal fluid in a considerable, though certainly not a very large proportion of cases. The intraspinal injection of living cultures of the *Bacillus paralyticans* in rabbits has produced lesions in the cord identical with those that occur in the brain of the general paralytic. In tabes dorsalis, especially in early cases, the results of vaccine treatment have in many instances been highly satisfactory. The gait has become steadier, pain has been relieved, and the patient's general health has improved. It has only been in very advanced cases, and in the thin, neurasthenic type of patient, that the results have been in the least discouraging. In general paralysis, on the other hand, the most that the author can claim is that in a few cases there has apparently been some retardation of the rate of progress of the malady.

7. Vaccine Treatment of Respiratory Diseases.—T. and G. Bodley Scott have found that the treatment of the purely nervous type of spasmodic asthma by vaccines is not very encouraging. There are so many exciting causes outside the respiratory tract that this is only what one would expect; still, in these cases such a chronic catarrhal condition, with expectoration and emphysema, often gradually comes on that the accompanying phenomena of the original disease may be much relieved and life with comparative health may be prolonged. The great success of the treatment lies in the cases of bronchial catarrh and dyspnea that so often follow influenza, pneumonia, and acute bronchitis.

British Medical Journal.

September 28, 1912.

1. Carcinoma of the Colon. V. Z. Cope.
2. Appendicitis; The Results of Operations upon 619 Cases. W. G. Richardson.
3. Spontaneous Reduction of Intussusception. T. B. Henderson.
4. A Case of Fractured Pelvis Complicated by Laceration of the Femoral Vein Treated by Lateral Vein Suture. M. Moritz.
5. Reflections after Twenty-one Years of General Practice. F. W. Jollye.
6. Sterilization of the Skin by Spirituous Solution of Mercury Perchloride. C. Clarke.
7. Iodine as a Dressing for Operation Wounds. F. C. Madden.
8. Iodine as the Sole Preparation and Dressing for Operation Wound. F. J. A. Dalton.

1. Carcinoma of the Colon.—V. Z. Cope calls attention to the fact that in this condition there is no constant, ordered sequence of symptoms, for any one of a large number may be the first noticed. Constipation, diarrhea, vomiting, pain, a tumor, increasing distention of the abdomen—one or several of these may herald the condition. A point to be laid stress upon is that the condition may be latent, and an attack of acute or subacute obstruction may be the first serious symptom to which attention is drawn. This is especially true of the scirrhous type. It is quite common to meet with cases which furnish a history of only a few weeks' constipation in which the growth as seen at operation certainly must have been growing for a much longer period. It is therefore all the more necessary to pay attention to slight symptoms of bowel trouble, so that, if possible, one may detect any morbid condition in the earliest stages.

2. Indications for Operation in Acute Appendicitis.—W. G. Richardson lays down the following rules that should guide one in deciding whether or not to operate in a given case of appendicitis: If all the symptoms have not improved, or if any one of them has become more marked, the inflammation is not subsiding, and it is necessary to remove the appendix. (1) The patient may look well, the local tenderness may be slight, the temperature may be normal, but if the pulse-rate continues to rise (a fact to be ascertained by repeated countings) the appendix should be removed. (2) The patient may look well, the local tenderness may be slight, the pulse-rate may be slow, but if the temperature has risen the appendix should be removed. (3) The patient may look well and the temperature and pulse may both be normal, but if the local tenderness has increased the appendix should be removed. (4) The local tenderness may be slight, the temperature and pulse may both be normal, but if the patient looks worse the appendix should be removed.

Sterilization of Skin by Alcoholic Solution of Mercury Bichloride.—C. Clarke states that bichloride of mercury in methyl alcohol (strength 1 in 500) is a more powerful antiseptic than tincture of iodine, and has practically none of the latter's disadvantages. It can be painted

over parts of the body where the integument is delicate, as over the penis, scrotum, anus, etc., and causes only a slight burning sensation when first applied. It can be freely used, and no local inflammation results as long as the alcohol is allowed to evaporate. A small superficial burn, however, is caused by the solution if a swab or towel soaked with it is left in contact with the patient's skin during the operation. This untoward result can easily be avoided. The solution does not stain clothing or towels, and no irritating vapor is given off as it dries on the skin. As an antiseptic the bichloride solution is very efficient, and no preparatory dressing of the skin is required before the operation.

Berliner klinische Wochenschrift.

September 16, 1912.

Epidemiology of Diphtheria and the Warfare Against the Disease.—Von Drigalski in an address before a recent Health Congress, said in part, that since Loeffler made his great discovery, no real systematic crusade based upon the latter has been undertaken. Something has been done in a limited field. Thus in the German Army, the carrying out in practice of all theoretic requirements has been followed by brilliant results. The proper use of antitoxin furnishes the chief weapon in the control of the disease which no longer kills in a wholesale manner: this, despite the fact that during the past six years the long expected recrudescence of a severe type of the malady has occurred. This recrudescence gives us the cue to attack the disease with renewed vigor in the hope of exterminating it. At its worst to-day it has about the mortality of typhoid, and there is seen a definite relationship between increased morbidity and increased mortality. The first step in the warfare is correct diagnosis. Neisser's method is regarded as satisfactory and the inventor himself seems to be the most severe critic of it. When this method fails it is on the safe side for the public, *i.e.* the positive identification is at fault, not the negative. Masked diphtheria (masked as simple angina) and the healthy carrier furnish two problems which cannot be ignored or even minimized in a crusade. The habitat of the bacillus furnishes a moot point, and among those who regard it as ubiquitous is von Behring himself. As a matter of statecraft the author opposes the giving of antitoxin in advance of a bacteriological diagnosis. Should anything go wrong—an anaphylaxis develop for example—ammunition is furnished to the medical sciolist. In a close community of 185,000 inhabitants, the author despite the recrudescence of the disease in a severe form, is able to show good results from a campaign directed against the chief factors in dissemination. In 1906, the first year of the exacerbation, there were 1,302 cases. The following year the number had risen to 1,550. The morbidity then exhibited a progressive annual decline (1,283, 920, 822, 578). The scarlatina curve for the same period shows a maximum just at the time when the diphtheria morbidity was rapidly receding. This appears to furnish one of the very best evidences that the latter affection was brought under relative control. Comparison of diphtheria with measles and influenza gives an analogous result. Naturally the management of the school child was an all-important factor in the crusade.

Familial Hemolytic Icterus.—Mosse states that this affection was first recognized by Minkowski in 1900. How it could have escaped the attention of the older clinicians is a puzzle. No doubt it was recognized as an individual finding at a much earlier period. Thus in 1856 Henoch mentions the case of a young girl with splenic tumor and a green tint. The new malady has received a good deal of attention in France and has been recorded in England and Italy. The author is able to add two cases to the recorded material. As becomes a familial affection, the condition once developed is eminently chronic. The first patient seen was a man aged 33, with the picture of anemia, icterus and splenic tumor. The duration was at least ten years. The anemia and jaundice were evidently due to a constitutional hemolysis. The latter was evidently either primary or the result of a congenital anomaly of the spleen. Suspecting the presence of a familial affection the author at once investigated the patient's kindred. The father, dead at 52, had suffered with the same affection. The mother and two very young children were normal. Two of the older children were examined, and one of these, a girl aged 19, showed the disease. There were several others not accessible for personal investigation, but it was learned through a medical man in the residence of one of the brothers, that the latter had the affection in a pronounced form. Hence there were at least four cases in a family comprising ten individuals.

Modern Dietetics of Renal Affections.—Kakowski, a Russian, sums up this subject as follows: In acute nephritis after two days on alkalinized water only boiled milk in increasing quantities up to two liters daily, in small, often repeated portions. Upon the tenth day cream and butter may be added. During the third week there should be added little by little sugar, rice, white bread, tea—in general carbohydrates. In subacute nephritis, to the same daily menu add harmless fruits and vegetables and two or three eggs. In chronic parenchymatous nephritis the protein should be kept down to 70 gms. daily. Cereals, bland fruits and vegetables, fruit juices, milk, butter, bacon and eggs may be used without fear. The protein should be furnished by eggs, fowl, and the other meats, provided they agree. The greatest stress is laid by the author on fresh foods. Under no circumstances would he give preserves, pickles, sausage meats, smoked meats, game, meat extracts, relishes, alcohol, cheese, etc. In contracting kidneys the chief dietetic indication is not to overload the circulatory system with liquids. All food not fresh and all pungent substances are forbidden. Patients with all forms of chronic nephritis must receive their 2,500 daily calories just as should healthy individuals moderately active.

Münchener medizinische Wochenschrift.

September 17, 1912.

Action of Febrile States on Metaluetic Affections of the Central Nervous System.—Friedlander states that this subject possesses much historical interest, as it involves the treatment of all psychoses by pyretogenous substances. The use of the seton in the scalp in the management of insanity no doubt set up fever in some cases, as did ordinary cowpox vaccination when used for the same purpose. One Rosenblum inoculated 22 subjects with recurrent fever matter, and claimed eight cures and eight improvements. The date and place of this occurrence as well as the maladies with which the 22 suffered are not stated. Wagner von Jauregg occupied himself for years with pyretogenous substances in this connection, beginning in 1887, and either used or contemplated the use of a number of animal viruses, including those of recurrent fever, malaria, erysipelas, and tuberculin, the last named having been tested in 1895. Since that period other substances have been tested—toxalbumoses, dead cultures, of *B. pyocyaneus*, *B. coli*, etc. Most recently Wagner and Pilez have been using tuberculin in association with mercurials on their insane, chiefly paretics. The present author began to study this subject statistically beginning in 1897. He analyzed all published records of typhoid in the insane (including typhus) as far back as 1813, and found a greater proportion of permanently recovered cases than after any other similar accident. This fact of the curability of psychoses by fever was known to Hippocrates. The idea then came near of using the dead cultures of Eberth's bacillus, but these could not be made to

induce fever, nor could any preparation of this origin be made to bring about the desired results. The author was therefore obliged to depend on tuberculin, which he has used systematically on paresis and taboparesis. Wagner's addition of mercurial inunctions was also practised to some extent, but it was known to act unfavorably in certain cases, and the author preferred to alternate it with tuberculin. In two cases of taboparesis the fever treatment caused the stiff pupils to react, and one patient recovered sufficiently to resume his occupation.

Pituitrin Therapy in Peritonitis.—Klotz refers to the vascular paralysis, especially in the splanchnic area, which is attendant upon peritonitis. Heart failure is secondary to this condition. The resulting fall of blood pressure and paralytic ileus are of such character that pituitrin seems to be the logical indication. Still another reason for its exhibition is the ischuria. The author has tested the drug in twenty cases of peritonitis, all of which have been reported elsewhere. While some desperate cases seem to have been saved the author's only inference is that the experience is sufficiently encouraging for an extensive trial. The cases most suitable are those of postoperative peritonitis where drainage is possible and other local measures can be carried out. As soon as the affection develops the abdomen should be reopened, the peritoneum irrigated and drained and pituitrin injected into the veins. Pituitrin acts opposite to hormonal, one of its competitors in paralytic ileus, in that it tends to raise instead of lower the blood pressure. The latter attribute contraindicates hormonal in peritonitis.

Circumcision Treatment of Carbuncle.—Heddaeus refers to an article by Knoke on the circumcision treatment of phlegmons of the upper extremities and has followed the same technique in the case of a severe carbuncle of the neck. The operation at once limits the local spread of the infection, while the mass naturally sloughs more rapidly. The sloughing process required a long time and the muscles of the neck were laid bare, but patient was apparently no longer in danger of sepis. Collargol was injected to encourage leucocytosis. After recovery seemed to be assured acute sepsis set in, yielding apparently to collargol. But as the patient was an advanced diabetic he passed into a state of acidosis and coma. After transient improvement from intravenous infusion with sodium solution death occurred. The author believes that circumcision is the logical treatment for rapidly spreading phlegmons, carbuncles, and malignant pustules. The spread of the infection is evidently chiefly lateral. The author would not attempt incision of the mass, but a system of radiating incisions into it with iodine applied to seal up the divided vessels and lymphatics of the periphery should probably be practised.

Deutsche medizinische Wochenschrift.

September 19, 1912.

Cultivation and Successful Inoculation (in Apes) of the Bacillus Lepræ.—Reenstjerna relates his results as follows: From leprous material of various origin he was able to cultivate through four generations acid-fast bacilli resebling throughout the *B. lepræ*. A culture prepared from leprous blood he inoculated into a monkey and caused a temporary macular eruption, the bacilli surviving in the tissues. Along with acid-fast bacilli others could be cultivated and an injection of a culture of the latter caused an eruption akin to leprous pemphigus, suggesting a phenomenon due to mixed infection. A culture of still another non-acid-fast bacterium caused the production of a violet-colored macule, and at the same time contractures in most of the joints. The conclusion from these finds is that the lepra exciters represent a high degree of polymorphism. We can no longer associate them with exclusive acid-fast properties. In addition to forms of bacilli, cocci are also present; and the author believes that these varied forms are not mixtures but offshoots from a common stock. Tubercle bacilli are now believed to show similar mutation forms.

New Method of Treating Asthma.—Weiss refers to that type of asthma in which relief is obtained only by hypodermics of morphia. He is inclined to look on paroxysms of this affection as secondary to certain acute blood alterations attended by eosinophilia. These he believes may be due at times to anomalies of hormonic action. He has noticed crises of asthma in subjects presenting diseases of various ductless glands, notably adrenals, hypophysis and the sexual glands. For some time he has been using in routine practice injections of suprarenin and hypophysis extract. Relief is instantaneous. The infundibular lobe of the hypophysis is the portion employed. The injection, which he terms for convenience, asthmolysin, contains 0.0008 g. suprarenin and 0.04 hypophysis extract in ampoules which hold 1.1 c.c. of solution. He has now used his asthmolysin over 3,000 times and has seen but ten failures. The author deduces that the injections correct a glandular insufficiency, although with a powerful drug like suprarenin this hypothesis is not inevitable. It is preferable, however, to inject normal constituents of the body to toxic vegetable alkaloids like morphia, cocain and atropin. Asthmolysin is a safe preparation even in the tenfold greater dose. Despite the descriptive name there is nothing to commercialize, for the formula is published, and there can be no proprietary feature involved. The designation is merely a convenient one for the ampoules.

The Socalled Zeller Method of Treating Cancer.—Wolff refers to methods used for some years past in Czerny's cancer institute and which have recently been described by Zeller. They comprise the internal use of silicates, the local application of caustic pastes and other old, empirical and largely forgotten practices. Wolfff corrects some misstatements of Zeller's. The latter ascribes the introduction of silica into cancer therapy to one "Batty." Wolff traces it back to Schuh in 1854. This surgeon and pathologist reported some remarkable cures from the use of silicious earths. The remedy was introduced independently by an Englishman, Battye, in 1874. Furthermore in America certain mineral waters containing silicates have at times been vaunted in cancer. Zeller in regard to the local caustic use of arsenic goes no further back than Frère Côme and his contemporaries, but Wolff shows that this is one of the oldest known remedies for any disease, having been used for cancer in ancient India and Egypt. In any case, the Côme paste was first mentioned by one Rousselot in 1765, while Gmelin and Gaertner antedated them by several years in a similar combination. The paste in use in Czerny's Institute is actually one devised by Rousselot. Wolff then attacks the alleged cures accomplished by silica and arsenical paste in combination. The chief criticism is that the laity have derived through the lay press unwarranted ideas of the efficacy of the measures employed. Two elements tend to invalidate such an attitude. First, the superficial character of many of the growths, and second, the short observation period.

Nitrogen and Nuclein Metabolism in Gout.—V. Levene and L. Kristeller in their theory of this subject have reached conclusions which harmonize with those of Brugsch and Schittenhelm in so far as they are concerned with the nuclein metabolism. They add, however, the observation that the elimination of nitrogenous substances of protein origin has a protracted character, and that the oxidation of as simple a substance as asparagin proceeds at a subnormal rate. The most striking peculiarity observed in the authors' patient was the very imperfect elimination of ingested urea when the patient was placed on a diet containing only six grams of nitrogen per day, and a much more complete elimination when the diet contained thirteen grams of nitrogen.—*Journal of Experimental Medicine.*

Insurance Medicine.

Uranalysis and the Relation It Bears to the Medical Examiner's Work.—This matter is discussed by Dr. A. T. Gaillard, Philadelphia. Errors in doing uranalysis are very frequently made by medical examiners and Gaillard thinks that the failure to supply accurate information on a very essential and almost elementary medical requirement is due to three causes: 1. Real ignorance of the simple technique or lack of the necessary equipment. 2. Carelessness on the part of the examiner, whose perfunctory work so often fails to demonstrate a reaction for albumin or sugar when one or both are present. 3. The unwarranted assumption on the part of the examiner of the medical directors' duties and prerogatives.

Commenting on the various tests used in uranalysis Gaillard severely criticises Heller's test, giving as his opinion that the simplest, quickest, and most reliable test is the glacial acetic acid, the addition of five to ten drops of a 50 per cent. solution to the upper boiled portion, held, of course, against a dark background for comparison. For all practical purposes this test is sufficient, but, as mucin and nucleo-albumin are also precipitated, it is wise to confirm the reaction by the Purdy or saturated salt solution test. Care should be taken not to add too much of the salt solution. An amount equal to one-sixth of the volume of urine can be gauged pretty accurately by slow addition through a pipette.

As for microscopical analysis and diagnosis, in the opinion of Gaillard, the system employed by most insurance companies is faulty and unscientific in the extreme. From a practical standpoint the following reforms are recommended: 1. The requirement of microscopal examination of the urine when chemical tests reveal albumin, regardless of age, sex, past and present personal or insurance record, or the amount insured for. 2. Microscopical examination of the urine of all applicants aged forty-five and over. 3. The elaboration of some scheme by which this work may be entrusted to a recognized expert for a certain territory, in order to save time and relieve the home office of the congestion which the adoption of such a plan would involve.

The subject of albuminuria, transient or constant, is probably the source of more annoyance to the medical director than any other impairment he is called upon to estimate. Those companies not engaged in sub-standard business usually adopt the arbitrary rule of declining to accept all risks where this impairment is found in two consecutive specimens of urine. This is a deliberate rejection of much good business which might be saved by careful and discriminating selection between the good and the bad. The healthy young athlete with an orthostatic albuminuria is put in the same class with the heavy eating, heavy drinking club man of fifty or over, whose kidneys are seriously affected—both have albumin and both are declined. The young unmarried man applying for insurance before complete recovery from a simple urethritis, whose urine is guilty of a few shreds and a small amount of pus, is classed with the victim of renal abscesses—both show pus in the urine and both are declined.

The same criticism applies to rejections for catarrhal cystitis, or prostatitis, or even mild irritations of the kidney due to an excessive amount of certain urinary salts. In all these conditions the urine will show a small amount of albumin or pus, but the ailment is trifling, is promptly cured under proper treatment, and does not affect the applicant's longevity in the least. But no effort is made to detect the source of the albumin and pus in the urine by microscopical examination, no attempt at a diagnosis is instituted. In the light of our present knowledge it seems amazing that such unscientific methods should be the rule in practically all the insurance companies. Even those supposed to accept sub-standard risks do but little more in their efforts to arrive at an intelligent basis upon which to rate the hazard. A microscopical examination may be made and if granular casts are found the case is usually rejected, but if the findings are practically negative a heavy loading is imposed because of the albumin present. Of course, as Gaillard points out, he is referring to cases in which the age or the applicant's personal history, habits, etc., would ordinarily preclude impairment of the kidneys. Where there is a history of scarlet fever complications degenerative complications may be accounted for, but with a clean record the albuminuria is generally temporary and can be traced to its source. A correct conclusion cannot be reached without the use of this valuable aid to diagnosis.

In short, Gaillard is convinced that the good may be weeded out from the bad by the adoption of scientific principles in the examination of supposedly impaired risks such as those mentioned.

The reverse of the picture is to be found in the second proposition advanced—the requirement of microscopical examination of the urine in all applicants aged forty-five and over. Vital statistics for the past ten years or more show an alarming increase in the mortality from the degenerative diseases and Gaillard thinks that more care should be taken in selecting applicants of this kind who desire to be insured for comparatively small amounts. The largest volume of business is done in small amounts, and yet no microscopical test of urine is required by the various companies for amounts under ten thousand dollars. There is at the present time an immense number of cases of nephritis found in men over forty-five apparently in robust health, and Gaillard emphasizes the point that in such instances the examination of urine is too often not performed in a sufficiently careful and intelligent manner. Fortunately for insurance mortality, most companies now employ to a greater or less extent the sphygmomanometer, and this instrument assists most materially in detecting the arteriosclerosis usually secondary to impairment of the kidney function, even when chemical and microscopical tests as generally performed give negative results. The third proposition, the development of some practical plan by which these results may be accomplished, is hardly within the premise of the medical examiner.

Gaillard is of the opinion that a practical plan would be the selection by each company of one or more capable microscopists in each State and entrust all this work to them. Should there be any doubt as to the fitness of the selection a short tryout at the home office would speedily determine whether the appointment was a good one. There can be no question that all insurance companies before long will pay more serious attention to the vital question of uranalysis, and when this decision is reached it will be a comparatively easy matter to evolve a suitable working plan.—*The Lancet-Clinic*, July 27, 1912.

Book Reviews.

HARELIP AND CLEFT PALATE, with Special Reference to the Operative Treatment and Its Results. By JAMES BERRY, B.S. (Lond.), F.R.C.S., Senior Surgeon to the the Royal Free Hospital, London, Assistant Surgeon to the Alexandra Hospital for Children with Hip Disease, and T. PERCY LEGG, M.S. (Lond.), F.R.C.S., Surgeon to the Royal Free Hospital, London, Assisstant Surgeon to King's College Hospital. Two Hundred and Forty-two Figures and Appendix of Cases of Operation for Cleft Palate. Price $4.00. Philadelphia: P. Blakiston's Sons & Co., 1912.

THE object of the writers of this book has been to describe in full detail the methods that they had found most useful in the treatment of harelip and cleft palate and in the appendix of cases they have endeavored to describe as fully as possible the actual results of their operations for cleft palate. In the work are described the development of the lips and palate, the anatomy and physiology of the lips and palate, the varieties of harelip and cleft palate, the functional results of cleft palate, the treatment of harelip, the secondary operations for harelip, the treatment of cleft palate, secondary operations for cleft palate, and one chapter is devoted to obturators and artificial vela. A very interesting part of the work relates to training in articulation; when once the palate has been completely closed by a successful operation and a good movable soft palate has been given, there is no reason why the patient after careful training should not eventually obtain perfect speech. The child who has suffered from a cleft pal te has never elevated the soft palate, and even after a successful operation this can only be accomplished by skilful training; it will not come without. The volume is replete with drawings, diagrams, and photographs, and is one of the best books which treat of harelip and cleft palate.

THE PHYSIOLOGY OF FAITH AND FEAR, or the Mind in Health and Disease. By WILLIAM S. SADLER, M.D., Professor of Physiological Therapeutics, the Post-Graduate Medical School of Chicago; Director of the Chicago Institute of Physiological Therapeutics; Member of the Illinois State Medical Society, the American Medical Association, the American Association for the Advancement of Science, etc., etc. Author of "The Science of Living, or the Art of Keeping Well," "The Cause and Cure of Colds," etc. Illustrated. Price $1.50 net. Chicago: A. C. McClurg & Co., 1912.

THIS is a book for the layman; and like most books on medical topics, written in popular style, is calculated both to help and to mislead. To illustrate: Arterial sclerosis is spoken of as due to high blood pressure; and high blood pressure as due to fear and worry; old age as consequent on arterial sclerosis; *ergo*, fear and worry are the causes of old age, and the faith state of mind the preventive. Nothing whatever is said in the book, as far as observed, about the potent physical causes of arterial sclerosis. Is this, to the lay mind, not apt to be misleading? Some of the popular reviews of the book state that the author discusses "not only the rôle the mind plays in healing but the bodily factors as well"; and that "both his positions on psychology and physiology have been indorsed by leading representatives of those sciences." The book itself is "dedicated to all who worry: to the victims of fear, moral despair, and other mental maladies; to those who are seeking to know the truth concerning the power of mind over matter; and also to those mental sufferers who have been deceived and deluded by false systems of mental healing." In the preface it is stated: "The author disclaims all pretensions of being a psychologist"; also, "Our one purpose is to tell the story of how the mind affects the body and its various functions in health and disease; how the fundamental mental states of *faith* and *fear* make for or against health"; "To convince the reader that fear is a generator of mental poisons, and worry a corroding canker—ever tending to destroy the mind and produce disease"; "Faith and its moral attributes, the mental emancipator from the bondage of doubt and mind disease." We hardly know how to classify such a book. But there is much in it to commend it. There is a psychological section whose keynote is faith as "the master key to mental medicine"; a physiological section, devoted to the influence of mental states on the circulation, the secretions, respiration, nutrition, etc., and a section on therapy, with chapters on psychoprophylaxis, the psychology of disease, habit, worry, suggestion, psychic fads and fakes, etc. There are 43 illustrations. The laity will doubtless accept the book as authoritative and find it absorbing in interest. It is free from medical terms and not devoted to any particular cult. The physician, on the other hand, while recognizing its general value in inculcating certain well-known principles, will be inclined to criticise it from a scientific point of view as occasionally misleading.

THE ESSENTIALS OF MORBID HISTOLOGY. For the use of students By ALBERT S. GRÜNBAUM, M.A., M.D., F.R.C.P., D.P.H., Professor of Pathology in the University of Leeds; Examiner in Pathology in the University of London; Examiner in Comparative Pathology in the University of Durham. With 22 colored plates and 139 other illustrations. Price $2.00 net. London: Longmans, Green & Co., 1912.

IT is not an easy task to write a book on the essentials of histology, for the successful completion of the problem implies rigid exclusion of much material, and hardly any two teachers would agree as to what should be excluded and what included. As a piece of book-making this volume is admirable; well printed and splendidly illustrated for a book of such relatively low cost, and yet on reading it through one has the feeling that the space taken by the illustrations, not one of which could be dispensed with, has compelled too much clipping of the text. There are also no references to lead the student to further reading, and consequently the book can be regarded as suited only for direct class teaching and as furnishing the minimum requirements for a course, the lecturer himself adding a good deal in the way of collateral information and requiring much consultation of larger texts for moot points and rare conditions. Within its limits, however, the volume is excellent and its contents offer an excellent exposition of the minimum requirements of a course in pathology. The only special criticism which can be offered is that directed against Figure 120, which is much more characteristic of a carcinoma of the kidney than of a so-called hypernephroma, however accurately it may follow some individual section furnished to the artist.

A TEXT-BOOK OF PATHOLOGY FOR STUDENTS OF MEDICINE. By J. GEORGE ADAMI, M.A., M.D., F.R.S., Strathcona Professor of Pathology, McGill University and Advisory Pathologist to the Montreal General and the Royal Victoria Hospitals, Montreal, Canada; Late Fellow of Jesus College, Cambridge, England, and JOHN MCCRAE, M.D., M.R.C.P. (Lond.) Lecturer on Pathology and Clinical Medicine, McGill University, Montreal; Senior Assistant Physician, Royal Victoria Hospital; Sometime Professor of Pathology, University of Vermont; Late Fellow in Biology, University of Toronto, Toronto, Canada. Illustrated with 304 Engravings and 11 colored Plates. Price $5.00. Philadelphia and New York: Lea & Febiger, 1912.

PROFESSOR ADAMI, when he brought out his work on general pathology, in several respects made a new departure. He went from the beaten track in the arrangement of the book in that he began not with a study of the blood and of circulatory disturbances but with a study of the properties of living matter. And this was not the only departure from accustomed lines, for he formulated distinctly original views in developing the conception of the biophore or ultimate molecule of living matter into a theory which is applied to the explanation of growth and even to the complex processes of variation, adaptation, and evolution. In short, Adami's general pathology exhibited features which differentiated it from the ordinary work on pathology and which also won for it much favor. In this new work Adami determined, as in the case of the general pathology, to produce a text-book out of the common. The former work deviated from the lines followed by other writers on pathology, by treating the subject on broader principles, and the present text-book has been conceived with a similar end in view. The first endeavor has been to make clear and intelligible what is known concerning the deeper meaning of morbid states. The chapter on inheritance is excellent, but those chapters dealing with immunity and inflammation are perhaps the best of the book. In the chapter on immunity the various forms of antibodies are considered and the author suggests an addition to Ehrlich's conception of side-chain activities. That part of the work in which inflammation is made the subject is particularly full and lucid. It may be noted that the pathological significance of the internal secretions is considered and the part played by secretion in stimulating the flow of the pancreatic, gastric, and intestinal juices is given the attention its importance demands. The book is well printed and illustrated and should prove as useful as it surely must prove interesting to the student of medicine.

Society Reports.

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, Held October 3, 1912.

THE PRESIDENT, DR. WILLIAM M. POLK, IN THE CHAIR.

Concerning the Life of a Cell.—Prof. Dr. MAX RUBNER, president of the Permanent International Commission of the Congresses of Hygiene and Demography, Berlin, Germany, gave this, the Wesley M. Carpenter lecture. He recalled that in 1836 Schwann in Berlin and Cagniard Latour simultaneously discovered that yeast was a single-celled organism. The relations of yeast to fermentation was not commonly accepted at that time and a bitter fight was waged on the subject, which resulted in victory for Pasteur, who considered fermentation to be a result of the vital activity of yeast. Yeast presented a cellular biology free from every disturbance by the differentiation of cells, freely accessible to the medium of food, provided with known products of metabolic assimilation, and, in short, with everything that invited to a study. The cells of yeast increased by sprouting and under favorable circumstances with the formation of "Ascospores." The cells were without visible motion of the protoplasm until the first stage of sprouting. In their ripe stage they had a kernel which separated at the sprouting; whether in a mitotic manner or not had not yet been determined. The capability of growth was very considerable. The fermentative matter was composed of hexoses and cane sugar, which was easily decomposed into dextrose and levulose. While the ideas first expressed by Pasteur were still prevalent there were signs of the development of the doctrine of fermentation which led far away from his primary idea. He laid no importance, when making comparative observations of fermentative potentialities, upon the *period* of the effects; he therefore did not exclude completely the fermentative character of the process. The further development of theories of fermentation had destroyed Pasteur's doctrine piece by piece. Fermentation was now considered exclusively to be an enzymatic effect, yet, according to the ecological theory, which had been hinted at by Nägeli, and at the present time affirmed by Worthman, fermentation was now considered to be an arrangement for the protection of the yeast, whereby it could better defend itself in its combats with other microorganisms. From the biological point of view there now existed a wide gap, for one must ask, under these conditions, where was that to be found which must be called the process of life and the nourishment of yeast? To bring about a production of enzymes no great amounts of material were required, but every living substance must have in some manner a metabolic assimilation from which it took the forces required for life. Fermentative cleavage could not be considered as such. If the potential energy of organic matter (such as was not otherwise possible in the case of fermentative effects) was changed into heat, this form of energy was no longer suitable to supply the forces required for the maintenance of life. Generally authorities had abstained from replying to this question. Dr. Rubner stated that these difficulties might be removed without a shadow of doubt. The first question was the exact determination of the rôle of the sugar. If yeast possessed, beside the fermentation of sugar, a metabolic assimilation, this must become known when one compared the heat of cleavage of sugar, based upon the thermochemical calculation of the heat of combustion, with the heat of fermentation when yeast had been planted in sugar. If there existed a special metabolic assimilation of yeast this must also produce heat, and this heat of fermentation must produce not only the heat of cleavage of sugar but also the heat of this specific metabolic assimilation. If energy were lacking this could only have been lost to the growing yeast. In order to make these measurements Dr. Rubner had devised an accurate microcalorimeter and had made numerous measurements of the heat of fermentation under various conditions. He had found a complete agreement between the calculated heat of fermentation of sugar, from the thermochemical figures, with the fermentative values of the decomposition of sugar. No other source of heat could be discovered either in the case of nongrowing yeast, nor yet a diminution of the heat of fermentation during the growth of the cell, with the sole exception of the heat of fermentation of sugar. These results showed the theory of Gautier about the conservation of energy during growth, and the theory of Pringsheim about the specific metabolic assimilation of protein in yeast of no account. As yeast needed energy for its life and its enormous growth allowed one to suppose a considerable consumption of energy, sugar must in part at least form the source of energy of yeast. On the other hand, a partial decomposition of the sugar by the yeast enzymes could not be doubted. Opposed to this was the idea that sugar was split in the yeast only by alcohol. Dr. Rubner had calculated that the amounts of ferment produced from the yeast could not in the remotest manner explain the decomposition of sugar of the living yeast, but that by far the greater portion of sugar was destroyed by the living substance. He called this vital portion the "vital decomposition." He had separated both the fermentative and the vital decomposition quantitatively by making parallel experiments with normal yeast triturated with toluol, that was to say killed. Tuluol did not destroy alcoholic enzymes. He had studied the process of fermentation calorimetrically, whereby at every desired instant the course of the decomposition of the sugar could be controlled. Sugar was the food matter of yeast for energy purposes. The vital decomposition was vastly more powerful than the fermentative. The experiments had shown that the idea expressed by Pasteur and others, that fermentation was the process of the nourishment of yeast, was correct. The automatic regulation of the consumption of energy of each cell had its own definite use; the effect of a semination of cells was proportional to the number of the same; the effect of fermentation was almost absolutely independent of the concentration of sugar; the consumption did not increase even with a very considerable amount of sugar; the consumption was even decreased by a rising concentration when the limits of plasmolytical effects were approached. The young cell which had just been created by growth had no higher consumption of energy than a cell existing without growth in a nitrogen free solution. The consumption of energy changed with every change of temperature, but the acceleration of the consumption of energy amounted, at an increase of heat of 10° only, to 1.62 times. Preserved by cold the yeast cell remained alive for a long period even without fermentation. Left to itself at a higher temperature it became decomposed by autolysis by means of an endocellular ferment known as endotryptase. Yeast possessed no metabolic assimilation in starvation; it formed no heat when placed in solutions of peptone without sugar. In this condition its life remained latent, neither could the autolytic decomposition be abolished. Sugar alone, therefore, might be regarded as the source of energy. The autolytic decomposition ceased when the living substance began to ferment. Endotryptase, the protein digesting ferment, did not even disappear during fermentation, but the fermenting vital substance was no longer attacked by it. As Ivanoff had shown, the fermentation possessed the after effect that the protein of the cells after fermentation was attacked by endotryptase with difficulty for a longer period. Endotryptase seemed to have the object of decomposing dying protein matter that it might pass out. These products of excretion were not identical with an autolytical dissolution of quiet cells. The nongrowing yeast cells showed changes which recalled the manifestations of old age. If cultivated for a long period the number of cells need not decrease, yet the effects of fermentation decreased rapidly in geometrical progression together with the loss of nitrogen; the enzymatigen effects decrease proportionally, and both together slower than the fermentation. Yeast, in order to remain alive, must become from time to time regenerated by growth. Every yeast cell received nitrogen substance from a solution of peptone which remained in the case of nonfermenting yeast as a reserve material. The fermenting yeast absorbed more than the nonfermenting and formed cellular protein. Yeast could increase up to 2.6 times the amount of nitrogen without an increase of cells, that was to say without growth. Yeast perished without growth by separation in spite of nitrogen nourishment. All agreed that living substance was composed of single small units of life; these he termed "biogenes"; they possessed two capabilities; namely, increase of their substance by separation; and dissimilation, which in the case of yeast was the fermentative power. These biogenes often lost their capability of growth; there remained simpler elements, which only possessed a rudimentary capability of separation, which he called "biontes." They composed the principal mass of the cells of fully grown organisms. Each biogene and each biont consisted of a union of many molecules of protein. The peculiar ac-

tion of yeast during the absorption of nitrogen might be explained in that the biogenes and biontes each got a certain increase in protein molecules, but that for some unknown reason the biogenes could not separate. The formation of living substance rarely took place directly, only in the case that particularly suitable protein molecules were in existence. This formation generally took place in two acts, the food material being first prepared in a suitable manner. This latter act could also take place in latent life. If genuine growth took place no increase of the consumption of energy of fermentation could be detected and in consequence no endothermal increase of energy. The living substance was no endothermal union. Calorimetrical measurements with the autolysis of yeast have proved this. The attraction for food material was enormous with the growing yeast cell. Growth and capability of fermentation had an intimate relation to one another. Maximal growth could only be obtained with a normal fermentation; this did not hold true for very high temperatures. To a maximal growth a sufficient amount of sugar to maintain the fermentation was required besides the food matter containing nitrogen. Generally a formation of alcohol hindered the maximal growth. Alcohol was more than twice as poisonous for the process of growth as for the process of fermentation, yet very minute amounts of alcohol seemed to facilitate the growth. An airing of the cultures favored the growth because thereby the greater portion of the sugar was burned and the injurious concentration of alcohol was only later met with. For all the relations of the growth to the nitrogen food the relation of the nitrogen of semination to the nitrogen of the nutritive solution was decisive. Dr. Rubner termed this the "tension of the food matter." Upon this the speed of the growth depended. In the course of every experiment the speed of growth decreased in proportion to the decrease of the food amounts. There existed a fixed limit to "the tension of food matter" which regulated the beginning of growth. This he called the "threshold of growth." The "tension of food matter" of the threshold of growth was different with different food materials. The reason of this was that different food materials possessed very different values. If yeast was offered such a quantity of food that it could carry out one cell separation completely this action constituted the threshold of growth. The stimulus of the nitrogen nourishment consisted in the rapid storage of food material in the living substance, above all in the nucleus by which a displacement of the tension of nucleoplasm of Richard Hertwig took place, and the growth began. When one considered the enormous power of growth of yeast it was not extremely surprising that it could not fully regenerate cells destroyed by nitrogen loss. The explanation of this was that the biogenes were first provided with food when nitrogen was absorbed from nutritive soil containing nitrogen. These biogenes were unable to separate because of the high threshold of growth in yeast cells. With mammals these relations were more complicated and at the same time different from those of yeast. The feeding up of cells to their normal condition proceeded in the case of mammals differently from their growth only with a relatively greater profusion of the protein diet as had been accurately shown by experiment. Even a pure diet of protein was unable again to increase the expired capability of growth, either in the case of the increasing process of growth over the typical process or to reawaken the expired capability after the cessation of growth of the fully developed body. The biogenes of the youthful organism had probably lost almost all their characteristics of growth and become biontes. Dr. Rubner believed that the reconstruction of destroyed tissues of animals must be represented by two different processes acting side by side. Firstly, by an improvement of the condition of nourishment of the biontes, which became necessary with hunger; and, secondly, by a compensation and an increase of the biontes, a filling up of the cells from organic regions externally situated. The change of the condition of nourishment of the biontes could take place, as in the case of yeast, by every suitable nitrogen food. The compensation for perished biontes without growth of cells was only possible with higher organizations. The higher organism was composed of two systems of organs, cells whose separation was excluded, and those which obtained a continuous renewal, like blood cells. Yeast belonged to the organisms which possesses the greatest amounts of energy known. Its consumption of energy was 157 times as large as that of a horse, calculated at equal units; 58 times as large as that of man, but only three times as great as that of a newborn mouse in a state of rest. The increase of the metabolism of yeast was not in the remotest way equivalent to its enormous relative area. The consumption of energy of the world of minute life depended more upon specific peculiarities of their living substance than upon other conditions. The maximal speed of growth with yeast was very considerable, about 32 times more than that of the mouse and 1,400 times as great as that of the infant. This great difference came from the fact that that maximum speed of growth had already been completed by the mammals at the beginning of extrauterine life. If one calculated the transmission of matter through the cell wall for animal cells it would be found that for equal areas less sugar was transmitted with the mammal, taking the newborn mouse for comparison, than with yeast in anaerobic life. The migration of the sugar from the fluid of the yeast cell extended only through minimal roads, the layer of sugar which contained the sugar for one complete day of fermentation had only a height of eight one-hundredths in a solution of one per cent. and only one of one four one-thousandths mm. in a solution of 20 per cent. The cells sometimes received more sugar than could be decomposed, and formed glycogen. This formation of glycogen would still take place when the living protein of the yeast had been killed or the fermentation had been otherwise prevented. By experiments with toluolized yeast he had been able to show that a reception of heat took place in the course of this deposit of glycogen. The amount was small, but could be proved calorimetrically. This bond of heat could be explained by the setting free of water molecules. In the saccharinization of glycogen heat became free; in the reversal of the process heat was naturally bound. In closing, Dr. Rubner said: "In to-day's lecture I have conducted you into the world of minute beings, but in spite of all their strange actions we have not really seen strange manifestations with them in vegetative life; only life in another milieu, but yet again customary and known in many things which are of value and importance for our understanding of the higher organisms. A forlorn little plant has taught us great things, the unity of living nature."

AMERICAN CLIMATOLOGICAL ASSOCIATION.

Twenty-ninth Annual Meeting, Held in Hartford, Conn., June 10, 11, 12 and 13, 1912.

(Special Report to the MEDICAL RECORD.)

THE PRESIDENT, DR. A. D. BLACKADER OF MONTREAL, CANADA, IN THE CHAIR.

(*Continued from page 685.*)

Chest and Shoulder Pains in Pulmonary Tuberculosis.—Dr. FRANCIS MARION POTTENGER of Monrovia, Cal., read this paper. The pains he referred to were of diagnostic importance, were frequently mistaken, and often erroneously treated. These pains varied in character from a mere uneasiness, a "feeling of being tired," which was specially noticed through the shoulders and interscapular regions, to a distinct severe localized pain. He called attention to a localized pain which might vary in its character, or might be very severe and which he believed to be a true neuritis of reflex origin. When he found a tuberculous patient who complained of aching in both scapular regions, he was inclined to believe that both lungs were involved. The aching was not confined to the scapular regions. It might be noted in the shoulders, neck, and anterior portion of the chest wall. The pains might be so severe that morphine was necessary for their relief. The interesting fact about the pains was their regional nature. They occurred on the same side as the involvement of the pulmonary parenchyma. The side of the greater pain was usually the seat of the greater amount of inflammatory change. One thing characteristic of the various pains in the neck and chest of tuberculous patients was the fact that they were not constant; they were influenced by weather conditions, being worse in damp rainy weather and more severe when the barometer was changing. He was beginning to look upon "rheumatism of the shoulder" as a condition associated with tuberculosis of the corresponding lung sufficiently often to call for a careful chest examination of all such cases. Another diagnostic hint he threw out was that any pain involving the neck and chest, whether it was the vague "feeling of being tired," experienced in the interscapular region, or a pain of marked severity, which was interrupted in character, being influenced particularly by

weather changes, should call the attention of the examiner to the necessity of a careful chest examination.

Memorabilia: Extracts from Medical Notes of the Late Dr. Henry Ingersoll Bowditch.—Dr. VINCENT Y. BOWDITCH of Boston said that the title of his paper was the result of looking over a series of manuscripts, prepared as a résumé of his "Life Work" by his father for his Harvard Class Report Book. In this paper were given reminiscences of the teachings of the great Louis Bowditch; the development of the ova of the snail under the microscope; and his allusion to Amos Twitchell of Keene, N. H., one of the best of men and among the cleverest of physicians in the middle of the last century. One of the notes presented touched upon thoracocentesis performed with an exploring trocar and a suction pump, a subject and operation which doubtless brought Dr. Bowditch's name into prominence more than any other single work of his medical career. He was never one to dispute with others over priority of claim to any act or deed of his. At every opportunity he acknowledged his debt to Dr. Morrill Wyman of Cambridge for the first suggestion of an instrument which in a modified form he used afterwards in hundreds of cases and forced upon the medical public. Inasmuch as one or two articles had within recent years been published in which reference had been made to Dieulafoy as the inventor of thoracic aspiration, without any allusion whatever to the exhaustive work of his father upon the same subject years before, he felt that he should be pardoned for showing some filial zeal in reviewing the subject again as a matter of justice. The chief fact that remained and was after all the best to consider, apart from all personal considerations, was that thoracocentesis had brought relief to thousands of sufferers and saved lives without number. It was hard to believe that such a simple operation, one that could be applied by any practitioner of common sense and judgment, had to be forced upon the attention of the skeptical and prejudiced public of fifty or sixty years ago.

Dr. J. H. PRATT of Boston, Mass., said that he had become acquainted with much that Dr. Louis Bowditch had written in a search for memoirs. There was a freshness and a modern tone about his writings that appealed to the reader to-day. In all of Dr. Bowditch's writings one saw the results of very careful observation and a careful weighing of facts. Many of his writings could be read with both pleasure and profit to-day. Louis Bowditch was the patron saint of the Massachusetts General Hospital and Dr. Pratt had read some of his records. There were no records of physical examinations but only of histories and treatments. He found a volume which contained the report of the first autopsy done by Dr. Bowditch; it was a model of careful objective description and he wished that it might be reprinted on this account.

Colds and Pneumonia.—Dr. WILLIAM DUFFIELD ROBINSON of Philadelphia said that many cases of pneumonia, tuberculosis, bronchopneumonia, rheumatism, etc., had only been possible by a preceding catarrhal disease of the breathing highway named "common colds." The maintenance of vigorous health in the membranous regions involved in respiration should be a duty at all ages of life. To attain this, the essentials were cleanliness, avoidance of irritants, and of thermic shock, and when needed, the use of proper antiseptics. As a preventive and curative, an abundance of clean fresh air was nature's and man's best agent. A prolonged séance of slow deep breathing would often prevent the development of a cold if indulged in when the first well known symptoms were recognized. Colds, especially in the very young and old, led to the development of bronchopneumonia. In pneumonia, an acid blood was deemed desirable to reduce the coagulability of the blood and to inhibit the multiplication of the pneumococci. In colds, if an active alkalinity of the blood was induced early in the history, a prompt termination of the attack was secured. To secure such alkalinity, the skin must be used as a portal of introduction, as the stomach could not tolerate the required amount. Two pounds of common carbonate of sodium dissolved in a bath tub full of water at a tepid temperature was the correct strength of the solution. In this the patient should be given a fifteen-minute soak. Spraying a 1 or 2 per cent. solution of magnesium sulphate over the nasopharyngeal membrane was quite an addition to the treatment of these cases. When the respiratory passages were much irritated by a cold, much comfort and assistance toward cure resulted from the inhalation of various volatile oils. Ten or fifteen grains of a salt of quinine which actively excited leucocytosis was very effective, especially if given before there had developed structural changes in the nose, throat, and bronchial tissues. Bacterins, antitoxins, and the hypodermic use of camphorated oil were likely to steadily advance in popularity. Pneumonia was the most frequent and the most fatal of all acute infections which caused death; it caused one-eighth of all deaths, which was more than the number caused by consumption. Pneumonia occurred three times as frequently as it did fifty years ago. The extent of lung involvement was not to be relied upon as a sure index of the seriousness of any case. Active, virulent pneumococci might be present in the blood current before any evidence of involvement of any part of the lung could be recognized. The first physical change in the lungs in pneumonia was a congestion of the capillaries about the alveoli followed promptly by a clear serous exudate fully dilating the alveoli. Fibrin promptly formed in this causing consolidation. Dr. Robinson had not found any record of the finding of the pneumococcus in the first clear serous exudate; but after the integrity of the alveoli had been broken and fibrin had exuded into them, they were found abundantly. In animal experimentation on dogs and sheep it was not found easy in healthy animals to produce the disease by injecting cultures of virulent pneumococci into the bronchial tubes unless some violence occurred which probably caused trauma and hence solution of continuity. The serum of immunized animals was not effective in checking the disease as would be expected by analogy with other infections. It was thought by some that it was the exudate that caused the fever, but the exudate remaining and being absorbed after the crisis did not cause fever. No isolated toxin had been procured from the blood or culture from a pneumonic case. The most virulent pneumococci autolized much more readily than the non-virulent kind. A transition of staphylococci into pneumococci resulted from passage through the bodies of animals. With regard to the treatment of pneumonia, adrenalin given hypodermically and oxygen passed through absolute alcohol were probably the best circulatory sustaining procedures known. Strychnia properly held a most important place. Outdoor treatment was of great importance. Hot baths and copious diluents to help eliminate the products of the destroyed bacteria and leucocytes were of great value. The head should be kept low. Calomel should always be given as a first medication and constipation should be avoided. Dry cupping was comforting.

Pneumonia in Open-Air Sanatoria.—Dr. HARRY LEE BARNES of Wallum Lake, R. I., read this paper and offered the following conclusions: (1) Twenty-seven sanatoria for tuberculosis, from records equivalent to observation on 13,582 patients for one year, reported 18 cases of lobar pneumonia with seven deaths, or a mortality rate of 53.99 per 100,000 population. (2) If allowance be made for a different age distribution in sanatoria from that of the general population, a normal death rate for lobar pneumonia in sanatoria should be about 28.46 per 100,000 population. (3) Thirty-eight and eight-tenths per cent. of the cases of lobar pneumonia died, the high mortality probably being due to preceding tuberculous disease. (4) If allowance was made for the high mortality rate of the cases and for the probable slight under-rating of lobar pneumonia in the census, it appeared likely that the incidence of lobar pneumonia was about the same in the sanatoria as in the general community. (5) The impression that lobar pneumonia was rare in sanatoria for tuberculosis was due to the small population under observation and to the fact that sanatorium patients were at ages which furnished but 36.6 per cent. of the lobar pneumonia cases. (6) This investigation furnished no evidence that the incidence of lobar pneumonia was influenced by the open air life in sanatoria. (7) The death rate from all forms of pneumonia in sanatoria was 117.83 instead of 32.78 per 100,000 as should be expected, the frequency being largely due to aspiration pneumonia.

Dr. LAWRASON BROWN of Saranac Lake, N. Y., said it was not an easy thing to make a diagnosis of pneumonia when a patient was afflicted with pulmonary tuberculosis. The mere finding of the pneumococci did not prove anything. He really questioned whether a diagnosis was ever made except at autopsy. Sometimes, following a hemoptysis, one got an involvement of an entire lobe which occasionally cleared up, but it was difficult to say positively that such a case was one of lobar pneumonia

Dr. J. H. PRATT of Boston, Mass., said that if he had understood Dr. Robinson correctly he had said that cases of so-called pneumonia coming to autopsy early showed only serous exudate; if such was the case pneumonia was not present. He had not found a single case in which autopsy was made in the initial stage where the only lesion was congestion. In a case in which death supervened at the end of twenty-four hours after the onset, there was consolidation and very little fibrin formation. There was, however, a remarkable proliferation and

desquammation of the epithelium lining the alveoli. If there were only a serous exudate in the first stage, how could a diagnosis be made?

Dr. MORRIS MANGES of New York said that he could not see what advantage was gained by keeping the head low in pneumonia or by placing a tight binder around the patient. If the body had rest the patient would be the gainer. The use of a tight binder would not keep the vessels empty but would embarrass the movements of the diaphragm. Relying upon strychnine as a stimulant was like relying upon adrenalin; if stimulants were needed caffein and digitalis could be used. Later in the course of the disease camphor could be used.

Dr. A. D. BLACKADER of Montreal, Canada, said he differed from the speaker regarding the efficacy of drug medication. They all knew the effects of caffein, strychnine, and digitalis on the respiratory center and on the heart. Camphor was a temporary but prompt stimulant. Caffein was more of a heart stimulant. Action on the medulla would do good in these cases in spite of all the statements made by Cabot.

Dr. W. DUFFIELD ROBINSON of Philadelphia said that they had produced pneumonia in dogs and sheep and had then killed them. During the early stages there was a closure of many of the alveolar structures and pneumococci were found. The abdominal binder kept the intestines free from gas.

Dr. WALTER ALDEN GRIFFIN of Sharon, Mass., gave the history of a woman with tuberculosis who was kept in bed for a week or two with a slight temperature. She was then allowed to get up. She was seized a few days later with a severe chill and there appeared distinct signs of consolidation, rusty sputum, and other symptoms of pneumonia, and the patient died after an illness of five days.

Dr. HARRY LEE BARNES of Wallum Lake, R. I., said, in closing the discussion, that it was difficult in every case to make a diagnosis of pneumonia when pulmonary tuberculosis was present. He related the case of a woman who entered a sanatorium because of a temperature due to tuberculosis. Suddenly this temperature rose to 103° or 104° F., stayed there eight or nine days, and then went down with the typical crisis of pneumonia. She had a typical rusty sputum, dyspnea, and cyanosis, in fact every clinical symptom of pneumonia, and there were an enormous number of pneumococci in the sputum.

The Results of Dispensary Work in the Control of Tuberculosis.—Dr. CLEAVELAND FLOYD of Boston said that, in order to determine as far as possible how well the dispensary met the demands made upon it, he had been for several months making a statistical study of what had been accomplished among such patients as presented themselves at the clinic of the Boston Consumptives' Hospital. All types of patients were received there who complained of pulmonary symptoms. The clinical material at their disposal had consisted largely of three groups of cases: (a) negative cases; (b) cases of non-pulmonary disease; (c) cases of pulmonary tuberculosis. The results obtained in the first 5,000 patients examined at the clinic beginning September, 1907, and continuing into the middle of the year 1909, after an average period of observation of two years and five months, had been carefully scrutinized and, with the aid of some twenty visiting nurses during a period of sixteen months, as much data as possible had been obtained. Among some 5,000 patients there were found 2,121 positive cases of phthisis, 1,130 who were suspected of having the disease, and 1,707 who were negative on the first examination. Of the remaining 42 they had insufficient data. Of this total number, 1,315 were lost to the clinic through their giving incorrect addresses or moving away. Five hundred and seventy-five were considered negative when lost to the clinic, 382 were suspected cases, and 358 had definite pulmonary tuberculosis. In other words, one-sixth of the positive cases were lost during the period of observation of two years and five months. It was only natural to expect that a larger group of negative cases should be lost sight of, as it was the custom to pay less attention to this group than to those demanding active supervision in almost any clinic. This percentage of cases that disappeared, making as it did about a fifth of their total number, would of course increase in larger cities than Boston, where population shifted more rapidly, as in New York. For those patients who moved without the city limits and consequently escaped the jurisdiction of the health board, either State supervision or a metropolitan plan of cooperation among tuberculosis clinics, it seemed to him, would be the wisest measure. By these means the floater and drifter having active tuberculosis could be more readily controlled and the work of the dispensary made productive of greater usefulness at one of its weakest points, for it was in the close following up of patients alone that they could hope to do prophylactic work as well as to increase the present value of sanatorium treatment. Among 1,707 cases who were considered negative at their first examination and whom they had been able to reexamine recently, there were still found 604 perfectly well and 528 reported themselves as well or had developed some other disease than pulmonary tuberculosis. The real test of how efficient the supervision of the clinic and its nursing force might be could be determined from the following facts: (1) How many cases under observation for a period of years who were negative to tuberculosis or suspected of having it, subsequently developed the active disease? (2) How large a proportion of the cases subsequently succumbing to the disease died in a hospital? From these facts the power of the clinic for the prevention of tuberculosis would be demonstrated and also the effectiveness of removing to places of isolation those who were sources of danger to the community. In the group of negative cases among 1,132 whom he had obtained data upon, only 24 had developed phthisis during the period of observation of two years and a half. In the group of cases classed as suspected, among 748 cases that they had been able to follow, only 62 cases developed active disease. Thus among the total of 1,880 negative and suspected cases, only 86 developed active tuberculosis. Among a total of 1,130 cases suspected of pulmonary tuberculosis, 624, or about 60 per cent., gave signs at the right apex. The other 40 per cent. were almost equally divided between questionable signs at the left apex and base. Almost without exception these signs had either cleared up or had failed to develop into active tuberculosis. Where the right apex, however, had shown questionable involvement, 62 of the number that they had been able to follow developed phthisis.

Dr. H. R. M. LANDIS of Philadelphia said that he had been interested in a similar work and he wished to emphasize the importance of the work the dispensaries were doing. The greatest drawback up to the present time was the attempt to cover too much territory. During the past seven years he had studied 1,100 cases and had lost sight of 320. Of the 1,100 cases, 915 were treated on the supposition that they had tuberculosis; of these 410 died, and of 184 living when the work stopped, 107 were back at work. Patients discharged from sanatoria usually had the conviction that they were cured and did not pay any attention to the doctor's orders regarding their mode of life. All cases should be strongly urged to report at intervals and should be educated in the necessity of keeping up the method of living prescribed for them.

Dr. CHARLES L. MINOR of Asheville, N. C., said that when a patient was discharged from a sanatorium or by his physician, he should be followed up. Doctors were derelict in their duty if they did not watch these patients closely. However intelligent the patient might be he should be seen at first every two weeks, then every month, and later every three months for a period of three years. The fact that he was not absolutely well and must live the right kind of a life must be drilled into the dispensary patient.

Dr. H. H. WHITCOMB of Norristown, Pa., said that the great difficulty they met with was the ignorance of their patients and especially of those who believed in taking medicine. They were in the habit of giving some placebo which caused the patient to return in order to have it refilled. If the patients were taken away from their occupation, they soon drifted back into the same condition as when first seen; proper occupation should be sought for them.

Hemic Murmurs.—Dr. HERBERT F. WILLIAMS of Brooklyn, N. Y., said that during the last year or two it had seemed to him that he had met with an uncommon number of these cases and in such various stations of life that his mind was called afresh to the significance of these manifestations. Analyses in all these cases must have shown blood deterioration, which in some cases was coexistent with or preceded a tuberculous expression; in other cases there had been a persistency of these murmurs not followed by any decline in health but which made one fear that some outbreak of some kind would follow. Dr. Williams reported a case in detail which recovered after the injection of leucocytic extract, 90 c.c. being given in all. The patient was 35 years of age and his metabolism had been much disturbed. He was seized with a lobar pneumonia of great severity; on the second day the murmur, which had been confined to the subclavians, extended over the chest. Upon slight exertion, like turning in bed or coughing, there would appear an extra murmur, unusually loud and portentous. This sudden accession in the number and intensity of these hemic murmurs was interesting as well as disquieting. He had never been entirely satisfied

as to the explanation of the cause of these murmurs which had been classified as organic. A report which included a record of seven cases appeared in the November, 1908, number of the *Journal of Medical Research*, and he was informed that a further report would soon be published. In the report of these cases of pneumonia, several well-known men in New York were the observers.

Dr. CLEAVELAND FLOYD of Boston said that he had treated 20 cases of pneumonia at the Massachusetts General Hospital with leucocytic preparations; many of these were very severe cases in alcoholics. Dr. Floyd said he did not remember the effect on the hemic murmur, but that the mortality was lowered to 12 per cent., as compared with the general mortality of 20 per cent. They had tried this method in a group of cases where there was general infection with localization in the lungs and no results whatever were obtained.

Dr. J. H. PRATT of Boston asked if the patients treated were selected cases. In the other service in the Massachusetts General Hospital where the leucocytic extract was not used at all the mortality was very low that year. The mortality from pneumonia differed from year to year.

Dr. CHARLES E. QUIMBY of New York said that he did not believe that all appreciated the changes that had occurred in the manifestations of pneumonia during the past twenty years. To-day pneumonia meant all sorts of things. At times there were vasomotor disturbances and no exudative disturbances in the lungs at all.

Dr. HERBERT F. WILLIAMS of Brooklyn, N. Y., in closing the discussion, said he wished it understood that the cases were desperate ones, well-nigh hopeless, and they were not hospital cases. Giving 10 c.c. of fluid into the subcutaneous tissues was a painful operation and a hypodermic of morphine should be given, together with a local anesthetic.

Cardiac Arrhythmia, Illustrated by Lantern Slides of Polygraphic Tracings.—Dr. THOMAS A. CLAYTOR of Washington, D. C., said that auricular fibrillation (the wholly irregular pulse) was characterized by an entire loss of the sinus or fundamental rhythm; the beats were irregular both as to time and as to volume. In the venous tracing the auricular wave was missing; in other words, there was no auricular contraction, the venous pulse being of the ventricular or positive type. There was a general fibrillary contraction of the auricular muscle, but no contraction of the muscle in mass. The electrocardiograms showed an absence of the P wave (auricular contraction) and by a series of fine undulations that there were a number of impulses at the rate of four to nine hundred a minute trying to get through to the ventricles. Of course, the ventricles were unable to respond to anything like this number and hence responded only as they might; this resulted in absolute irregularity. With regard to the pathology of the auricular fibrillations, the heart muscle as a whole showed a more or less marked grade of inflammatory changes, resulting in fibrosis. The morbid changes were said to be particularly marked in the auricular tissue, especially at the sinoauricular junction; the same changes had been noted in the auriculo-ventricular bundle and in scattered areas of the ventricular musculature. Though these very decided changes had been noted in cases of auricular fibrillation just the same conditions had been found where during life the rhythm had been normal. It was in this form of irregularity that digitalis had been found of the greatest value. It apparently acted by cutting down the number of contractions which got through to the ventricle. The prognosis was not good. The pulsus alternans was not properly a disorder in the cardiac rhythm and this form of irregular pulse was seen clinically under two sets of circumstances, namely: (1) when the apparently healthy muscle was overtaxed, especially when the rate was unusually rapid, as in tachycardia; (2) when the musculature was profoundly affected, usually by senile changes. In conclusion, the speaker said that physiologists and anatomists had materially advanced their knowledge of the heart mechanism and that they had been ably supported by a few clinicians; but it was now necessary that more of the latter enter the field and by careful observation and records of clinical cases try to clear up the many important points yet unsolved. Even a very superficial study of the cardiac arrhythmias would convince one that they were intensely interesting and very important for prognosis and therapeutics.

Dr. J. H. PRATT of Boston said that he thought it of the greatest importance to be able to distinguish between extrasystole and auricular fibrillation, but he believed this could be done in the majority of cases by palpation of the pulse alone. One should measure the length of the beats; if they were irregular, one might be sure that he was dealing with auricular fibrillation.

Dr. THOMAS A. CLAYTOR of Washington, D. C., said he believed that pulse tracings should be taught in medical schools. This was difficult, however, without some previous experience with the study of the pulse.

The Auscultation of the Whispered Voice.—Dr. MORRIS MANGES of New York said that the whispered bronchial voice was a sign the value of which was often neglected in the detection of early infiltration of the lung. It was also useful in pneumonia in determining whether the signs of consolidation which were heard on the sound side were transmitted or not, as it was the only sign of consolidation which could not be transmitted to the sound side. He urged that while the range of usefulness of the auscultation of the whispered voice was not as great as some of its advocates would claim, yet it could often afford so much information that its routine use in physical examination should not be neglected as much as had been the case.

Dr. JUDSON DALAND of Philadelphia said that the main point was the usefulness of the auscultation of the whispered voice in small consolidations and where one did not wish to have the patient disturbed more than was necessary, particularly in cases of hemorrhage. The auscultation of the whispered voice was especially useful when they were dealing with disseminated consolidations. These findings should be checked up by the skiagraph.

Dr. J. M. ANDERS of Philadelphia said a great deal might be learned by careful inspection. He had never known of one side being affected where the opposite side did not show a greater motility.

A Study of Primary Malignant Disease of the Lung.—Dr. ROLAND G. CURTIN of Philadelphia said that the rarity of primary cancer of the lung was shown by the statistics of Dr. John A. McGlinn of Philadelphia, who recently collected the data from the post-mortem rooms at the Philadelphia General Hospital. In 8,515 consecutive post mortems he found 457 bodies with cancer, and of these only four were primary cancer of the lung. The statistics of Dr. Curtin's own cases showed that he had met with seven cases of primary carcinoma and sarcoma of the lung; the males numbered four, the females two, and there was one male with sarcoma of the lung. There were four cases with and three without effusion. The right side was involved in six cases, the left in one. Four cases were tapped and three were not. The tapping did not relieve two and two were only slightly relieved. There was marked dyspnea in six of the seven cases. The average age of the patients was 52. The average age of Dr. McGlinn's cases was 42 years; Dr. Musser's cases averaged 55 years. The most common complication was metastases in the surrounding tissues; most commonly the pleura was affected. The first symptom was often a gradual loss of flesh, more likely to be present in carcinoma than in sarcoma. Pain might be slight at first and was generally on the side affected. There was sometimes a blood spitting that was so characteristic that a diagnosis might be made from it alone. There was a dark purple globule of blood encased in a transparent glazed membrane about the size of the end of the little finger. It was sometimes lobulated or it might be rounded in form. The color was like grapes or dark currant jelly. The surrounding fluid was clear and unmixed with blood. The physical signs were those of a solid tumor or those of pleurisy.

Dr. J. N. HALL of Denver, Colo., said he had noticed when attempting to make a diagnosis by means of puncture that nodules developed along the site of puncture. He asked if this was common in the experience of others.

Dr. J. H. ELLIOTT of Toronto, Canada, said that a striking feature of primary cancer of the lungs was that the expectoration was not purulent and hemoptysis occurred later than in cases of pulmonary tuberculosis. At no time would there be currant jelly expectoration, but a mucoid expectoration. Many cases that were regarded as primary malignant disease were not such at all. Dr. Elliott cited the case of a man with a primary growth of the left bronchus; he gradually died with marked secondaries in the liver and other organs. He had had hemoptysis for many months before he sought assistance. The hemoptysis was the leading feature in this instance.

Dr. MORRIS MANGES of New York said he had seen two cases of new growth of the lung diagnosed by hardening the sputum and then cutting it as one would cut sections. The presence of small thoracic glands in the fourth and fifth spaces was not infrequently met with. The fluid removed by aspiration in these cases was usually large in amount and bloody. Cytology could not be used because of the bloody mucus. The failure to give relief by aspiration was very often due to an enlarged bronchial gland which, by its pressure, caused dyspnea.

Dr. VINCENT Y. BOWDITCH of Boston reported a case that he had seen where there was dullness at the right

apex with fever and bloody sputum, all mislcading. There was deep dyspnea. A diagnosis of incipient tuberculosis was made. One day he was called and found the patient in a fearful condition, gasping for breath. The patient was aspirated and experienced some relief. He ate a hearty supper and fell back dead. This was a case of malignant disease of the lung.

Dr. J. H. Pratt of Boston said he wished to endorse what Dr. Bowditch had said. He had seen the patient referred to before the others saw him, and even with that experience before him he would now have difficulty in making a diagnosis in such a case. The patient showed classical signs of a beginning tuberculosis. Dr. Walter Alden Griffin of Sharon, Mass., said that the patient showed signs of a beginning tuberculosis. The autopsy did not discover any definite point of beginning malignant disease, but they concluded that the disease started in the mediastinum and called it lymphadenoma. Dr. Griffin said he had seen one other case of malignant disease of the lung which presumably started in the mediastinum and was dermoid cystic in character. It did not involve the lung but pushed the lung aside.

Dr. Edward R. Baldwin of Saranac Lake, N. Y., reported a case of sarcoma of the pleura which had been diagnosed as tuberculosis. The patient had all the cardinal symptoms of tuberculosis. The autopsy made some months later showed sarcoma of the pleura which extended through into the mediastinum and finally involved the abdomen and peritoneum.

Dr. A. Jacobi of New York said that his experience with these cases was not as large as that of some of the others present, but he had seen cases of mediastinal adenomata; in one case the growth was very large and the glands were enlarged at about the fourth or fifth rib. It was his impression that a large number of these cases of carcinoma of the lungs were secondary, and that the primary cases were very rare. So far as the treatment of these cases was concerned, Dr. Jacobi believed that modern surgery of the chest would be of some service provided the diagnosis was made early enough. The book of Isaac Adler would be found of value to those interested in this work.

Dr. Roland G. Curtin of Philadelphia said, in answer to Dr. Hall's question, that he had never seen nodules develop after puncture of the chest. The cases reported seemed to him more like sarcoma than carcinoma. If pus was present it was late in the disease. He had participated in four post-mortems and in all of them the secretions, blood and serum, were encapsulated. He had never seen a case where the pleural cavity was occupied by one mass of fluid.

Concerning Chronic Septic Endocarditis.—Dr. Glentworth R. Butler of Brooklyn, N. Y., said that for a number of years certain cases of endocarditis had attracted attention because of their latency and long duration. About 250 such cases had been studied by Osler, Libman, Billings, and others, so that now they were in a position to define it as a distinct entity among the endocarditides. In the great majority of instances there was a bacteriemia, and by far the most common organism found was a streptococcus; this grew poorly and produced a green pigment in the process. The pathological anatomy was that of a vegetative rather than an ulcerative endocarditis. The long duration of this form of endocarditis was one of the striking features; it was the chronicity of the disease which first attracted to it the attention of clinicians. It ran a course of from four to twelve months and even longer. From a clinical point of view, its latency was remarkable. Commonly there was not a leucocytosis; after the disease had progressed for some time there was a progressive anemia. This form of endocarditis was almost invariably engrafted upon an old mitral or aortic valvular lesion. Among the other signs, enlargement of the spleen could usually be demonstrated. Gastrointestinal disturbances occurred. Pains in the joints, bones, muscles or various nerves were very common. Petechial spots developed in the majority of the cases. The appearance of ephemeral cutaneous nodes was said by Osler to be pathognomonic of this form of endocarditis. The diagnosis during the early stages was difficult. The prognosis was unfavorable.

Dr. Charles L. Minor of Asheville, N. C., said Dr. Libman of New York City had stated that certain of these cases were due to the influenza bacillus and not to the streptococcus. Dr. Rosenow of Chicago had stated that many of these cases were due to the pneumococcus. This appeared to show the polymorphism of the germ. The lesion in the heart was followed by definite lesions elsewhere. For instance, in a lesion of the aortic valve, the lesion crossed to the mitral valve, then to the chordæ tendineæ, then to the columnæ carneæ, and possibly ulceration occurred.

Dr. Herbert Maxon King of Liberty, N. Y., said that during the past year and a half he had seen two cases at the Loomis Sanitarium and in both instances the diagnosis made was tuberculosis. This showed the frequency with which the condition was confused with tuberculosis. In both cases there was a history of rheumatism and endocarditis in childhood. In the first case there was a polymorphonuclear leucocytosis which was rather suspicious. The blood culture resulted in the recovery of the streptococcus. The patient was with them for nine or ten months and did not develop petechial spots until two or three months before his death. The second case came to the sanatorium with an enormously enlarged spleen which filled the entire left side of the abdomen and was very suggestive of Banti's disease. There were large areas of petechial spots over definitely separated parts of the body. There was every appearance of septic endocarditis. He was surprised to learn that the condition was so frequently mistaken for tuberculosis. It seemed to him that tuberculosis could be excluded by a very careful examination and observation.

Dr. Morris Manges of New York said that these cases were not rare and that the picture was so characteristic that after seeing a number of cases one could not mistake them. One should carefully inspect the conjunctiva and the mucous membranes. The petechiæ were often found in the mucous membrane of the lower eyelid. They were also found in the folds of the axilla. Painful nodes alongside the big toe or on the hands (the favorite place being about the finger nails) were absolutely characteristic of the disease. These nodes lasted four or five days and then disappeared. Blood cultures taken a dozen or more times might give negative results. Dr. Butler had failed to mention the cases due to the gonococcus; these were rare but they did occur. In these cases there was a polymorphonuclear leucocytosis. Dr. Manges then referred to characteristic kidney lesions, which occurred only in ulcerative endocarditis and which had been described recently before the New York Pathological Society. In following these cases up one found that some of them would have a spontaneous cure. This made it possible for them to revise their prognosis. Thus far the vaccines, both stock and autogenous, had proved useless. Remissions sometimes occurred which lasted for months, but after a time the disease would resume its course. Hemorrhage was a curious feature of this disease, giving a clue to those who were not familiar with its manifestations.

Dr. J. H. Elliott of Toronto, Canada, said he had seen an interesting case in a woman, 25 years of age, who had a mitral stenosis. She played tennis and developed an influenzal cold. The fever persisted and a cough and changes in the lungs suggested tuberculosis. Occasional râles changed from day to day with the position of the patient. Finally a diagnosis of septic endocarditis was made. Signs of mitral insufficiency developed and then embolism of the tibial artery, which was followed by dry gangrene of the extremities. This was followed by a thrombosis of the femoral artery which at autopsy was found to extend one-half an inch through the iliac into the aorta.

Dr. A. Jacobi of New York said that Dr. Osler was the first to call attention to the fact that there was often an entire absence of symptoms in these cases. Where symptoms were absent the fact was explained by the deposits being located away from the edge of the valve so that they did not change the direction of the blood current.

Dr. Glentworth R. Butler of Brooklyn, N. Y., in closing the discussion, said that in the early stages there was leucopenia rather than leucocytosis. In the second stage a leucocytosis did make its appearance; in his series of cases it was not common in the ulcerative type.

(*To be continued.*)

State Medical Licensing Boards.

STATE BOARD EXAMINATION QUESTIONS.

Louisiana State Board of Medical Examiners.

May 30, 31, and June 1, 1912.

(*Concluded from page 680.*)

OBSTETRICS.

1. Describe the fetal circulation.

2. What is the conjugate and transverse diameters of the inlet and outlet of the pelvis? Give the anatomical points of the measurements.

3. Enumerate (*a*) the causes of delayed labor, (*b*) the dangers, (*c*) management.

4. State the causes of post-partum hemorrhage and the treatment.
5. Describe the third stage of labor, the dangers which attend it, and the methods of conducting it.
6. Mention two conditions liable to cause prolapse of the cord and the treatment for one condition mentioned.
7. What can be determined by external palpation of the pregnant woman at term?
8. Give (*a*) causes, (*b*) diagnosis, (*c*) mechanism, and (*d*) management of a face presentation.
9. Name the diameters of the fetal head.
10. Describe an embryo at the second month.

GYNECOLOGY.

1. Give a description of the physiology of menstruation.
2. What are the causes of hemorrhage from the non-pregnant uterus? Give the treatment for any two of the number which you mention.
3. What is urethral caruncle and its treatment?
4. Give the etiology and treatment of acute general cystitis.
5. Why is gonorrhea in women a grave disease?
6. Define salpingitis and state its causes and pathology.
7. What are the most common benign growths found in the cavity of the uterus?
8. Give the symptoms of ovarian cyst. What is the treatment?
9. Give the physical signs of cancer of the uterus at an early stage.
10. Describe the technique for supravaginal hysterectomy.

SURGERY.

1. How would you treat a compound fracture, say, of the tibia?
2. What is talipes equinovarus? Give treatment.
3. Give diagnosis and treatment of epithelioma of the lower lip.
4. Give symptoms and treatment of ulcer of the pylorus.
5. A woman comes to you with a lump in her breast, what steps would you take in order to make a diagnosis and how would you treat it?
6. Give signs, symptoms, and treatment of aneurysm of the popliteal artery.
7. What is a wen? How would you treat it?
8. What is varicocele? How would you treat it?
9. Give symptoms and treatment of enlarged prostate.
10. Describe briefly the Bassini operation for inguinal hernia.

HYGIENE.

1. Name and describe briefly the different methods of domestic water purification.
2. What are the most important foreign ingredients, organic and inorganic, in water.
3. What are the major sanitary details in the production and marketing of pure milk?
4. What is Pasteurization of milk and what are its advantages and disadvantages?
5. What are the relative merits of formaldehyde and sulphur dioxide as disinfectants, and in what form and in what manner are they applied?
6. What are the sources of the impurities in air and what relation do these impurities bear to health?
7. What sanitary measures should be instituted in the care of a typhoid patient?
8. What is understood by (*a*) natural immunity; (*b*) acquired immunity; (*c*) give examples; (*d*) what are the causes of immunity?
9. How is tuberculosis detected in the cow?
10. What diseases of the (*a*) skin, (*b*) spine, (*c*) respiratory tract, (*d*) digestive system, (*e*) throat are especially prevalent in school children, and how would you detect eyestrain, adenoids, trachoma, and infectious catarrhal conjunctivitis?

ANSWERS.

OBSTETRICS.

1. *Fetal circulation.* "The blood returning from the placenta, after having received oxygen and being freed from carbonic acid, is carried by the umbilical vein to the under surface of the liver; here a portion of it passes through the ductus venosus into the ascending vena cava, while the remainder flows through the liver and passes into the vena cava by the hepatic veins. When the blood is emptied into the right auricle, it is directed by the Eustachian valve through the foramen ovale, into the left auricle, thence into the left ventricle, and so into the aorta and to all parts of the system. The venous blood returning from the head and upper extremities is emptied, by the superior vena cava, into the right auricle, from which it passes into the right ventricle, and thence into the pulmonary artery. Owing to the condition of the lung only a small portion flows through the pulmonary capillaries, the greater part passing through the ductus arteriosus, which opens into the aorta at a point below the origin of the carotid and subclavian arteries. The mixed blood now passes down the aorta to supply the lower extremities, but a portion of it is directed, by the hypogastric arteries, to the placenta, to be again oxygenated." (Brubaker.)

2. The *conjugate diameter* of the *inlet* of the pelvis is a line drawn down the middle of the sacral promontory to the top of the symphysis pubis. It is about four inches in length. The *transverse diameter* of the *inlet* of the pelvis is a line drawn right across the pelvis from one lateral margin of the brim to the other. It is about five inches in length. The *conjugate diameter* of the *outlet* of the pelvis is a line drawn from the tip of the coccyx to the lower surface of the symphysis pubis. It is about five inches in length. The *transverse diameter* of the *outlet* of the pelvis is a line extending across the pelvis from one tuberosity of the ischium to the other. It is about four inches in length.

3. DELAYED LABOR. *Causes:* Obstruction, uterine inertia, uterine exhaustion. *Dangers:* Asphyxiation of fetus, post-partum hemorrhage, sepsis, pressure-necrosis and fistulæ, exhaustion or death of the mother. *Management:* The case should be treated early; causes should be removed when possible; a warm vaginal douche, and the administration of morphine, chloral, or quinine have been recommended; delivery by forceps may be necessary.

4. POST-PARTUM HEMORRHAGE. *Causes:* Anything interfering with the firm contraction of the uterus after the expulsion of the child; retained placenta, or membrane, or clots; weakness of the uterine muscle; rapid labor; delayed labor; poorly developed uterine muscle; inflammation or disease of uterus.

Treatment: Grasp the uterus at once, through the abdominal wall, and massage it firmly. Anything in the uterus should at once be cleaned out. Pass one hand into the uterus, and with the other on the outside make firm pressure. A hypodermic of ergotin or ergot can be given by an assistant. An intrauterine douche of hot sterilized water (about 115° F.) may be given. Sometimes a very thorough packing and plugging of gauze of uterus and vagina may be necessary. Whatever is done must be done promptly; and everything likely to be needed for this emergency should be prepared beforehand in every labor.

5. In the *third stage of labor* the physician should seize the fundus of the uterus through the abdominal wall and knead and rub it until it contracts vigorously; then he should press it down in the direction of the axis of the pelvic inlet. This should last for about a quarter of an hour after the child is born. The placenta, after it is expressed, should be carefully taken by the physician so as to be sure that it is *all* expelled; at the same time care must be taken that no particle of membrane remains behind. Fluid extract of ergot may be administered. The *dangers* are: hemorrhage: retained placenta or clots or pieces of the membranes; and sepsis.

6. PROLAPSE OF THE CORD. *Two causes:* Excessive length of the cord, and hydramnios. *Treatment* consists in: (1) Not rupturing the membranes prematurely, unless there is some positive indication; (2) postural treatment, in which the woman is placed on her back or on the opposite side to that on which the cord lies, with hips and pelvis elevated, or the knee-chest position may be adopted; (3) reposition of the cord, either manually, or with some form of repositor; (4) speedy delivery by forceps or podalic version.

7. Whether the fetus is alive or dead; whether the pregnancy is single or multiple; the presentation and position of the fetus.

8. FACE PRESENTATIONS. *Causes:* Anything which interferes with the flexion of the chin, such as goiter or other tumors, hydrothorax, a very large fetal head, uterine tumors, several coils of the cord around the neck.

Diagnosis: "The unusually prominent bulk of the cranial vault is felt in one hypogastric region; a deep groove between the occiput and the child's back may often be made out. The fetal heart-sounds are loudest over the anterior surface of the fetus, or on that side of the maternal abdomen upon which the fetal extremities are felt. The diagnosis, however, must usually rest on a digital examination, which shows before the onset of labor a high situation of the presenting part; a flattening of the anterior vaginal vault; a sharp contrast between the smooth outline of the fetal forehead and the irregular contour of the face. As

soon as the os is dilated, the characteristic features of the face may be felt."—*Mechanism:* The successive steps are: Extension—The head presents at the superior strait imperfectly extended, so that every case of face presentation may be said to begin as a brow presentation. There is also at first imperfect engagement of the presenting part, on account of the large diameters presented at the superior strait. Under the influence of the expulsive action of the uterus and the resistance of the pelvic walls, the brow, caught upon the pelvic brim, is held stationary, while the chin descends lower and lower by an extreme extension of the head. Molding, or an accommodation of the shape of the presenting part to the shape of pelvis, occurs to a moderate degree or not at all, because the face is a loose fit in the normal pelvis. The molding is confined to the back of the skull. Lateral inclination is a constant feature, so that one cheek is a little deeper in the pelvic canal than the other one. Descent of the presenting part follows the dilatation of the cervical canal, the descent of the chin being accomplished almost solely by the extension of the head, and not by a descent of the head as a whole. Anterior rotation of the chin occurs as soon as it encounters the resistance of the pelvic floor. Anterior rotation is followed by the engagement of the chin under the symphysis pubis. Then follows the delivery of the head by flexion and propulsion, the mouth, nose, eyes, and forehead sweeping over the perineum and appearing successively at the posterior commissure. Restitution and external rotation follow the escape of the head from the same causes that impose those movements upon the head in a vertex presentation. The delivery of the body takes place as in a vertex presentation."—(Hirst's *Obstetrics.*)

Management: If the chin is presenting anteriorly, expectant treatment may suffice; but care must be taken to observe that the chin does not rotate backwards. Spontaneous version may occur, and the presentation become a vertex one. Failing this, or as a means of favoring this, postural treatment, such as Walcher's position, has been recommended. If, in spite of this, engagement has not occurred, cephalic version is indicated, care being taken not to rupture the membranes. If this is not successful, podalic version should be tried. If, after all these manipulations, the child is still alive and the head is engaged, symphyseotomy is indicated; if the child is dead, craniotomy should be performed.

9. The fetal head has the following diameters: Occipito-frontal, occipito-mental, bitemporal, biparietal, suboccipito-bregmatic, trachelo-bregmatic, and mento-bregmatic. Of these, the occipito-frontal is 4½ inches; the occipito-mental is 5½ inches, and all the others are approximately 3½ inches.

10. *Second Month:* "The embryo is still markedly bent on itself, and the visceral clefts and arches are the most prominent characteristics of its cephalic region, while the extremities are in a very rudimentary condition. In the latter part of the month, owing to the development of the brain, the head becomes considerably larger, and assumes a certain resemblance to that of a human being. At the same time the nose, mouth, and ears become less prominent and the extremities more developed, so that it can be seen that they are made up of three portions. The external genitalia also make their appearance in the latter part of this month, and at its end the fetus has attained a length of 1 inch."—(Williams.)

GYNECOLOGY.

1. *Menstruation* is a periodic discharge of blood from the mucous membrane of the uterus, due to a fatty degeneration of the small blood-vessels. Under the pressure of an increased amount of blood in the reproductive organs, attending the process of ovulation, the blood-vessels rupture, and a hemorrhage takes place into the uterine cavity; thence it passes into the vagina. Menstruation lasts from five to six days, and the average amount of blood is about five ounces. It begins at puberty and occurs periodically at about 28 days interval, until the menopause; it is absent during pregnancy and early lactation.

2. *Hemorrhages occurring in the non-pregnant woman:*

A. In virgins before the age of thirty: Caused by (1) uterine congestion, the result of cold or exposure; (2) endometritis; (3) polypi and fibroid tumors.

B. In married women before the age of thirty: Caused by (1) subinvolution; (2) laceration of the cervix; (3) endometritis; (4) retrodisplacements of the uterus; (5) polypi and fibroid tumors.

C. In women after the age of thirty: Caused by (1) carcinoma of the cervix; (2) carcinoma of the body of the uterus; (3) sarcoma of the uterus.

Lacerations of the cervix should be repaired; and for carcinoma of the cervix, hysterectomy is indicated.

3. *Urethral caruncle* is a small red fleshy growth generally situated on the posterior part of the meatus of the urethra. There are local pain and tenderness, which may be excessive; a burning sensation is experienced on urination; it may bleed. The proper treatment is to excise it or destroy it with the thermocautery.

4. CYSTITIS. *Causes:* Retention of urine, tumors, foreign bodies, calculus, ammoniacal urine, gonorrhea, tuberculosis of genitourinary tract, pus in the urine.

Treatment: Rest in bed; the imbibition of plenty of milk and water, and the avoidance of all highly seasoned food; laxatives; diuretics; sitz-bath; irrigation of the bladder with an antiseptic solution; hot fomentation and vaginal douches are often helpful; sometimes intravesical medication is necessary.

5. Because it may be followed by: Cystitis, urethritis, vulvitis, endometritis, salpingitis, septic peritonitis, sterility, condyloma of vulva, abscess of Bartholin's glands.

6. *Salpingitis* is inflammation of the Fallopian tube. *Causes:* Gonorrhea, septic infection, subinvolution, fibroids, uterine displacements, lacerated cervix, taking cold at menstrual periods, and certain diseases such as the eruptive fevers and syphilis or tuberculosis. *Pathology:* "The inflammation usually extends all along the mucous membrane of the tube to the fimbriæ and ovary. The abdominal opening is closed by adhesions, thus preventing escape of the contents of the tube into the abdominal cavity. Resolution is rare. At first there is a hyperemia of the mucous membrane more or less intense; later, swelling and softening of the tube, the tissues becoming friable; the fimbriæ share in the swelling. The mucous membrane is covered with a glutinous pus. Usually the abdominal opening now closes from adhesion. The uterine opening may remain patulous to permit the escape of the tubal contents. In some cases, however, the swelling of the mucous membrane is sufficient to close this ostium, and thus cause a retention cyst. The uterine end of the cyst may later open from pressure and the contents be discharged through the uterus at intervals. When the cyst contains clear mucus, it is known as *hydrosalpynx;* when blood is retained, *hematosalpynx;* when purulent, *pyosalpynx.* The dilatation usually occurs in the outer two-thirds of the tube."—(From Wells' *Gynecology.*)

7. Fibroids and polypi.

8. An ovarian cyst is generally accompanied by menorrhagia or metrorrhagia, sterility, bearing down pain in the pelvis, which may radiate to the back or thighs, hemorrhoids or constipation, frequent micturition, and various other pressure symptoms of the digestive or respiratory apparatus if the cyst becomes sufficiently large. Later on there may be the *facies ovariana,* general impairment of health, and ascites. There are no pathognomonic symptoms. The diagnosis is made by bimanual palpation and (sometimes) exploratory incision. The condition is to be particularly differentiated from pregnancy and ascites.

The *treatment* is ovariotomy.

9. Hemorrhage, leucorrhea, foul-smelling discharge, and pain.

10. *Abdominal hysterectomy.* "The patient must be carefully prepared as for any other abdominal operation, but in addition the pubes and vulva must be shaved and thoroughly purified; the vagina should be douched for some days previously, and an antiseptic dressing worn, and if need be the uterine canal should be curetted and disinfected with some powerful antiseptic.

"After anesthesia has been induced the Trendelenburg position is adopted, and an incision of suitable length made in the median line. The parts are then carefully explored, and if no adhesions exist an abdominal cloth is packed in over the intestines in order to protect and keep them from exposure and injury. If adhesions to omentum or gut are present they must be carefully divided; it is, of course, most desirable that a complete peritoneal covering should be secured for any adherent organs; omental grafts may be sometimes useful in this direction. The broad ligaments are then examined, and a decision made as to whether or not the ovaries and tubes are to be saved.

"A pedicle needle carrying a sufficient length of well-boiled silk is carried through the round ligament so as to secure the ovarian artery and veins, and tied as far away from the uterus as possible. A broad ligament clamp may then be placed in position close to the uterus, so as to prevent venous regurgitation, and the broad ligament is divided half-way down. It is often possible and desirable to pick up the divided end of the ovarian artery on the face of this section and secure it separately, while the little artery which accompanies the round ligament should also be carefully secured. The ovarian artery on the other side is next dealt with in a similar fashion. A transverse

cut is now made across the front of the uterus, involving merely the serous membrane and connecting the two ends of the incisions in the broad ligaments; the peritoneum below this transverse cut is detached, together with the bladder, from the cervix, and the intraligamentary space is thereby opened up on either side. In this will be found the uterine vessels, and it may be possible to see and isolate the uterine artery before securing it by ligature. Care must be taken in this part of the operation to keep close to the uterus, as the ureter comes forward from behind under the uterine artery to reach the bladder, lying about the level of the os internum. The uterine vessels are in this way carefully secured and divided.

"The uterus is now merely held by the connection between the vagina and cervix and the peritoneal reflection in Douglas's pouch. If a supra-vaginal operation will suffice, the surgeon cuts across the neck of the uterus in such a way as to fashion two flaps, and finally the peritoneum behind is divided. A few small vessels will probably need to be secured on the face of the uterine stump. This having been effected, the uterine flaps are stitched carefully together so as to bury the open cervical canal; the uterine stump is then covered in by uniting the divided portions of peritoneum. This line of sutures is carried up on either side so as to secure the two layers of the broad ligament; the final result is that the pelvic floor is covered in by a continuous layer of peritoneum, showing a sutured incision which runs transversely from one side to the other. The usual peritoneal toilette follows, and the abdomen is generally closed entirely, no drainage being required."—(Rose and Carless' *Surgery.*)

SURGERY.

1. The most important thing is to render the wound aseptic by enlarging it and washing its depths and surroundings thoroughly with 1 in 20 carbolic or 1 in 500 biniodide. An anesthetic is necessary. Loose fragments should be removed, hemorrhage dealt with, and the bones fixed by wires or screws. The wound should be drained by a tube at the most dependent spot, and the rest of the wound closed. The limb should then be fixed on a splint, the foot at right angles to the leg and the heel kept off the splint by pads. The inner border of the patella, the inner malleolus and the inner border of the ball of the big toe should be in a straight line.

2. *Talipes equino-varus* is a deformity in which the heel is drawn up, and the anterior part of the foot is inverted and drawn inwards.

Treatment: "It may be treated in the early stages by fixing the foot in good position by a series of plaster-of-Paris casings, or by using a malleable metal splint. Tenotomy of tendons which hinder reduction in some cases is necessary, with the subsequent application of plasters. If the ligaments on the inner side of the ankle hinder reduction, they should be divided. In the neglected cases, where the patient has been walking on the outer side of the foot, tarsectomy is necessary. A wedge of bone, with its base outwards, is removed by a chisel or saw, irrespective of the joints, from the tarsus in front of the peroneal groove on the cuboid. The foot can then be brought into good position, and maintained so by plaster-of-Paris."—(*Aids to Surgery.*)

3. *Epithelioma of the lower lip* generally begins as a fissure, which becomes indurated, then ulcerates and extends; sometimes it is nodulated or looks like a wart. The submaxillary and submental glands become enlarged and hard. Diagnosis may be made certain by microscopical examination of a small piece removed for the purpose. Treatment consists in thorough removal of a wedge-shaped piece with at least half an inch margin. The glands should also be removed from both sides.

4. The *symptoms of ulcer of the pylorus* are: Localized pain, tenderness, vomiting, hematemesis, hyperacidity, dyspepsia, loss of strength, anemia; pain is severe, and generally comes on about an hour after eating. Examination of the stomach contents usually shows an increase in the hydrochloric acid.

Treatment demands rest in bed, liquid diet or rectal feeding; opium may be necessary; iron and arsenic may help the anemia; perforation demands an abdominal section and rectal feeding. The ulcer may be excised; sometimes a gastro-jejunostomy is done.

5. The breast should be thoroughly and carefully examined. Diagnosis is generally easy in advanced cases; "but in the early stages, when radical treatment is so essential, a cancerous tumor may be confused with inflammatory and other benign swellings. In *chronic inflammatory thickening* the skin may be pitted, and the tumor fixed in the breast, and ill-defined; but the whole gland is often uniformly enlarged, scars of old abscesses may be visible, and the glands are swollen at an earlier stage, and to greater size than in cancerous conditions. *Adenomata* are generally clearly limited and freely movable; there is no dimpling of the skin, and the lymphatic glands are not enlarged. *Tense cysts*, when fluctuation cannot be elicited, are similar in most of their symptoms to adenomata; and differ from 'malignant cysts' by the absence of adhesions or extension of the disease to lymphatics. *Sarcomata* are more rapid in growth and soon involve the skin, and do not affect the glands in the early stages. *Duct cancers* are apt to be multiple, are more circumscribed, and are specially distinguished from scirrhus by the bloody discharge from the nipple; they differ also from simple papilliferous cysts of the ducts by the tumor invading the breast. *Epithelioma* of the areola or nipple differs from eczema in its intractability to soothing treatment; and from scirrhus in its superficial and more localized situation, at all events in the early stages. In cases of *doubtful* diagnosis it is advisable to prepare for a radical extirpation of the disease; but first to incise the tumor and *remove a piece* from the growing edge for immediate examination."—(Buchanan's *Surgery.*)

Benign tumors should be removed; malignant, if operable, require entire removal of the breast and neighboring lymphatics.

6. *Popliteal aneurysm* is generally due to disease of the artery, although repeated slight strains, which are so liable to occur at the knee, may play an important part in determining its formation. The aneurysm is usually sacculated, and may spring from the front or from the back of the vessel. It may exert pressure on the bones and ligaments of the joint, and it has been known to open into the articulation. The pain, stiffness, and effusion into the joint which accompany these changes often lead to an erroneous diagnosis of joint disease. The sac may press upon the popliteal artery or vein, causing congestion and œdema of the leg, and leading to gangrene. Pressure on the popliteal nerves gives rise to severe pain, muscular cramp, and weakness of the leg. The differential diagnosis is to be made from abscess, bursal cyst, enlarged glands and sarcoma. The choice of operation lies between ligation of the femoral artery in Hunter's canal, enucleation of the sac, and Matas' operation of aneurysmo-arteriorraphy."—(Thomson and Miles' *Surgery.*)

7. A *wen* is a sebacious cyst in the scalp. It should be dissected out with the capsule; if possible, the latter should not be broken.

8. A *varicocele* is a varicose condition of the pampiniform plexus. The patient should wear a suspensory bandage, or a portion of the dilated veins may be excised.

9. ENLARGED PROSTATE. *Symptoms:* Slowness in starting urination; difficult micturition; frequency of micturition, particularly at night; the presence of residual urine; dull, aching pain in the perineum and above the pubes; enlargement of the lateral lobes of the prostate; there may be cystitis and retention of urine. The *cause:* It is a senile change, and may be due to increase of the glandular substance or of the interstitial fibrous or muscular tissue. *Palliative treatment* consists in: Mild and unirritating diet, avoidance of alcohol, taking plenty of milk or water, or other diluent. Alkalies and sedatives should be taken, also urotropin or other antiseptic so as to prevent cystitis. Regular catheterization, at least once a day, preferably in the evening, and with due aseptic precautions. *Operative treatment* consists in prostatectomy.

10. *Bassini's operation:* "An incision 2½ inches long is made over the inguinal canal, exposing the structures of the cord and the external oblique. The external oblique fibers are split from the apex of the external ring to expose the canal. The sac is found, opened, emptied of its contents, and isolated from the structures of the cord up to the internal ring. If the hernia is irreducible, the intestine is freed and returned to the abdomen, omentum being ligatured and removed. The neck of the sac is then transfixed and tied with silk, and the fundus removed. The stump returns to the abdomen, three or four stitches are then passed through the conjoined tendon and arched fibers of the internal oblique and transversalis muscles above, and the deep part of Poupart's ligament below. These are tied behind the cord. The external oblique is then sutured in front of the cord, leaving just sufficient opening for it to pass through without pressure. The skin is then closed by a continuous stitch. The patient should be kept in bed for three weeks, and should not exert himself for at least six weeks. If the wound has suppurated, or, if the case is one in which the abdominal muscles are weak, it is advisable that a light truss should be worn afterwards for six months."—(From *Aids to Surgery.*)

HYGIENE.

1. *Domestic water purification* can be accomplished by filtration and boiling. But the filter must be kept clean; and after boiling the water should be put in a perfectly clean container and covered.

2. FOREIGN INGREDIENTS IN WATER. *Organic:* Particles of animal and vegetable matter; bacteria and other living organisms, animal and vegetable; gases; ammonia, nitrites, and nitrates. *Inorganic:* Particles of mineral origin; gases; salts (chlorides, sulphates, carbonates, silicates, nitrates, nitrites, phosphates), lead, iron, soda, magnesia, lime.

3. The milk may come from a diseased cow; it may become contaminated by the milker, the container, the surroundings, the water used to wash the cans or to adulterate the milk; or it may become contaminated at the dealer's or purchaser's house by being left uncovered, exposed to flies, etc., or by not being kept in a cool place. The only way to prevent the transmission of disease by milk is to insist on a thorough inspection of all dairies and sources of milk supply, and to educate the public in the care of milk between the time of its purchase and its consumption. The inspection should include: the color, reaction, specific gravity, sediment, taste, odor, acidity, total quantity of solids and of water; the percentage of cream, fats, lactose, casein, and ash; the presence or absence of preservatives, coloring matter, added solids, dilution, pathogenic microorganism, dirt, or other foreign matter. There should also be thorough investigation as to its source, the cows and their environment, the method employed in caring for, milking, storing, and transporting the milk.

4. *Pasteurization of milk* consists in heating the milk for twenty minutes at a temperature of 140° F.

"*Advantages of pasteurization milk:* (1) That most, if not all, of the common bacteria and their toxins are killed. (2) That the ordinary ferments and germicidal properties of the milk are not destroyed. (3) That the process may be accomplished on a large scale, and furnish a commercially safe milk. (4) That the taste, appearance, odor, and cream separation quality of the milk are not altered. (5) That pasteurized milk, if kept cold, furnishes a clean, healthy milk, safe for infant food and other uses.

"*Disadvantages of the pasteurization of milk:* The following are some of the objections which are urged by the opponents of pasteurization upon a large and commercial basis: (1) That the spore-bearing bacteria and bacterial toxins are not destroyed, and the milk is therefore not wholly safe. (2) That pasteurization stops lactic-acid fermentation, and thus destroys the only 'nature's danger signal,' and the first symptom by which aged milk is known. (3) That unless pasteurized milk is rapidly cooled and kept under 50° F., certain fermentative changes which are ordinarily stopped by lactic-acid fermentation increase in activity, owing to the destruction of lactic-acid bacilli by the pasteurization. (4) That pasteurization, by preserving unclean milk for some time, may induce the producers to furnish dirty milk, discourage rigid cleanliness, and promote carelessness on the part of the producer who relies entirely on the pasteurization to preserve the milk. (5) That the pasteurization furnishes a 'purified' milk instead of a 'pure milk.'"—(Price's *Hygiene and Sanitation.*)

5. *Formaldehyde* is a good surface disinfectant, has poor penetrating qualities, does not destroy fabrics and injure objects, and is non-toxic. *Sulphur dioxide* damages textile fabrics, tarnishes metal objects, and is very poisonous.

To disinfect a room by formaldehyde: (1) By Trillat's apparatus, which "allows the solution of formalin to flow in a fine stream through a copper coil heated to redness by a flame beneath, and the gas and vapor passing directly into the room. The apparatus may be operated outside of a room, and the amount of gas liberated depends directly upon the strength and quantity of the solution evaporated. (2) In Schering's method the solid paraform is heated in a receptacle over an alcohol lamp, and is especially valuable in disinfecting small rooms, closets, etc. (3) The cheapest and most common form develops the gas directly by the oxidation of methyl alcohol, the vapors of the latter passing over and through tubes or coils of heated metal. The amount is uncertain and results indefinite."—(Gould and Pyle's *Cyclopedia of Medicine and Surgery.*)

To *fumigate by sulphur dioxide:* For each 1,000 cubic feet of space, three pounds of sulphur are burned, care being taken to prevent accidents. In all cases all apertures and crevices of the room should be closed, all closets, drawers, or other receptacles opened; and after the fumigation the room should be well ventilated and thoroughly cleansed with a solution of corrosive sublimate.

6. *Sources of impurities in air:* Expiration of human beings and animals, combustion, manufacturing processes, dust, walls of rooms and houses, excreta from human beings and animals, decomposition products. The chief danger to health consists in the increase of carbon dioxide, the presence of crowd-poison, dust, irrespirable gases, and various bacteria.

7. The sources of contagion in typhoid fever are food, milk, water, fingers, and flies, or anything that has been in contact with the excreta of a typhoid patient. Typhoid fever is preventable. When the municipal authorities do not consider it their duty to supply pure water, each household should boil all water that is to be used for drinking or for washing dishes, etc.; milk should be boiled also; and no ice should be put *in* water or other drink or food; flies should be kept out of the house as far as possible by means of screens or otherwise; all discharges from the sick person must be disinfected; all utensils, dishes, etc., used by the patient must be thoroughly cleansed and boiled every day; soiled linen must be soaked in a disinfectant solution before being washed; after each attendance on a patient, physicians, nurses, and others should wash their hands in a disinfectant; thorough sterilization of all bedding, etc., must be performed after the disease is over.

8. *Immunity* is the power of resistance of cells and tissues to the action of pathogenic microorganisms. Immunity may be either natural or acquired.

Natural immunity is that power of resistance, natural and inherited, and peculiar to certain groups of animals, but common to every individual of these groups.

Acquired immunity is this resistance acquired (1) by a previous attack of the disease, or (2) by the person being made artificially insusceptible. The conditions which give immunity are: (1) a previous attack of the disease; (2) inoculation with the specific microorganisms in small numbers or of diminished virulence, so as to produce a mild attack of the disease; (3) vaccination; (4) the introduction of antitoxins; (5) the introduction of the toxins of the bacteria.

Examples: The rat is *naturally immune* to anthrax; the white mouse is *naturally immune* to infection with bacillus mallei. *Acquired immunity* is seen in the immunity from smallpox after vaccination, or after having suffered from an attack of the disease.

9. By the tuberculin test.

10. *Diseases prevalent in school children. Skin:* Pediculosis, scabies, ringworm. *Respiratory:* Bronchitis and bronchopneumonia. *Spine:* Scoliosis, kyphosis, and lordosis. *Digestive:* Constipation, gastritis, anorexia, diarrhea. *Throat:* Adenoids, tonsillitis, hypertrophied tonsils. *Eye-strain* is shown by pain in the eye when used for reading or near work, the type seems blurred, and the letters run together; the eyelids twitch; the eyes smart and "run water," and may appear red and congested; headache, and the reflex symptoms are present. The eyes should be examined and proper glasses provided. *Adenoids* are detected by feeling them in the nasopharynx. *Trachoma* is detected by inspecting the inner conjunctival surface of the eyelids and finding the same rough and granular. *Infectious catarrhal conjunctivitis* is diagnosed by finding with the microscope the Koch-Weeks bacillus in the yellowish discharge.

Books Received.

The MEDICAL RECORD *is pleased to receive all new publications which may be sent to it, and an acknowledgment will promptly be made of their receipt under this heading, but it must be with the distinct understanding that it is under no obligation to notice or review any publication received by it which in the judgment of its editor will not be of interest to its readers.*

SURGICAL CLINICS OF JOHN B. MURPHY, M.D. Vol. I. No. 4 (August, 1912). 154 pages; illustrated; paper; price $8.00 per year. W. B. Saunders Company, Publishers, Philadelphia and London.

PHARMACOLOGY. By MAURICE VEJUX TYRODE, M.D. Second Edition. 228 pages; cloth. P. Blakiston's Son & Co., Publishers, Philadelphia.

PRACTICAL THERAPEUTICS. By HOBART AMORY HARE, M.D., B.Sc. Fourteenth Edition. 984 pages; illustrated with 131 engravings and 8 plates; cloth; price $4.00. Lea & Febiger, Publishers, Philadelphia and New York.

MATERIA MEDICA AND THERAPEUTICS. By REYNOLD WEBB WILCOX, M.A., M.D., LL.D. Eighth Edition. 832 pages; cloth; price $3.00 net. P. Blakiston's Son & Co., Publishers, Philadelphia.

MICROBES AND TOXINS. By Dr. ETIENNE BURNET. 316 pages; illustrated; cloth; price $2.00. G. P. Putnam's Sons, Publishers, New York and London.

Miscellany.

Problems of Sex and of Marriage.—Probably no other book has ever been written which has attacked these problems with such profundity of knowledge and with such a pleasing combination of candor and delicacy as has the widely read and discussed volume on "Love and Marriage," by Ellen Key. Without endorsing all of this writer's ideas on questions that lie at the foundation of modern civilization, the physician will find that many of her conceptions coincide with his own judgment as to certain phases of life with which he is brought intimately in contact. In these days when it has become a fashion to advocate the teaching of sex-hygiene to the young, it is refreshing to note that there is at least one who would seek to curb the sex impulse not by pointing out the pathological dangers of indulgence, nor by a strict appeal to moral precepts, but by showing that "no obstructing of appetites, and only their release in other directions can really purify them." In addition to the powerful influences of heredity and social custom, there are other important factors that tend to control the sexual instinct. All of these expedients are enumerated as follows: "Before all, that of acquiring the instinct of chastity from parents; of being strengthened and protected from childhood against the dangers of callousness as well as those of softness; of being instructed in a refined and gentle way of the great purpose and great dangers of sexual destiny; of receiving impressions through public opinion of the possibility of self-control and its importance to the happiness of the individual himself and of the race; of avoiding the abuse of means of enjoyment, especially of intoxicating liquors, which both directly and indirectly weaken the will-power in the case of sexual, as of all other kinds of temptation. It is beyond question that noble sport, dancing and games—and they are only noble when practised finely and worthily, with the mind as well as the body—are a means of replacing and controlling the sexual instinct. Equally certain is it that bodily and mental labor, whether undertaken independently or as a participation in some form of social endeavor, is important as occupying and consuming the sexual powers in a substituted form. All genuine artistic enjoyment is in the highest degree important for the ennobling of sexual life."

Those who are enlisted in the cause of eugenics will find inspiration in the words: "Religion, poetry, art, and social custom have collaborated to elevate the racial feeling into love. They ought now to collaborate again to make the racial feeling conscious in love. The altars that the ancients built to the divinities of procreation must be rebuilt. Not for men and women to assemble around them in frenzied orgies, in the red glow of sunset, but in the golden light of the morning and the joy of creative day. Family feeling, ancestor-worship, pride of pure blood will regain, in a new sense, their decisive power over emotions and actions."

The Enema in the Eighteenth Century.—In France during the seventeenth and eighteenth centuries the enema syringe was the symbol of medicine. The august body of Louis XIV was washed out by means of it some thousands of times, and it is recorded of a royal duchess that she had the *remède*, as it was politely called, furtively administered to her even in the presence of the Court. It was used by everybody who could afford it, and it was a considerable source of income to the apothecaries. Naturally it did not escape the keen eye of Molière, who introduces it several times. He represents M. de Pourceaugnac being pursued with the instrument by a number of apothecaries, assuring him that it is benign, and in the ballet which concludes the *Malade Imaginaire* the apothecaries carrying the emblem play a conspicuous part. There is a curious record of an action brought in 1746 against a canon of Troyes, François Bourjeois, by what may be called a nurse specialist in the administration of enemas. This lady, who had the very appropriate name of Etiennette Boyeau, brought an action for recovery of moneys due to her for the innumerable enemas she had given the patient. As he would not pay, she put her case into the hands of an advocate named Grosley. His pleading, which is given in French memoirs in all seriousness but which reads like an elaborate jest, set forth that the canon had for some time been "vexed by a heated state of the viscera of that enormous acrimony which causes the generative parts to be extravasated." (Doubtless the writer meant piles.) Having consulted his physician, the canon was ordered the frequent use of "a kind of lenitive commonly known under the name of clyster." Etiennette Boyeau, who was in high repute for her skill in the administration of that remedy, was called in, and she attended on the canon two whole years, officiating at least once, sometimes as often as six times, a day. But, though she served him well and her fee was small, she could get no money out of the canon. "Three hundred times, at the most interesting moments and in the most supplicating position, she begged him to relieve her needs, without his allowing himself to be softened." At length, in 1746, she brought an action against him. In the pleading it is stated that "the Sieur Bourjeois took at least one enema a day and often six, thus taking on an evarage three enemas a day, giving a total of 2,190 enemas, which at 2 sols 6 deniers make up the big figure of 273 livres 15 sols. Etiennette consents to reduce the total number of enemas to 2,000, and to reduce her bill to 150 livres instead of 273 livres 15 sols." The canon resisted, but at last, fearing the publicity of a law court, he paid up.—*British Medical Journal*, September 28, 1912.

Seems Unlikely Just Now.—In spite of the present drift of the current against the horse we are inclined to believe that the optimistic writers are correct, and that in due time the horse will come trotting triumphantly down the magnificent turnpike of the future, more beautiful, more highly prized than ever, and that he will take his important place in the life of the world to minister to man's pride and pleasure in the utilities and ceremonials of the day.—*Motor Car.*

Why Tires Do Best on Stale Air.—The less oxygen a tire gets inside it the better, according to the Michelin tire expert. The reason is that rubber, while it is practically airtight, is not perfectly so, the air gradually filtering through. Of the two principal gases which compose the air—oxygen and nitrogen—oxygen diffuses through the rubber the faster, so that as time goes on the percentage of oxygen may fall quite low. This explains why a new tire has to be inflated several times before it holds air without any noticeable loss. As long as the original air remains in the tire each inflation increases the proportion of nitrogen and thus the loss by diffusion becomes smaller. This diffusion is responsible, no doubt, for the large proportion of cars which run on underinflated tires. Of the cars which stop at the Michelin factory fully 50 per cent. run on underinflated tires. A tire may seem hard and tight, but diffusion may lower the air pressure by as much as ten pounds. The only way to be sure of obtaining the proper pressure is to use a tester, and use it not only when inflating, but periodically—say, once a week.—*Automobile Topics.*

Medical Record

A Weekly Journal of Medicine and Surgery

Vol. 82, No. 17.
Whole No. 2190.

NEW YORK, OCTOBER 26, 1912.

$5.00 Per Annum.
Single Copies, 15c.

Original Articles.

SOME STUDIES IN FAMILY HISTORY.*

By BRANDRETH SYMONDS, A.M., M.D.,

NEW YORK.

CHIEF MEDICAL DIRECTOR, THE MUTUAL LIFE INSURANCE COMPANY OF NEW YORK.

IN reviewing the medical aspects of life insurance during the past year, the most important circumstance is that the Medico-Actuarial Mortality Investigation is beginning to bear fruit. The first fasciculus which has been sent to all of the companies contains the new mortality table and new average tables of weights for men and women. This average table of weights for men does not differ appreciably from the one prepared in 1897 for this Association by Dr. Geo. R. Shepherd,[1] except in the ages below 25. In these younger ages Dr. Shepherd did not have sufficient material, and he lumped them all together into one age-group, 15 to 24. The result was that in the ages below 20, his weights were entirely too high. Also he was lacking in data in the extremes of height. Taking it altogether, however, the new average table for men has added but little to our previous knowledge.

The new average table for women differs slightly from the ones prepared by Dr. F. S. Weisse[2] and Dr. O. H. Rogers.[3] Their tables show differences from the new table of two pounds, or less, usually; in many cases they coincide. It can be seen that there is no substantial difference between the average tables which we already had, and this contribution from the Medico-Actuarial Investigation. We must remember that these tables represent the average weights of selected insurance risks in this country and Canada, clad and shod at the time of the examination.

For many years I have felt that the average weight in the younger and in the older ages does not coincide with the weight showing the lowest mortality at those ages. In 1908,[4] I stated that weights a little above the average gave the lowest mortality in the younger ages, and weights a little below the average gave the lowest mortality in the older ages. You will remember that Dr. Rogers demonstrated this most beautifully two years later to the Association by a model showing the range of mortality as affected by physique, according to the experience of The New York Life.

In view of the fact that the Medico-Actuarial Investigation will soon publish the results of the mortalities of some 900 classes of weights, should we not take advantage of this to determine a table of weights graded according to the best mortality? Ought not the association take official notice of this fact and stamp such a table with its approval by referring the matter to a committee who will prepare it? By so doing, the life insurance companies will then have a table of heights and weights which will be a standard guide on the determination of the proper physique. I am confident that such a table can be prepared and I recommend that a committee be appointed for that purpose.

The new mortality table adopted for the Medico-Actuarial Investigation is substantially different from any mortality table heretofore published, especially in the ages below 50. In these ages, the mortality rate is generally lower than in other tables, whether select or ultimate. Furthermore, the ultimate rate is reached in the fifth year of insurance, which is earlier than usual. Both of these conditions seem to be due to two factors:

1. The decided improvement in the general mortality of the country, especially in the younger ages, owing to a marked decrease in the infectious diseases, both acute and chronic.

2. A considerable improvement in the methods of selection in our life insurance companies, whereby the sub-standard cases are properly classified. Doubtless, this last factor is very important in making the ultimate rate so early. It is also a factor in reducing the general rate of mortality, but here a more important item is the improved sanitary condition of the country.

In the ages above 50, the mortality has not improved appreciably in later years; in fact, the issues of 1901-1908 show a mortality of 93 per cent. in the ages over 60 as compared with a mortality of 91 per cent. in the same ages for the issues of 1885-1892. This deterioration has occurred in spite of greater care and skill in examining. In the earlier period, many companies did not require a chemical examination of the urine in all cases, a microscopical examination was rarely made, the blood-pressure was never taken, and the diagnostic training of the medical examiner was inferior as compared with the later period.

This fact was well set forth in a paper[5] read at the twenty-first annual meeting of this association by Mr. James D. Craig, Assistant Actuary of The Metroplitan Life. A careful study of his paper shows that the mortality has been substantially lowered among insured lives in the years before fifty, but raised in the years subsequent to fifty.

TABLE A

Mortality of Males in England and Wales per 1,000 in Successive Decennia

Ages	1841–1850	1851–1860	1861–1870	1871–1880	1881–1890	1891–1900
All Ages	22.37	22.04	22.48	21.64	19.79	19.32
0–	71.20	72.43	73.47	68.42	61.61	62.71
5–	9.16	8.51	8.19	6.71	5.35	4.31
10–	5.12	4.88	4.48	3.71	2.95	2.45
15–	7.05	6.69	6.19	5.25	4.32	3.79
20–	9.50	8.83	8.48	7.36	5.73	5.06
25–	9.94	9.57	9.94	9.34	7.77	6.76
35–	12.85	12.48	13.48	13.80	12.40	11.50
45–	18.22	17.96	19.26	20.07	19.37	18.95
55–	31.81	30.85	33.14	34.88	34.71	34.95
65–	67.51	65.33	67.12	69.72	70.46	70.39
75 and upwards	168.56	165.40	165.46	169.30	162.67	160.09

*The address of the President at the twenty-third annual meeting of the Association of Life Insurance Medical Directors of America, Oct. 9, 1912.

This phenomenon is present in other countries as well. The following table A shows how it has affected the male population of England and Wales:

You will notice that the mortality among males has improved in all ages below 45 and almost uniformly. Beginning with age 45, however, it has deteriorated in all later age-groups except the last. In each of the age-groups 55- and 65- the mortality in the decade 1891-1900 was 3 per 1000 larger than in 1841-1850, fifty years earlier. The difference is even more marked if we compare 1891-1900 with the decade 1851-1860, for here the mortality in the age-group 55- is 4 less per 1000 and in the age-group 65- it is 5 less per 1000 than in 1891-1900. After age 75, the mortality has improved, but this has no great interest for us insurance men.

It seems then to be established that there has been an increase in deaths sufficiently large to cause an increased mortality after fifty years of age. This increase is due to degenerative diseases and has occurred in spite of all our improvements and our better knowledge of disease. Even though our knowledge of zymotic diseases and our skill in preventing and overcoming them has increased more rapidly than our means of combating the degenerative diseases, we ought to have as great success in treating the latter as our fathers did. Some explanation then must be found to account for the increased mortality after fifty years of age due to these diseases.

1. Syphilis may be a little more frequent than formerly, though I doubt it. It is treated with much more thoroughness and certainty and in any case is a very small factor.

2. The annual consumption per capita of distilled liquors in this country is just one-half the amount fifty years ago.[7] The annual consumption per capita of malt liquors, however, has increased from 5 gallons to 20 gallons. According to Mr. Emory McClintock,[8] beer is more harmful than whiskey when measured by its alcoholic content. Alcohol figures largely in the causation of many degenerative diseases and the increased consumption of malt liquors may be a factor in the increased mortality from these diseases.

3. Tobacco, tea, and coffee are used more freely than formerly,[7] but their relation to disease has not been established. It may be that deaths from heart disease are hastened by their use, thereby indirectly increasing the mortality from this. Tobacco is accused also of causing arteriosclerosis, though this theory is not yet accepted by the medical profession. In any case, they must be regarded as small factors in the causation of these diseases, and altogether they seem insufficient to account for more than a small part of the increased mortality.

4. A great deal has been said about the nervous strain of our modern complex life. Undoubtedly, insanity has increased, though part of the increase is due to its prompter recognition and the nearly universal treatment in institutions, by whom all the cases are accurately reported. It is not a frequent cause of death, however. In 1910 in the registration area of the United States, including more than one-half of the population of the continental United States, there were recorded 588,093 deaths among those of five years and upwards, of which 4605 were due to all varieties of mental alienation. This is less than 0.8 per cent. of all deaths of five years and over, and insanity, therefore, is not an appreciable factor in increasing the death rate after 50.

When we come to study the deaths from other nervous diseases, we find some very instructive facts. If there is any truth in the theory that the hurly-burly and worrying pressure of our modern business life lowers vitality and increases mortality, it should be capable of demonstration in the deaths due to diseases of the nervous system. That system would naturally be the first one to break down under such a strain. If there be any such strain it should show itself in the cities much more than in the rural districts, for life is undoubtedly more placid and less exciting in the country. Now, the registration-states in 1910 contained 47,610,525 population, of which 25,047,702 (53 per cent.) lived in cities of 10,000 and upwards, and 22,562,823 (47 per cent.) in rural districts.

The following table shows the actual number of deaths and the rate of mortality per 100,000 of population in each of these areas for several of the degenerative diseases:[8]

TABLE B

Mortality in Cities and Rural Parts of the Registration-States from Different Diseases

	Cancer	Diabetes	Organic Disease of the Heart	Nephritis, Bright's Disease	Cerebral Hemorrhage and Softening
Cities.....	20,505	4,232	36,618	28,031	18,537
	81.4	16.8	145.4	111.3	73.6
Rural Parts ...	15,859	3,050	31,162	17,319	18,672
	70.1	13.5	137.8	76.6	82.5

This table shows that the cities gave a higher mortality rate than the country in the case of cancer, diabetes, organic diseases of the heart and Bright's disease. When it comes to cerebral hemorrhage and softening, however, the mortality rate in the cities is distinctly lower than in the country. In truth, this theory that nervous strain causes an appreciable increase in mortality has no real standing. It should be cast out into the lumber-yard of discarded and rejected ideas. Probably, the former times have seemed to man at all epochs to be "the good old days." Doubtless when our forefathers began to live in caves and lost their tails through disuse and atrophy, they looked back with regret at "the good old days" when their fathers built nests in the trees. They told each other that the nervous strain of dodging saber-toothed tigers and cave-bears was too much, and that they must go back to the simple life of the tree-tops.

5. The great increase in our city population, both actual and relative, has materially changed our habits with regard to muscular exercise. The multiplication of athletic clubs of all sorts and the increase of athletic games and competitions do not affect the great mass of city people, for only a very small percentage are anything but spectators. In city life very little exercise is taken by the average man, except among the manual workers who are not apt to seek ordinary insurance, and the facilities of transportation are so great that walking is cheerfully avoided by everybody who has five cents. These conditions are almost reversed in country life. In the matter of physical exercise then we can say that there has been a great change among the people of this country in the past fifty years. Furthermore, this condition seems liable to increase rather than diminish. Lack of exercise may be a factor of some value in the causation of degenerative diseases which are usually found in those above fifty.

6. It has been said that these degenerative diseases are largely due to overeating and that this has increased in the past fifty years. There is much truth

in the statement that overeating is an important factor in the causation of arteriosclerosis, Bright's disease, apoplexy, heart disease and other degenerative diseases. A study of the causes of death among overweights[4] shows this conclusively. There is grave doubt, however, whether overeating has increased during the past fifty years. If we compare the menus of the public dinners prior to the Civil War with those of the present day, the latter are much shorter and simpler than the former. In private life too our grandfathers were lustier trenchermen than their degenerate grandsons, if we can believe what they have told us. The truth seems to be that we now eat as much as we can stow away, and so did they, and perhaps their capacity was a little greater than ours.

7. A factor of great importance in causing the increased mortality after fifty is the unquestioned decrease of mortality in the earlier ages. Up to about one hundred years ago the infectious diseases, both acute and chronic, acted as filters for the elimination of human weaklings in infancy, childhood, and young adult life. Undoubtedly they also killed a good many robust specimens in the process, but the survivors were left without harmful sequel and with comparative immunity from subsequent trouble. For more than a century, in fact since Jenner demonstrated the value of vaccination, the human race has been changing this natural method of self-improvement. In the past thirty years since Koch discovered the tubercle bacillus, we have rid ourselves largely of nature's racial filters. A great many now reach adult life who would formerly have been killed before that time. Many of these have no capacity for living a long life. Perhaps if the same minute care were taken of them throughout their life as in their childhood and youth, they might survive to a decent old age. The lusts of the world, the flesh, and the devil, the need of self-support, the providing for a family, and the competition with robust vitality prevent any such care. They die before attaining old age of some disease which would not have proved fatal in a more resistant individual.

No statistical proof can be given of this theory, and it can only stand by the exclusion of other possible causes. We cannot demonstrate that a man dying in the forties or fifties would have died in childhood or youth from some zymotic disease if he had happened to catch it then. But the combination of this with the increased consumption of malt liquors, tobacco, tea and coffee, and the increasing lack of exercise seems to be sufficient to produce the increase in the death-rate after fifty years of age. Furthermore, the theory explains the acknowledged facts without any strain, and will bear close criticism.

For us Medical Directors whose business it is to secure a favorable mortality for our companies at all ages of life, the next step is to ascertain how we can pick out these individuals in apparent health, but without capacity for long life. This part of the problem will be difficult, for no reliable tests are now apparent. The Medico-Actuarial Mortality Investigation will doubtless show come conclusions of value from a study of the medical impairments.

Perhaps, for instance, it may show that neurasthenia is the expression of an organic weakness tending to shorten life, though not amounting to a disease. We have been taught that neurasthenics live forever, but the eternity may be due merely to their everlasting nagging and fretting and their insistent selfishness which demands constant care and attention from others. Against this idea is the fact that the Jews are both neurasthenic and long-lived.

The Specialized Mortality Investigation showed that functional cardiac conditions, such as an intermittent, irregular or frequent pulse, were much more serious after forty years of age than before. Perhaps the Medico-Actuarial Investigation with its lower death-rates in the younger ages will show that these conditions must not be disregarded in the young.

Perhaps we will learn more exact rules regarding the significance of arterial hypertension and hypotension at different ages.

Some two years ago, *consule Willardo*, while thinking over this question of the increased death-rates in ages over 50, it occurred to me that it might be possible to determine whether different grades of parental longevity appreciably influenced the vitality of the offspring. We were just beginning to write the cards for the Medico-Actuarial Investigation and the opportunity was at hand. The greatest difficulty lay in defining a long-lived family history, and I finally had to break this up into three groups, with a definition for each group. Definitions for an average family history and a short-lived family history gave no difficulties. Following are the definitions of these various groups which will hereafter in this paper be called symbols:

Symbol A—Both parents reached 70.
" B—One parent and two grandparents reached 70—other parent living.
" C—Both parents living below 70, and three grandparents reached 70.
" D—All cases between the above and E are to be classed as D.
" E—Both parents dead below 60.

As you will see, these symbols are arranged in the order of definite longevity of the parents, for I am sceptical regarding the ages of grandparents as furnished by applicants for life insurance. However, in Symbols B and C we had to refer back to grandparental ages, and this naturally raises a question as to the validity of these symbols. One circumstance tends to show that the information contained in Symbols B and C is reasonably reliable. For the nine years during which the family symbols were noted, the entire number of applications to the Company, which were studied for the investigation, amounted to 320,000. Of these only 167,564 (52 per cent.) could be classified under the various symbols. In some cases the ages of the parents did not permit the risks to be classified. In many cases, however, the applications studied in this investigation failed to give the history of the grandparents in sufficient detail to enable us to classify them under the proper symbol. Such indefinite terms as "old," "very old," "about 70," etc., were carefully excluded and only positive statements as to age were accepted.

With regard to Symbol D, the lower limit is not easy to define but usually one parent must have reached 60. The upper boundaries varied a good deal. It might be that one parent had attained 70 and the other parent was living below 70, but only one grandparent instead of two had reached 70. The case would then be classified in D and not in B. Similarly both parents might be living below 70, but less than three grandparents had attained 70. The case would then be classified in D and not in C. Both of the cases just cited might have the potentiality of long life, but this fact could not be decided until some years later. Symbol D therefore may

contain some cases which in time would show a long-lived family history and the fact must be remembered when we come to study the mortality of the various symbols. Outside of these cases, Symbol D contains those applicants, both of whose parents if dead had attained 60, but neither of whose parents had passed 70.

The definitions of Symbols A and E are so exact that no further explanation of their composition is needed.

The nine years of the companys business, 1891-1899, constituted the period during which we noted these facts regarding parental longevity. This period covers the middle point of the Medico-Actuarial Investigation, though lying mostly anterior to that point both as regards years of issue and volume of business. During the entire period, medical selection by the Company was homogeneous and the conditions of the policies issued did not vary greatly. The great majority of applications were for limited payment life policies and practically no term insurance was written. In order to secure complete homogeneity in this study, the following measures were taken.

In the first place, all cases showing any medical impairments were discarded. Likewise all questionable or hazardous occupations, including the entire 68 kinds called for by the Medico-Actuarial Investigation were discarded. These two amounted to 47,938. Then those cases belonging in the overweight build-groups 3, 4 and 5, amounting to 2,672, were discarded. Then those cases belonging to the light-weight build-groups 8 and 9, amounting to 364, were discarded. As a result of these measures, the original number of entrants, 167,564, was reduced to 116,590. This mass seemed to be quite homogeneous in most respects, for it consisted of white men residing in the United States and Canada, without any medical impairments in their personal or family history, following favorable occupations, and whose weight came within the limits set forth in the following table:

TABLE C

Height		Weight	Height		Weight
4 feet	9 in. between	94 and 157	5 feet	7 in. between	114 and 190
4 "	10 in "	95 and 158	5 "	8 in. "	117 and 196
4 "	11 in. "	96 and 160	5 "	9 in. "	121 and 202
5 "	0 in. "	97 and 162	5 "	10 in "	125 and 209
5 "	1 in. "	99 and 165	5 "	11 in. "	130 and 216
5 "	2 in. "	101 and 168	6 "	0 in "	134 and 224
5 "	3 in. "	103 and 171	6 "	1 in "	139 and 232
5 "	4 in "	105 and 175	6 "	2 in. "	144 and 240
5 "	5 in. "	107 and 179	6 "	3 in. "	150 and 250
5 "	6 in. "	110 and 184	6 "	4 in "	155 and 259
			6 "	5 in. "	162 and 269

This mass of material was then divided into five classes, indicated by the Symbols A, B, C, D and E, according to the definition above. The expected mortality was calculated by the Medico-Actuarial Select Mortality Table, the period of observation ending with the anniversary of the policy in 1909. It must be understood that we as well as the Medico-Actuarial Mortality Investigation are working on applications, strictly speaking, and not on lives or policies in the narrower definitions of these terms. In this we follow the lines laid down for the Specialized Mortality Investigation. Even in a single company there are often several applications on one life, but for the purpose of mortality statistics, this factor can be disregarded. Tables 1, 2, 3, 4 and 5 show the results in all five symbols.

A study of these tables shows:

1. The percentage mortality of the Symbols A, B and C, which are the ones possessing a long-lived family history, is distinctly good, being 87 per cent. in A, 86 per cent. in B, and 86.5 per cent. in C.

The marked agreement of these three symbols in percentage mortality confirms the opinion that all three are composed of men who have a long-lived family history. It also demonstrates that the grandparental history was accurately given by the men composing B and C.

2. Symbol D is inferior, the percentage mortality being 92 per cent. This symbol is composed of those with an average family history, neither long-lived nor short-lived, and naturally contains the largest number of entrants. As explained before, this symbol contains also a certain number who have the possibility of a long-lived family history, though that fact could not be demonstrated at the time of the examination. This factor probably tends to lower the mrtality a little. While the mortality is higher than in A, B and C, it is still good, being substantially below 100 per cent.

3. Symbol E shows a percentage mortality of 110 per cent. This symbol is composed of those with a short-lived family history, both parents having died before 60.

The difference between a long-lived and a short-lived family history is only 10 years in both parents, they being above 70 or below 60, but the latter gives a mortality 23 points larger than the former. It is nearly one-quarter better to be born in a long-lived family.

All of the above results have been obtained from homogeneous material, differing only in the matter of family longevity. You will recall that in order to secure this homogeneity, I had to eliminate a number of discordant elements. The first discards consisted of those cases which showed a medical impairment in the personal history or in the physical condition, or which belonged in one of the 68 questionable occupations called for by the Medico-Actuarial Mortality Investigation. Then the overweights, whose weight was above the scale already given, and the underweights, who were below the scale, were eliminated. The percentage mortality in these three sets of discards is set forth in the following table. In order to make comparisons, I have also inserted the percentage mortality of the original material before anything was eliminated. This amounted to 167,564 entrants, showing a total percentage mortality of 98.9 per cent.

TABLE D

ISSUE OF 1891 TO 1899—EXPOSURE OF 1891 TO 1909
Ratio of Actual to Expected Deaths

Symbols	Original Entrants	First Discards	Over-weights	Under-weights
A	94.6	102.6	143.6	111.2
B	97.1	120.6	169.7	.....
C	88.7	94.1	105.3	111.0
D	98.8	114.0	116.9	116.0
E	123.0	139.7	155.7	666.0
Total	98.9	112.8	130.8	123.5

A study of the above table shows that:

1. The original material was quite well selected. Not enough importance, however, was given to a short-lived family history as an impairment, as evidenced by a mortality of 123 per cent. in E.

2. The first discards show that a long-lived family history is able to carry considerable impairments or questionable occupations without harm, except in symbol B. The mortality of 121 per cent. here shows either that too big a burden was attempted on

the strength of the family history, or that the history of grandparental longevity was not reliable. An applicant is easily tempted to bolster up a weak point in his personal record by an appeal to his ancestors. The mortality in Symbol D shows that even an average family history will bear some impairment. A shortlived family history, however, will not stand any as shown by a mortality of 140 per cent. in E. It is a substantial impairment in itself.

3. The overweights were not numerous, amounting in all to 2,672, only about 1.6 per cent. of the original entrants. Nearly one-half occurred in the long-lived family history group, and the burden was rather too heavy, as shown by a mortality of 141 per cent. for the three symbols A, B, and C. A short lived family history can evidently bear very little in the line of overweight, for the mortality there was 156 per cent. Although the fact does not appear in this table, it is important to know that the mortality among the overweights was much higher in all five symbols from the age of 40 upward than it was in the earlier ages.

4. The underweight mortality is not very bad, but the deaths are too few in all symbols for any definite deductions.

In making this study, no attention was paid to the causes of death among parents or grandparents, for I am frankly skeptical as to the value of this information as found in the examinations of applicants for life insurance. We only excluded those who showed among parents, brothers, or sisters, one or more cases of tuberculosis, or two or more cases of apoplexy and paralysis, or of diabetes, or of cancer, or of insanity, or of epilepsy, or of heart disease. Remembering this limitation of our material, it is of interest to note the causes of death among the offspring of these various grades of family history, or in other words, among the policyholders whom we have been studying.

Before entering upon this analysis, it must be premised that the mode of exit among human beings is considerably influenced by the age at exit, or to put it in other words, that the cause of death depends to a marked degree on the age at death. We expect to find among those dying under 30 a very large percentage of the causes of death to fall under the two heads, acute general diseases "A" and tuberculosis. In fact, under 30 these two in my company amounted to 55 per cent. Conversely, the degenerative diseases are very scarce under 30. After 30 they become gradually more numerous, though still comparatively few until about age 50. During this time the acute general diseases "A" and tuberculosis become less common and after 50 are distinctly rare. There are numerous other factors which help in determining the mode of exit, such as overweight which predisposes to degenerative diseases, and underweight which predisposes to tuberculosis and pneumonia, but we must never forget that the age at exit has a greater influence than any other single factor.

Table 6 shows the causes of death in each of the symbols.

A study of this table shows us that:

1. In Symbol A we find that acute general diseases and tuberculosis account for 13.3 per cent. This low rate is largely due to the fact that only 4.5 per cent. of the entrants were below age 30.

2. In Symbol B 31.1 per cent. and in Symbol C 36.5 per cent. of the deaths were from tuberculosis and acute general diseases, although the percentage mortality of each of these symbols was a shade better than in Symbol A. The much greater frequency of these diseases in B and C arises from the fact that 32 per cent. of the entrants in B were under 30 and 70 per cent. in C.

3. In Symbol D 27.6 per cent. of the deaths were from these two sets of causes and the entrants under 30 amounted to 47 per cent.

4. In Symbol E although the entrants under 30 amounted to 31 per cent only 22.5 per cent. of the deaths were from these two sets of causes. This was unexpected, for on account of the higher mortality in this symbol the deaths occurred earlier than in A. If the percentage of entrants under 30 had been the same in E as in A, the total deaths from these two causes would have amounted only to 3.4 per cent. in E. The actual number of those who died before reaching age 30 was too small in both A and E to admit of more elaborate analysis.

When the degenerative diseases were analyzed, it was found that the deaths from each were too few to make any positive deductions. We therefore added together the deaths from these diseases, which are usually regarded as typical degenerative diseases —cancer, diabetes, cerebral apoplexy and paralysis and softening, organic disease of the heart, anginapectoris, arteriosclerosis, nephritis, and Bright's disease. This table shows the results of each symbol, divided into those who died before 50 and those who died at 50 and over. The percentage is in terms of the deaths from all causes incurred in each symbol in the corresponding age-period.

TABLE E

Deaths from Degenerative Diseases

	Under 50		50 and Over	
	Number	per cent.	Number	per cent.
Symbol A	99	27.1	397	52.8
" B	55	20.6	25	50.
" C	104	14.9	19	59.5
" D	353	17.6	409	50.3
" E	76	22.	116	51.7
Total	687	18.6	966	51.6

1. Under 50, 27 per cent. of the deaths in A were from degenerative diseases, and in B 21 per cent. In C the percentage was only 15 and in D 17.6 per cent., but in E it jumps up to 22 per cent. In A both of the parents had attained 70 and in B one parent and two grandparents had reached 70, the other parent being alive below 70. In E, on the other hand, both parents had died below 60. Now the reason for the high proportion of degenerative diseases in A under 50 is the low percentage of tuberculosis and acute general diseases. Those who died under 50 had to die of something, and as the exit by way of tuberculosis and acute general diseases was closed, more than one-quarter of them took exit by way of the degenerative diseases. Practically the same conditions prevailed in E. It is fair to assume for A that nearly all the parents died of degenerative disease and had shown decided resistance to tuberculosis during their lifetime. These qualities seem to have been transmitted to their descendants whom we are studying. I have no data upon which to draw any definite conclusions regarding E, but it is tempting to assume that the marriage of two short-lived people produces offspring who have no resistance to degenerative disease and whose cause of death may be considered evidence of precocious senility.

The Medico-Actuarial Mortality Investigation called for certain family history records as evidenc-

ing possible medical impairments. These constitute the 13 classes from 49 to 61. The 7 classes from 49 to 55 cover tuberculosis in the family. The other family history classes from 56 to 61 cover two or more cases of apoplexy or paralysis, of heart disease, of cancer, of diabetes, of insanity, or of epilepsy. In all cases the term family means parents, brothers and sisters, but does not extend to grandparents or collaterals. Living parents, brothers, or sisters afflicted with one of these diseases are reckoned as if dead from it. While making a record of these classes, we also noted the longevity of the family as a whole, dividing the cases into the symbols A, B, C, D, and E, in accordance with the definitions already given. Here again we found that often the case could not be classified according to longevity, and these cases will be grouped under Symbol X as indeterminate.

When we came to analyze these classes, we found that the material was rather scanty save in 53 and 55. In these two the material was sufficient to justify an elaborate analysis, but in the others we have had to content ourselves with what subdivisions the material permitted. In all classes the same conditions were observed as in the untainted family history symbols. Only white men were included, and the 68 occupations called for by the Medico-Actuarial Mortality Investigation were discarded. In one respect, however, the composition of these classes differed from the ones we have already discussed. The year of issue began with 1885 instead of 1891, and extended to 1908 instead of ending with 1899. The period of observation terminated in both cases with the anniversary of the policy in 1909.

So far as medical impairments are concerned, those prior to number 49 were eliminated and these cover all the more important and more common ones. Those medical impairments which are named in the Medico-Actuarial list following the family history classes were included, but these are very infrequent, with the exception of hernia. In the Mutual Life, policyholders with hernia were always required to wear a truss, so the influence of this factor may be disregarded.

Let us then take up for consideration Medical Impairment Class No. 53, one brother or sister dead of tuberculosis, or afflicted with it. In studying tuberculosis in the family it seemed to be necessary to take the weight of the entrants into consideration, and each symbol was divided into the lighter weights and the heavier weights, according as they fell above or below the following scale:

Height	Weight	Height	Weight
4 ft. 9 in.	119	5 ft. 9 in.	153
4 ft. 10 in.	120	5 ft. 10 in.	159
4 ft. 11 in.	122	5 ft. 11 in.	164
5 ft. 0 in.	123	6 ft. 0 in.	170
5 ft. 1 in.	125	6 ft. 1 in.	176
5 ft. 2 in.	127	6 ft. 2 in.	183
5 ft. 3 in.	130	6 ft. 3 in.	190
5 ft. 4 in.	133	6 ft. 4 in.	197
5 ft. 5 in.	136	6 ft. 5 in.	205
5 ft. 6 in.	140		
5 ft. 7 in.	144		
5 ft. 8 in.	149		

This scale is the dividing line between build-groups 0 and 6. Build-group 0 runs about 10 per cent. above this scale and build-groups 1, 2, 3, 4, and 5 are progressively heavier in about the same proportion. Build-group 6 covers about 10 per cent. below the scale, and build-groups 7, 8, and 9 are progressively lighter in about the same proportion. This dividing scale is above the average weight of men up to age 25, and after that it is below the average weight. Build-group 6 contains a few young entrants who are above the average weight for their age, and build-group 0 containing a few more older entrants who are below the average weight for their age. This raises the question whether build-group 0 is properly classified among the heavier weights. So far as a tubercular family history is concerned, I am convinced that it is properly placed there, for the influence of weight in this impairment diminishes rapidly after 30, as I will show later.

I made but one actual test of build-groups 0 and 6, and this showed a mortality under 30 of 133 per cent. for 6, and 83 per cent. for 0. These results are doubtless exaggerated on account of the small number of deaths in the test, but they indicate the proper place for build-group 0.

Tables 7, 8, 9, 10, 11, 12, and 13 show the results in each of the symbols and in the two subdivisions of each symbol:

1. The class as a whole shows good results, the total mortality being only 95 per cent. It is quite high in the ages below 30, but distinctly good above 40.

2. Symbol X, in which the family record is indeterminate, though not containing cases with a demonstrably long-lived family record, is also good, the mortality being 96 per cent.

3. Symbol A, where both parents had attained 70, is excellent, the mortality being 78 per cent.

4. Symbols B and C, both supposed to be long-lived, show a mortality of 95 per cent., nearly the same as Symbol D, which represents an average family history. This arises partly from the fact that B and C contain a large proportion of younger entrants. B has 80 per cent. of its entrants under age 40, and C 95 per cent. as contrasted with 71 per cent. in D and 60 per cent. in E. Sixty per cent. of the entrants in C are under age 30 as contrasted with 32 per cent. in D and 21 per cent. in E.

I think this suffices to account for the high mortality in C, especially as nearly two-thirds of these entrants under 30 fell among the lighter weights. In regard to B, we must remember that the definition of this is "one parent and two grandparents reached 70, the other parent living." If less than two grandparents reached 70, the case would have been put in Symbol X. Perhaps some of those applicants misstated the age of the grandparents and thereby transferred themselves from X to B.

I am convinced that the grandparental history as affecting the untainted symbols B and C was correctly given and that when correct it is of substantial value in determining the prospective longevity of an applicant, especially in the younger ages. On the other hand, an applicant's conscience is pretty flexible as regards the ages of his grandparents if he thinks that the addition of a few years there will better his prospects for life insurance.

5. E shows very poor results, the mortality being 133 per cent. The deaths are few, but the result, though exaggerated perhaps on this account, accords with our knowledge of the significance of a short-lived family history.

6. When we come to study the influence of weight, the results are interesting. The total mortality of the lighter weights is 100 per cent. and of the heavier weights 91 per cent.

Table F shows the mortalities in the different age-groups:

TABLE F

	Lighter Weights	Heavier Weights
Under 30	140%	106%
30–39	111%	98%
40–49	79%	81%
50 and over	73%	91%

Under age 30, the heavier weights have decidedly the best of it. The combination of a tubercular brother or sister with build-groups 6 and 7 makes for a high mortality in these ages. It is important to note this, for under 25 years of age build-group 6 contains some who are above the average weight for the age. It also emphasizes the importance of establishing a table of heights and weights in accordance with the mortality and not with the average. From 30-39 the lighter weights still have the worst of it, but they are not very bad and the difference between the two groups is much less. After 40 a tubercular brother or sister seems to be of little consequence, and after 50 the lighter weights have distinctly the better mortality, thereby again drawing attention to the need of a proper table of heights and weights.

In the individual symbols, however, the significance of the weights varies and in B, D, and E the lighter weight mortality is distinctly better than the heavier weight mortality. In all three symbols, however, it seems to depend partly upon the age-composition of the two sets of build-groups. The lower mortality of the older ages in the lighter weights more than compensates for the higher mortality of the younger ages and the converse is true in the heavier weights.

The definition of Medical Impairment Class No. 55 is "one parent dead of tuberculosis." The class was a large one in the Mutual Life like M. I. Class 53, for one case of tuberculosis in the family record has not acted as much of a bar to insurance.

Symbols B and C were practically unrepresented for there were but three deaths in B and one in C, and therefore they have not been analyzed. The entire class and the other symbols, divided into lighter and heavier weights as in M. I. Class 53, are set forth in tables 14, 15, 16, 17 and 18.

1. The class as a whole has been well selected, the total mortality being 94 per cent. This is a trifle better than M. I. Class 53, and nearly every subdivision of 55 shows a similar result. The mortality of the heavier weights throughout is lower than that of the lighter weights.

2. The deaths in A are too few for comment, except that the low mortality accords with our expectations.

3. X with a mortality of 92 per cent. and D with 95 per cent, require no comment, especially as the lighter weights show a larger mortality than the heavier weights in each symbol.

4. E, the short-lived family history symbol, shows a mortality of only 95.6 per cent., less than 2 per cent. greater than that of D, and very much lower than that of 53 E which is 133 per cent. This requires explanation, but before taking it up, I wish to submit the following table which shows the mortality in the lighter and heavier weight sets of the whole M. I. Class 55 at different ages:

TABLE G

Ages	Lighter Weights	Heavier Weights
Under 30	124%	96%
30–39	107%	83%
40–49	76%	88%
50 and over	60%	78%

If you compare this table with Table F you will notice that the results are uniformly lower than in that class, showing that 55 has been better selected than 53, and this is true of all ages and all weights. Perhaps this improved selection in 55 was due to the idea that the hereditary influence of tuberculosis would be more strongly transmitted through a parent than through a brother or sister. Now, the results in the symbols other than E show this stricter selection to a moderate degree only, but in E to a very striking degree. Symbol E contains only those, both of whose parents have died below sixty years of age, and in 55E one of these parents must have died of tuberculosis. That was the pen-picture presented to the Medical Director, and he undoubtedly approved for insurance only those cases which he thought were distinctly favorable. It is not easy in a small class like this to say definitely what were the factors which made for better selection, for we cannot subdivide it further with conclusive results. Let us consider in detail, however, the factors in which 55E differs from 53E.

1. The age composition differs somewhat. Thirty-seven per cent. of the entrants in 55E are under thirty years of age, and only 21 per cent. in 53E. Ordinarily, this would tend to make the mortality in 55E higher than in 53E, but it does not succeed.

2. The weight composition differs a little in the two classes and it is set forth in full detail in the following table:

TABLE H

M. I. No. 53. One Brother or Sister Dead of Tuberculosis. Symbol E

Build Group	All Ages		15–29		30–39		40–49		50 & Over	
	No.	%	No.	%	No.	%	No.	%	No.	%
0	348	33.0	64	28.3	147	36.3	94	29.6	43	39.8
1	153	14.5	22	9.7	55	13.6	57	18.0	19	17.6
2	83	7.9	4	1.8	38	9.4	31	9.8	10	9.3
3	24	2.3	3	1.3	7	1.7	11	3.5	3	2.8
4	4	.4	.	.	1	.2	2	.6	1	.9
5	...	...	...	...	...	...	...	...	...	...
6	339	32.1	89	39.3	127	31.4	95	29.9	28	25.9
7	105	9.9	44	19.4	30	7.4	27	8.5	4	3.7
8	...	...	...	...	...	...	...	...	...	...
Total...	1056	...	226	...	405	...	317	...	108	...

M. I. No. 55. One Parent Dead of Tuberculosis. Symbol E

0	1104	31.1	406	30.6	418	30.2	215	33.5	65	32.7
1	451	12.7	90	6.8	214	15.5	101	15.8	46	23.1
2	197	5.6	27	2.0	79	5.7	64	10.0	27	13.6
3	50	1.4	5	.4	22	1.6	15	2.3	8	4.0
4	18	.5	...	.	6	.4	12	1.9	...	..
5	...	...	...	...	...	...	...	...	...	...
6	1322	37.3	600	45.2	494	35.7	185	28.9	43	21.6
7	404	11.4	194	14.6	149	10.8	51	8.0	10	5.0
8	6	.2	4	.3	2	.1	.	.	...	.
Total...	3552	...	1326	...	1384	...	643	...	199	...

In the age-period 15-29 light-weight build-group 7 is larger proportionately in 53 than in 55. In the age-period 30-39, build-groups 6 and 7 are smaller in 53 than in 55. In the age-period of 50 and over the heavier build-groups 1, 2, 3, and 4 are smaller in 53 than in 55. The differences, though, are not marked in any case. It seems hardly possible to ascribe the difference in mortality to them alone for the lighter weights favor 55, but the heavier weights favor 53.

3. Judging by the causes of death, the risk of infection has been about the same in the two classes. In 55E 22 per cent. of the deaths were due to tuberculosis and in 53E 25 per cent.

4. The influence of heredity presumably differs in the two classes, for it is natural to assume that a parent is more potent in this regard than a brother or sister. The selection of the risks in these two

classes was undoubtedly influenced by this idea, though considered by itself, heredity ought to favor 53.

5. Perhaps the family histories in 53E are not reliable. In this class the applicant acknowledges that a brother or sister has died of tuberculosis and that both of his parents have died under sixty, but not of tuberculosis. It may be that in some of these cases one or both parents did die of tuberculosis. If so, the case would properly belong in 51E or 49 E. In these classes the mortality is much higher than in 53 E as will be shown.

The definition of Medical Impairment Class 50 is "one parent and two or more brothers or sisters dead of tuberculosis or afflicted with it." The class was small and naturally contained almost none in Symbols A, B, and C. Tables 19, 20, 21, and 22 show the results in the whole class, and in Symbols X, D, and E.

1. The results in the whole class are fairly good, the mortality being only 106 per cent. Below 40 it is quite bad, 172 per cent., but above that age it is only 86 per cent.

2. X shows a mortality of 67 per cent., D of 105 per cent., and E of 200 per cent., but the number of deaths in each symbol is too few to warrant any conclusions. It is interesting, though, to note that the rise in mortality accords with the fall in family longevity.

3. Theoretically, the class ought to show a much larger mortality than 106 per cent. Doubtless the cases were picked with great care. When the class was divided into build-groups, it was found that the distribution differed greatly from that in 53 and 55. In these the build-group 1, which represents the very moderate overweights, contained 14 per cent., of all entrants, but in 50 it contained 22 per cent. The light-weight build-groups in 53 contained 44 per cent. of the entrants and in 55, 52 per cent. of the entrants, but in 50 only 20 per cent. of the entrants. This weight distribution must be of great influence in determining the low mortality in 50, and with the greater care in selection may suffice to account for it.

The definition of Medical Impairment Class No. 52 is "two or more brothers or sisters dead from tuberculosis or afflicted with it." This class is not very large, and probably contains few with more than two cases of tuberculosis in the family record. Symbols X, A, and D contained sufficient entrants to permit their subdivision into the lighter and heavier weights, but B, C, and E were too small. Tables 23, 24, 25, and 26 show the results of our analysis.

1. The class as a whole is a little inferior, the mortality being 108 per cent., though in the entrants above 50 it is distinctly good. The risks were certainly picked with care, but in spite of this, the mortality in ages below 40 was 142 per cent. The age group 40-49 shows a mortality of 127 per cent. but this is due almost entirely to the heavier weights, who show a mortality of 144 per cent. in this age group, the actual deaths amounting to 55.

2. X shows a mortality of 115 per cent. for the whole symbol. The lighter weights are good, giving only 97 per cent. as against 121 per cent. for the heavier weights. These mortalities go against the rule. Perhaps the irregularity is due to the small number of deaths, or it may be that we attached too much importance to weight as an antidote to the tubercular family history. We may have thought that if a little overweight was good

ISSUE OF 1891 TO 1899. EXPOSURE OF 1891 TO 1909

TABLE 1

Symbol A. Both Parents Reached 70

Ages at Entry	Number of Entrants	Exposures	Deaths		Ratio
			Expected	Actual	
15–19	3	13	.....	.....	.....
20–29	652	4,620	22.1	18	81.4
30–39	5,044	38,243	240.0	225	93.8
40–49	6,002	45,293	502.0	422	84.0
50–59	2,337	16,177	368.3	337	91.7
60 & Ov.	432	2,901	150.7	116	77.0
Total....	14,470	107,247	1283.1	1118	87.1

TABLE 2

Symbol B. One Parent and Two Grandparents Reached 70, Other Parent Living

Ages at Entry	Number of Entrants	Exposures	Deaths		Ratio
			Expected	Actual	
15–19	52	315	1.3	3	230.7
20–29	2,501	17,911	86.0	83	96.3
30–39	4,032	30,329	184.2	162	88.0
40–49	1,286	9,352	94.6	69	73.1
50–59	20	131	2.6	.....	.....
60 & Ov.	.....	.....	.....	.....	.....
Total.....	7,891	58,038	368.7	317	85.9

TABLE 3

Symbol C. Both Parents Living Below 70, and Three Grandparents Reached 70

Ages at Entry	Number of Entrants	Exposures	Deaths		Ratio
			Expected	Actual	
15–19	1,123	8,756	39.1	51	130.6
20–29	14,199	105,147	499.4	434	86.8
30–39	6,108	46,169	271.1	225	83.0
40–49	522	3,660	34.6	22	63.6
50–59	3	18	.....	.....	.....
60 & Ov.	.....	.....	.....	.....	.....
Total.....	21,955	163,750	844.2	732	86.4

TABLE 4

Symbol D. All Cases Between Above and E Classed as D

Ages at Entry	Number of Entrants	Exposures	Deaths		Ratio
			Expected	Actual	
15–19	1,816	13,089	58.1	56	96.3
20–29	27,836	202,370	963.7	900	93.6
30–39	22,095	165,330	995.0	928	93.7
40–49	8,477	59,175	621.4	532	85.7
50–59	2,051	14,202	328.8	298	90.6
60 & Ov.	375	2,430	121.3	115	94.8
Total.....	62,650	456,596	3088.3	2829	91.7

TABLE 5

Symbol E. Both Parents Dead Below 60

Ages at Entry	Number of Entrants	Exposures	Deaths		Ratio
			Expected	Actual	
15–19	78	521	2.3	3	129.3
20–29	2,897	19,708	93.9	109	115.5
30–39	3,990	27,508	166.1	185	111.4
40–49	1,987	12,920	136.9	153	111.7
50–59	560	3,762	84.8	87	102.7
60 & Ov.	112	624	30.5	32	105.0
Total.....	9,624	65,043	514.5	569	110.4

Total, all symbols combined.

	116,590	850,674	6098.8	5565	91.3

TABLE 6

Deaths From Specified and Classified Diseases for Each Symbol

Cause of Death	Symbol A		Symbol B		Symbol C		Symbol D		Symbol E	
	No.	%	No.	%	No.	%	No.	%	No.	%
Total All Causes	1,118	.....	317	.....	732	.....	2,829	.....	569	.....
Typhoid Fever	27	2.4	29	9.1	101	13.8	247	8.7	25	4.4
Malarial Fever	11	1.0	4	1.3	6	.8	31	1.1	11	1.9
Influenza	18	1.6	2	.6	10	1.4	39	1.4	7	1.2
Total General Diseases A	69	6.2	41	12.9	128	17.5	362	12.8	55	9.7
Tuberculosis	79	7.1	58	18.3	139	19.0	420	14.8	73	12.8
Cancer	87	7.8	23	7.2	23	3.2	122	4.3	31	5.5
Diabetes	9	.8	7	2.2	15	2.1	36	1.3	13	2.3
Alcoholism	6	.5	2	.6	7	1.0	20	.7	4	.7
Total General Diseases B	214	19.1	98	30.9	203	27.8	673	23.8	132	23.2
(Apoplexy, Paralysis and Softening of the Brain)	139	12.4	15	4.7	26	3.6	199	7.0	48	8.4
General Paresis of Insane	8	.7	3	.9	9	1.2	32	1.1	3	.5
Insanity	3	.3	4	1.3	4	.5	23	.8	6	1.1
Total Nervous Diseases	175	15.6	33	10.4	71	9.7	357	12.6	68	12.0
Heart Disease	124	11.1	14	4.4	24	3.3	196	6.9	50	8.8
Angina Pectoris	26	2.3	2	.6	2	.3	37	1.3	6	1.1
Arterio-Sclerosis	21	1.9	.....	.....	3	.4	19	.7	.....	.....
Total Circulatory Diseases	181	16.2	21	6.6	36	4.9	278	9.8	59	10.4
Pneumonia	112	10.0	25	7.9	54	7.4	222	7.8	50	8.8
Total Respiratory Diseases	130	11.6	26	8.2	61	8.4	266	9.4	63	11.1
Diseases of Liver and Gall Bladder	30	2.7	11	3.5	10	1.4	86	3.0	13	2.3
Appendicitis and Peritonitis	24	2.1	10	3.2	35	4.8	111	3.9	18	3.2
Total Digestive Diseases	94	8.4	27	8.5	69	9.5	302	10.7	45	7.9
Bright's Disease	90	8.0	19	6.0	30	4.1	153	5.4	44	7.7
Total Genitourinary Diseases	112	10.0	22	6.9	32	4.4	175	6.2	48	8.4
Suicides	39	3.5	8	2.5	26	3.6	98	3.5	26	4.6
Casualties	76	6.8	35	11.0	96	13.2	258	9.1	57	10.0
Violent Causes	115	10.3	43	13.5	122	16.7	356	12.6	83	14.6
Unclassified	28	2.5	6	1.9	10	1.4	60	2.1	16	2.8

ISSUE OF 1885 TO 1908—EXPOSURE OF 1885 TO 1909

M. I. No. 53. One Brother or Sister Dead of Tuberculosis

TABLE 7

All Symbols and All Builds

Ages at Entry	Number of Entrants	Exposures	Deaths		Ratio
			Expected	Actual	
15–19	390	2,050	7.6	11	145.2
20–29	5,949	37,726	178.2	224	125.7
30–39	8,492	57,653	354.4	367	103.5
40–49	5,152	33,963	366.9	294	80.0
50–59	1,806	10,954	248.7	216	86.8
60 & Ov.	323	1,881	92.3	75	81.0
Total.....	22,112	144,227	1248.1	1187	95.1

for one case of tuberculosis in the family, more was good for two cases.

3. A shows good results, the total mortality being only 86 per cent. The entrants under thirty are very few, for in this symbol both parents attained seventy. As a consequence of the lack of entries under thirty, the mortalities in the weight subdivisions also go against the rule as in X, the lighter weights giving 78 per cent. and the heavier weights 91 per cent. Taking it altogether we must conclude that the long-lived parents have offset the tubercular taint in the brothers and sisters.

4. B and C are too small to give conclusive results, but the two together show a mortality of 100 per cent. only.

5. D shows a mortality of 109 per cent., the lighter weights being a little worse than the heavier weights.

6. In E the mortality is 118 per cent., but the number of deaths is too few to be of any distinct significance.

TABLE 8

M. I. No. 53. Symbol X. Entire

Ages at Entry	Number of Entrants	Exposures	Deaths		Ratio
			Expected	Actual	
All Ages...	7,269	45,751	384.5	370	96.2
Lighter Weights—Build Groups 6, 7, 8, 9					
15–19	98	460	2.0	4	200.0
20–29	1,152	7,087	33.9	50	147.5
30–39	1,237	8,094	47.9	59	123.3
40–49	543	3,458	36.9	35	94.9
50–59	181	1,089	24.8	21	84.6
60 & Ov.	34	212	10.5	7	66.6
Total	3,245	20,400	156.0	176	112.8
Heavier Weights—Build Groups 0, 1, 2, 3, 4, 5					
15–19	39	200	.7	.....	.....
20–29	852	5,058	23.9	23	96.1
30–39	1,620	10,899	66.0	55	83.6
40–49	1,045	6,544	68.1	47	69.1
50–59	390	2,160	45.8	48	104.6
60 & Ov.	78	490	24.9	21	87.6
Total.....	4,024	25,351	228.5	194	84.8

The definition of Medical Impairment Class 51 is "one parent and a brother or sister dead of tuberculosis or afflicted with it." This class is not large, and naturally contains very few with a long-lived family record, symbols A, B, and C being practically absent. Tables 27, 28, 29, and 30 show the mortality in the whole class and in the symbols X, D, and E, each divided into lighter and heavier weights.

1. The mortality in the class as a whole is high, being 117 per cent. It is high in all age-groups except 50-59. The entrants below age 40 show a mortality of 149 per cent. and those above of 96 per cent.

2. X shows a mortality of 129 per cent., decidedly higher than X in Classes 53 or 55.

TABLE 9

M. I. No. 53. Symbol A. Entire

Ages at Entry	Number of Entrants	Exposures	Deaths		Ratio
			Expected	Actual	
All Ages	3,141	20,568	253.7	199	78.4
Lighter Weights—Build Groups 6, 7, 8, 9					
15–19	.....	.....	.....	.....	.....
20–29	54	475	2.2	3	136.5
30–39	433	2,914	18.9	30	158.7
40–49	441	2,988	31.9	24	75.1
50–59	182	1,143	27.7	20	72.2
60 & Ov.	35	203	9.9	4	40.4
Total . .	1,145	7,723	90.6	81	89 1
Heavier Weights—Build Groups 0, 1, 2, 3, 4, 5					
15–19	.....	.....	.....	.....	.....
20–29	58	322	1.5	.....	.....
30–39	601	4,118	26 4	19	72 0
40–49	872	5,504	61.6	42	68.0
50–59	412	2,574	57.3	45	78 8
60 & Ov.	53	327	16.3	12	73.6
Total	1,996	12,845	163.1	118	72.3

TABLE 10

M. I. No. 53. Symbol B. Entire

Ages at Entry	Number of Entrants	Exposures	Deaths		Ratio
			Expected	Actual	
All Ages	1,160	7,694	51.4	49	95 6
Lighter Weights—Build Groups 6, 7, 8, 9					
15–19	12	68	.....	.....	.....
20–29	182	1,319	6.2	4	64.4
30–39	246	1,644	9.7	9	92.7
40–49	73	537	5.2	4	76.8
50–59	5	31	.....	1	.
60 & Ov.	.....	.....	.....	.....	.....
Total .	518	3,599	21.1	18	85.3
Heavier Weights—Build Groups 0, 1, 2, 3, 4, 5					
15–19	3	11	.....	.....	.....
20–29	160	868	3.8	9	236.7
30–39	326	2,226	13.4	13	97 0
40–49	143	907	10 0	8	80.0
50–59	8	62	1.3	.....	.....
60 & Ov.	2	21	1.8	1	55.6
Total	642	4,095	30.3	31	102.3

TABLE 11

M. I No. 53. Symbol C. Entire

Ages at Entry	Number of Entrants	Exposures	Deaths		Ratio
			Expected	Actual	
All Ages .	1,653	10,425	54.1	51	94.4
Lighter Weights—Build Groups 6, 7, 8, 9					
15–19	59	361	1.4	1	71.4
20–29	508	3,413	16.0	19	118 8
30–39	248	1,636	9.4	5	53.0
40–49	25	197	1.7	2	117.6
50–59	.	....	.....	.....	.....
60 & Ov.		....	.....	.....	.....
Total.....	840	5,607	28.5	27	94.8
Heavier Weights Build Groups 0, 1, 2, 3, 4, 5					
15–19	24	105	.4	4	1000.0
20–29	398	2,306	10.3	10	97.1
30–39	345	2,105	12.3	9	73.2
40–49	45	297	2.6	1	38.5
50–59	1	5	.....	.....	.....
60 & Ov.	. . .	. .	.....	.....	.....
Total.... .	813	4,818	25.6	24	93.8

3. D shows a mortality of 104 per cent., somewhat higher than D in Classes 53 or 55.

4. E shows a mortality of 148 per cent. A short-lived family history coupled with this amount of tubercular taint seems to be effective in raising the mortality.

5. Besides the deaths in these three symbols, there is a residue of two actual deaths, and between three and four expected death. This represents a mortality of 50 per cent. to 70 per cent. for the long-lived symbols, which is interesting even if the deaths are only two in number.

TABLE 12

M. I. No. 53. Symbol D. Entire

Ages at Entry	Number of Entrants	Exposures	Deaths		Ratio
			Expected	Actual	
All Ages . .	7,833	53,155	445.2	439	98.8
Lighter Weights—Build Groups 6, 7, 8, 9					
15–19	102	569	2.3	.....	.....
20–29	1,326	8,866	42.4	64	151.0
30–39	1,300	9,554	60.4	62	102.9
40–49	612	4,303	48.4	29	60.0
50–59	189	1,244	31.0	17	54.9
60 & Ov.	41	168	7.3	8	109.6
Total	3,570	24,704	191.8	180	93.8
Heavier Weights—Build Groups 0, 1, 2, 3, 4, 5					
15–19	44	241	.8	2	250.0
20–29	1,042	6,666	32.1	27	84.2
30–39	1,731	11,905	74.1	83	112.1
40–49	1,036	7,185	79.7	79	98.8
50–59	346	2,060	47.2	51	108.1
60 & Ov.	64	394	19.5	17	87.2
Total.....	4,263	28,451	253.4	259	102.1

TABLE 13

M. I. No. 53. Symbol E. Entire

Ages at Entry	Number of Entrants	Exposures	Deaths		Ratio
			Expected	Actual	
All Ages . .	1,056	6,634	59.2	79	133.5
Lighter Weights—Build Groups 6, 7, 8, 9					
15–19	8	34	.....	.....	.....
20–29	125	750	3.3	9	272.7
30–39	157	1,042	6 7	5	74.5
40–49	122	817	8.3	10	120.0
50–59	28	205	4.8	6	124.8
60 & Ov.	4	16	1.0	2	200.0
Total.....	444	2,864	24.1	32	132.8
Heavier Weights—Build Groups 0, 1, 2, 3, 4, 5					
15–19	1	1	.....	.....	.....
20–29	92	596	2.6	6	231.0
30–39	248	1,516	9 2	18	196.2
40–49	195	1,226	12.5	13	104.0
50–59	64	381	8.8	7	79.8
60 & Ov.	12	50	2.0	3	150.0
Total.....	612	3,770	35 1	47	134.0

ISSUE OF 1885 TO 1908—EXPOSURE OF 1885 TO 1909

M. I. No. 55. One Parent Dead of Tuberculosis

TABLE 14

All Symbols and All Builds

Ages at Entry	Number of Entrants	Exposures	Deaths		Ratio
			Expected	Actual	
15–19	677	3,333	13.8	20	145.0
20–29	8,457	54,019	255.6	288	112.6
30–39	7,156	49,437	297.8	283	95.1
40–49	3,247	20,639	215.7	180	83.3
50–59	917	5,573	129.9	95	73.2
60 & Ov.	144	788	39.1	27	69.1
Total.....	20,598	133,789	951.9	893	93.8

6. In all the symbols the mortality in the lighter weights is greater than in the heavier weights. The following table shows the influence of age on the mortality of the two weight sets:

TABLE I

	Lighter Weights	Heavier Weights
Under 30.....	223%	131%
30–39.	167%	108%
40–49	91%	135%
Over 50.....	57%	93%

This agrees in general with our ideas that the lighter weights suffer more than the heavier weights in the early ages and less in the older ages.

The definition of Medical Impairment Class 54

TABLE 15

M. I. No. 55. Symbol X. Entire

Ages at Entry	Number of Entrants	Exposures	Deaths		Ratio
			Expected	Actual	
All Ages...	6,770	41,728	308.3	282	91 7
Lighter Weights—Build Groups 6, 7, 8, 9					
15–19	192	870	3.5	8	228.8
20–29	1,553	10,048	47.4	55	116.1
30–39	1,116	7,545	44 7	50	112 0
40–49	474	2,866	28.6	23	80.5
50–59	117	674	15 2	13	85.5
60 & Ov.	18	83	4 2	4	95 2
Total	3,470	22,086	143.6	153	106 5
Heavier Weights—Build Groups 0, 1, 2, 3, 4, 5					
15–19	47	152	.5	1	200 0
20–29	967	5,546	26.1	21	80.4
30–39	1,213	7,711	47.3	36	76.0
40–49	766	4,558	46.5	42	90.3
50–59	257	1,360	29.2	22	75.2
60 & Ov.	50	315	15.1	7	46.3
Total .	3,300	19,642	164 7	129	78 3

TABLE 16

M. I. No. 55. Symbol A Entire

Ages at Entry	Number of Entrants	Exposures	Deaths		Ratio
			Expected	A tual	
All Ages .	132	1,010	10.9	7	64 2
Lighter Weights—Build Groups 6, 7, 8, 9					
15–19	..	.....	... .	.. ...	...
20–29	3	22	.....	.	...
30–39	30	238	1.2	1	833
40–49	19	132	.8	2	2500
50–59	11	114	3.7		
60 & Ov.	....	.....	.....		
Total... ..	63	506	5.7	3	52.5
Heavier Weights—Build Groups 0, 1, 2 3, 4, 5					
15–19	.....	.....	.....		
20–29	3	24	.....	1	
30–39	21	139	.3		
40–49	29	242	2.8	1	35 7
50–59	14	84	1.4	2	142 8
60 & Ov.	2	15	.7	... ..	
Total	69	504	5.2	4	76.8

TABLE 17

M. I. No. 55. Symbol D. Entire

Ages at Entry	Number of Entrants	Exposures	Deaths		Ratio
			Expected	Actual	
All Ages .	10,064	68,688	472.3	447	94 8
Lighter Weights—Build Groups 6, 7, 8, 9					
15–19	295	1,586	6.8	6	88.2
20–29	2,865	19,452	93.6	118	126.3
30–39	1,615	12,440	77.3	80	103.2
40–49	486	3,388	36 5	25	68.5
50–59	110	758	20 5	6	29 3
60 & Ov.	10	59	3 1	1	32 3
Total. . . .	5,381	37,683	237 8	236	99 1
Heavier Weights—Build Groups 0, 1, 2, 3, 4, 5					
15–19	89	454	1.9	4	210.4
20–29	1,754	11,174	53.2	48	90 2
30–39	1,745	12,155	74.2	70	94.5
40–49	823	5,562	61.2	55	89.7
50–59	236	1,494	35.8	28	78 1
60 & Ov.	36	166	8.2	6	73 2
Total	4,683	31,005	234 5	211	89 9

TABLE 18

M. I. No. 55 Symbol E. Entire

Ages at Entry	Number of Entrants	Exposures	Deaths		Ratio
			Expected	Actual	
All Ages...	3,552	21,744	160.0	153	95.6
Lighter Weights—Build Groups 6, 7, 8, 9					
15–19	31	144	.6	1	167 0
20–29	767	4,938	23 3	30	128.7
30–39	645	4,431	26 4	28	106 1
40–49	236	1,432	15 4	12	77 9
50–59	46	311	7 3	6	82.2
60 & Ov.	7	51	3.0	4	133.2
Total.....	1,732	11,307	76.0	81	106.9
Heavier Weights—Build Groups 0, 1, 2, 3, 4, 5					
15–19	20	122	.5	...	...
20–29	508	2,592	12 0	14	116.6
30–39	739	4,466	26 1	15	57.5
40–49	407	2,383	23 8	20	84.0
50–59	125	775	16 8	18	107.1
60 & Ov.	21	99	4 8	5	104.0
Total... .	1,820	10,437	84.0	72	85.7

ISSUE OF 1885 TO 1908—EXPOSURE OF 1885 TO 1909

M. I. No. 50. One Parent and Two or More Brothers or Sisters Dead of Tuberculosis

TABLE 19

All Symbols and All Builds

Ages at Entry	Number of Entrants	Exposures	Deaths		Ratio
			Expected	Actual	
15–19	.	.	.	.	.
20–29	55	318	1.1	3	272.7
30–39	143	942	5.3	8	151.2
40–49	152	903	8.7	10	115.0
50–59	66	434	9.1	6	66.0
60 & Ov.	13	74	4.2	3	71.4
Total. ..	429	2,671	28.4	30	105.6

TABLE 20

M. I. No. 50. Symbol X. Entire

Ages at Entry	Number of Entrants	Exposures	Deaths		Ratio
			Expected	Actual	
15–19	.....	.....	.....	...	...
20–29	20	143	.7	2	286.0
30–39	53	303	1.7	1	58.8
40–49	58	353	3.4	3	88.2
50–59	35	223	4.5	1	22.2
60 & Ov.	5	30	1.6	1	62 5
Total.....	171	1,052	11.9	8	67.2

TABLE 21

M. I. No. 50. Symbol D. Entire

Ages at Entry	Number of Entrants	Exposures	Deaths		Ratio
			Expected	Actual	
15–19	.....	.....	.....	.. ...	...
20–29	23	117	.5	..	...
30–39	56	391	2.3	3	130.5
40–49	60	352	3 2	3	93.9
50–59	17	132	3 1	4	129.2
60 & Ov.	6	31	1 3	1	76.9
Total . ..	162	1,023	10 4	11	105.8

is "two parents dead of tuberculosis or afflicted with it." The results for the whole class and for Symbol E are shown in Tables 31-32 and 50.

1. The number of entrants was very small and nearly all of them belonged in Symbol E.

The mortality for the whole class was comparatively low, 101 per cent. This low mortality, however, disappears if we eliminate the five entrants of sixty years and over. None of them died and they represent a total exposure of fifty years, which at their high ages accounts for 4.1 expected deaths. If we deduct these from the total expected deaths, we get a mortality of 150 per cent. Probably the truth for this impairment in general would fall about midway between this and the actual result. We will not be far out of the way if we estimate it at 125 per cent.

2. If we apply this method to Symbol E, we get a final mortality of 149 per cent. instead of 134 per cent. as given in the table.

The deaths are too few to permit of further an-

TABLE 22

M. I. No. 50. Symbol E. Entire

Ages at Entry	Number of Entrants	Exposures	Deaths		Ratio
			Expected	Actual	
15–19	.....	.....	.....	.....	.....
20–29	12	58	.3	1	333.0
30–39	31	214	1.3	4	307.6
40–49	23	123	1.1	3	272.7
50–59	11	59	1.1	.....	.....
60 & Ov.	2	13	.8	1	125.0
Total.....	79	467	4.6	9	195.3

ISSUE OF 1885 TO 1908—EXPOSURE OF 1885 TO 1909

M. I. No. 52. Two or More Brothers or Sisters Dead of Tuberculosis
All Symbols and All Builds

TABLE 23

Ages at Entry	Number of Entrants	Exposures	Deaths		Ratio
			Expected	Actual	
15–19	15	77	.....	1	.....
20–29	513	3,061	10.8	20	185.2
30–39	1,088	7,332	41.2	53	128.8
40–49	926	6,093	62.2	79	127.2
50–59	371	2,292	49.5	36	72.7
60 & Ov.	74	468	25.5	16	62.7
Total.....	2,987	19,323	189.2	205	108.4

TABLE 24

M. I. No. 52. Symbol X. Entire

Ages at Entry	Number of Entrants	Exposures	Deaths		Ratio
			Expected	Actual	
All Ages. .	967	5,932	56.5	65	115.1
Lighter Weights—Build Groups 6, 7, 8, 9					
15–19	3	25	.1	.....	.....
20–29	75	425	2.0	4	200.0
30–39	115	697	4.2	6	202.8
40–49	95	616	6.3	2	31.8
50–59	22	129	2.4	3	125.1
60 & Ov.	5	12	.4	.....	.....
Total.....	315	1,904	15.4	15	97.4
Heavier Weights—Build Groups 0, 1, 2, 3, 4, 5					
15–19	3	10	.....	.....	.....
20–29	98	552	2.4	3	125.1
30–39	251	1,632	9.6	11	114.4
40–49	200	1,178	11.2	20	178.6
50–59	84	543	12.5	14	112.0
60 & Ov.	16	113	5.4	2	37.0
Total ..	652	4,028	41.1	50	121.5

TABLE 25

M. I. No. 52. Symbol A. Entire

Ages at Entry	Number of Entrants	Exposures	Deaths		Ratio
			Expected	Actual	
All Ages...	598	4,121	56.7	49	86.2
Lighter Weights—Build Groups 6, 7, 8, 9					
15–19	.....	.....	.....	.....	.....
20–29	7	43	.....	1	.....
30–39	81	543	3.0	6	200.0
40–49	60	435	4.8	3	62.4
50–59	44	331	7.9	2	25.4
60 & Ov.	10	71	3.6	3	83.4
Total.....	202	1,423	19.3	15	77.7
Heavier Weights—Build Groups 0, 1, 2, 3, 4, 5					
15–19	.....	.....	.....	.....	.....
20–29	11	52	.....	.....	.....
30–39	86	609	3.5	4	114.4
40–49	190	1,358	15.5	17	109.7
50–59	91	566	12.5	7	56.0
60 & Ov.	18	113	5.9	6	101.4
Total.....	396	2,698	37.4	34	90.8

M. I. No. 52. Symbol B. Entire

All Ages...	184	1,070	7.0	6	85.8

M. I. No. 52. Symbol C. Entire

All Ages...	156	1,035	5.9	7	118.6

TABLE 26

M. I. No. 52. Symbol D. Entire

Ages at Entry	Number of Entrants	Exposures	Deaths		Ratio
			Expected	Actual	
All Ages...	983	6,596	65.3	71	108.6
Lighter Weights—Build Groups 6, 7, 8, 9					
15–19	3	24	.....	1	.....
20–29	91	593	2.8	5	178.5
30–39	130	983	6.0	5	83.5
40–49	105	793	8.8	13	148.2
50–59	25	119	2.6	2	77.0
60 & Ov.	6	48	2.8	.....	.....
Total.....	360	2,560	23.0	26	113.1
Heavier Weights—Build Groups 0, 1, 2, 3, 4, 5					
15–19	3	9	.....	.....	.....
20–29	84	509	2.1	3	142.8
30–39	244	1,775	11.3	13	115.1
40–49	183	1,104	11.4	18	157.9
50–59	92	551	11.3	6	53.1
60 & Ov.	17	88	6.2	5	80.5
Total.....	623	4,036	42.3	45	106.2

M. I. No. 52. Symbol E. Entire

All Ages...	99	569	5.9	7	118.6

alysis. When we consider that M. I. Class 54 is composed almost entirely of cases with a short-lived family history and that this in itself gives a mortality of 110 per cent. in untainted cases, the tubercular element adds something but not a great deal to the risk. Doubtless the cases were selected with great care and on account of this we should increase the mortality somewhat in order to get a correct result.

Medical Impairment Class 49, whose definition is "both parents and one or more brothers or sisters dead from tuberculosis or afflicted with it," had only sixty-four entrants who gave five actual deaths as against 3.6 per cent. expected deaths, a mortality of 139 per cent. The whole class probably belonged in Symbol E and on this account the cases were doubtless selected with great care. The deaths are too few to justify any definite conclusions or permit any further analysis.

Having reached the end of the tubercular family history groups as defined by the Medico-Actuarial Mortality Investigation, it will be well to summarize our results. The following table shows the mortalities of these seven classes. In the top line for purposes of comparison have been placed the mortalities of the untainted family history. The tubercular family history groups have been arranged in the order of the mortality for the entire class, as actually found, except that the place of Class 54 has been fixed by the estimated mortality as explained when it was discussed. A brief definition of each class has been inserted, the word "Sibling," devised by Karl Pearson, being used to mean either brother or sister. The first column shows the mortality of the entire class and the subsequent columns the mortality of each longevity symbol, so far as it has been determined:

TABLE J

	Entire Class	A	B	C	D	E	X
Untainted.....	91	87	86	86	92	110	...
55—1 parent.....	94	64	...	...	95	96	92
53—1 sibling.....	95	78	96	94	99	133	96
50—1 parent and two or more siblings.....	106	...	...	...	105	200	67
52—2 or more siblings .	108	86	87	116	109	118	118
51—1 parent and 1 sibling.....	117	...	...	...	103	147	130
54—2 parents	125	...	...	...	...	134	...
49—2 parents and 1 or more siblings	139	...	...	...	...	139	...

ISSUE OF 1885 TO 1908—EXPOSURE OF 1885 TO 1909
M. I. No. 51. One Parent and a Brother or Sister Dead of Tuberculosis

TABLE 27
All Symbols and All Builds

Ages at Entry	Number of Entrants	Exposures	Deaths		Ratio
			Expected	Actual	
15–19	33	137	.5	2	400.0
20–29	608	3,667	17.1	31	181.4
30–39	930	6,571	39.6	52	131.6
40–49	645	4,298	45.1	51	113.2
50–59	214	1,472	32.9	21	63.8
60 & Ov.	39	232	10.4	13	125.1
Total.	2,469	16,377	145.6	170	116.8

TABLE 28
M. I. No. 51. Symbol X. Entire

Ages at Entry	Number of Entrants	Exposures	Deaths		Ratio
			Expected	Actual	
All Ages...	875	5,349	47.1	61	129.3
Lighter Weights—Build Groups 6, 7, 8, 9					
15–19	6	16	.1	1	1000.0
20–29	121	700	3.3	8	242.4
30–39	121	765	4.3	7	163.1
40–49	81	503	5.5	7	127.4
50–59	29	199	4.4	1	22.7
60 & Ov.	4	8	.2	.....	.....
Total.....	362	2,191	17.8	24	134.8
Heavier Weights—Build Groups 0, 1, 2, 3, 4, 5					
15–19	2	6	.....	.....	.....
20–29	95	531	2.5	4	160.0
30–39	180	1,147	6.7	7	104.3
40–49	169	1,039	10.0	17	170.0
50–59	60	412	9.2	6	65.4
60 & Ov.	7	23	.9	3	333.0
Total.....	513	3,158	29.3	37	126.2

TABLE 29
M. I. No. 51. Symbol D. Entire

Ages at Entry	Number of Entrants	Exposures	Deaths		Ratio
			Expected	Actual	
All Ages...	1,139	8,177	72.7	75	103.5
Lighter Weights—Build Groups 6, 7, 8, 9					
15–19	16	73	.3	.....	.....
20–29	160	1,107	5.3	11	207.9
30–39	178	1,362	8.5	11	129.8
40–49	95	815	9.1	5	55.0
50–59	35	207	4.2	3	71.4
60 & Ov.	7	72	3.5	4	114.4
Total.....	491	3,636	30.9	34	110.2
Heavier Weights—Build Groups 0, 1, 2, 3, 4, 5					
15–19	5	24	.1	.....	.....
20–29	151	882	4.2	5	119.6
30–39	267	2,088	13.2	12	91.0
40–49	167	1,111	11.7	14	119.7
50–59	44	337	8.2	5	61.0
60 & Ov.	14	99	4.4	5	113.5
Total.....	648	4,541	41.8	41	98.0

If we look at the first column representing the mortality of each class in its entirety, we will see that the Mutual Life has not suffered by reason of a tubercular family history uncomplicated by other impairments. But we failed to take into account that a short-lived family history is an impairment by itself and when associated with tuberculosis, the combination is distinctly bad, as shown by the mortalities in the column headed E. A long-lived family history is able to neutralize considerable tubercular taint as shown by the mortalities in A, B, and C. These are uniformly good with the exception of 52 C, but this as well as 52 B and 55 A showed too few deaths to be of much significance. Column D shows that an average family longevity secures an average mortality, for its mortality generally agrees with that of the entire class. Column X, representing an indeterminate family longevity,

TABLE 30
M. I. No. 51. Symbol E. Entire

Ages at Entry	Number of Entrants	Exposures	Deaths		Ratio
			Expected	Actual	
All Ages...	408	2,524	21.6	32	148.2
Lighter Weights—Build Groups 6, 7, 8, 9					
15–19	4	18	.1	1	1000.0
20–29	48	258	1.2	2	166.6
30–39	66	401	2.2	7	318.5
40–49	42	285	3.0	4	133.2
50–59	12	77	1.5	.....	.....
60 & Ov.	2	8	.3	.....	.....
Total.....	174	1,047	8.3	14	168.7
Heavier Weights—Build Groups 0, 1, 2, 3, 4, 5					
15–19	.....	.....	.....	.....	.....
20–29	32	186	.9	1	111.0
30–39	102	701	4.1	7	170.8
40–49	69	405	4.3	4	93.2
50–59	27	164	3.2	5	156.5
60 & Ov.	4	21	1.0	1	100.0
Total.....	234	1,477	13.5	18	133.3

ISSUE OF 1885 TO 1908—EXPOSURE OF 1885 TO 1909

TABLE 31
M. I. No. 54. Both Parents Dead of Tuberculosis
All Symbols and All Builds

Ages at Entry	Number of Entrants	Exposures	Deaths		Ratio
			Expected	Actual	
15–19	3	13	.....	.....	.....
20–29	72	291	1.1	2	181.8
30–39	84	437	2.2	3	136.5
40–49	53	293	3.0	3	100.0
50–59	17	103	2.4	5	208.5
60 & Ov.	5	50	4.1	.....	.....
Total.....	234	1,187	12.8	13	101.5

TABLE 32
M. I. No. 54. Symbol E. Entire

Ages at Entry	Number of Entrants	Exposures	Deaths		Ratio
			Expected	Actual	
15–19	3	13	.1	.....	.....
20–29	64	268	1.2	2	166.0
30–39	70	368	1.9	2	105.2
40–49	33	187	2.0	2	100.0
50–59	13	90	2.2	5	227.5
60 & Ov.	2	14	.8	.....	.....
Total.....	185	940	8.2	11	134.2

shows the marked variations expected with such unhomogeneous material.

The presence of tuberculosis in the family history of an applicant always calls for thorough scrutiny and careful selection. In the lesser grades of tubercular taint, this perhaps amounts to nearly as much as was used in securing our untainted family history groups where we eliminated all medical impairments, marked overweights and underweights. In the higher grades of tubercular taint even more care is used and only those risks are accepted who are otherwise excellent. These facts must be borne in mind when we compare these different mortalities with each other, or with the untainted classes. In fact, this extra care in selection affects every deduction which we wish to make in the study of tubercular family history.

We are now in a position to make some general deductions from our studies of tubercular family history.

1. *Age.*—It is evident that a tubercular family history has its maximum effect in the ages prior to 30. Its influence thence diminishes rapidly and after 40 it can be practically disregarded, unless the longevity of the family as a whole is also impaired.

TABLE 33

Issues of 1885 to 1908. Exposures of 1885 to 1909. Deaths from Specified and Classified Diseases

Cause of Death	Total Domestic Males		M. I. No. 51 Entire		M. I. No. 52 Entire		M. I. No. 53 Entire		M. I. No. 55 Entire	
	Deaths	%	Deaths	%	Deaths	%	Deaths	%	Deaths	%
Typhoid Fever	2,496	6.7	12	7.1	8	3.9	67	5.6	57	6.4
Malarial Fever	530	1.4	.....	.....	1	.5	11	.9	10	1.1
Influenza	503	1.3	2	1.2	1	.5	20	1.7	7	.8
Total General Diseases A	4,139	11.1	14	8.2	10	4.9	118	9.9	80	9.0
Tuberculosis	4,910	13.1	43	25.3	34	16.6	219	18.4	232	26.0
Cancer	1,818	4.9	6	3.5	16	7.8	52	4.4	38	4.3
Diabetes	542	1.4	2	1.2	2	1.0	10	.8	6	.7
Alcoholism	264	.7	1	.6	1	.5	6	.5	2	.2
Total General Diseases B	8,475	22.6	55	32.3	66	32.2	316	26.6	306	34.3
(Apoplexy, Paralysis and Softening of the Brain)	3,054	8.2	12	7.1	25	12.2	123	10.4	60	6.7
General Paresis of Insane	417	1.1	3	1.8	5	2.4	11	.9	9	1.0
Insanity	279	.7	1	.6	1	.5	8	.7	7	.8
Total Nervous Diseases	4,920	13.1	21	12.3	33	16.1	170	14.3	110	12.3
Heart Disease	2,854	7.6	14	8.2	23	11.2	105	8.9	52	5.8
Angina Pectoris	564	1.5	2	1.2	5	2.4	14	1.2	7	.8
Arterio-Sclerosis	290	.8	.....	.....	4	2.0	11	.9	5	.6
Total Circulatory Diseases	4,041	10.8	18	10.6	33	16.1	139	11.7	70	7.8
Pneumonia	3,137	8.4	13	7.6	14	6.8	94	7.9	80	9.0
Total Respiratory Diseases	3,787	10.1	17	10.0	15	7.3	116	9.8	93	10.4
Diseases of Liver and Gall Bladder	1,089	2.9	3	1.8	1	.5	24	2.0	18	2.0
Appendicitis and Peritonitis	1,220	3.2	5	2.9	4	2.0	36	3.0	21	2.4
Total Digestive Diseases	3,565	9.5	15	8.8	12	5.9	96	8.1	65	7.3
Bright's Disease	2,636	7.0	14	8.2	16	7.8	90	7.6	52	5.8
Total Genitourinary Diseases	3,036	8.1	14	8.2	19	9.3	101	8.5	57	6.4
Suicides	1,381	3.7	6	3.5	4	2.0	36	3.0	32	3.6
Casualties	3,136	8.4	8	4.7	9	4.4	74	6.2	63	7.1
Total Violent Causes	4,517	12.1	14	8.2	13	6.3	110	9.3	95	10.6
Grand Total	37,352	.....	170	.....	205	.....	1,187	.....	893	.....

ISSUE OF 1885 TO 1908. EXPPOSURE OF 1885 TO 1909

TABLE 34

M. I. No. 51. Life Policies

Ages at Entry	Number of Entrants	Exposures	Deaths		Ratio
			Expected	Actual	
15–19	2	8	....	....	.....
20–29	31	165	.8	2	250.0
30–39	122	822	5.2	7	134.4
40–49	186	1,143	12.1	14	115.6
50–59	101	641	14.1	11	80.0
60 & Ov.	25	140	6.1	7	114.8
Total	467	2,919	38.3	41	107.0

TABLE 35

M. I. No. 51. Life Limited Payment Policies

Ages at Entry	Number of Entrants	Exposures	Deaths		Ratio
			Expected	Actual	
15–19	5	20	.1	....	.....
20–29	211	1,410	6.8	11	161.7
30–39	360	2,[illegible]	17.7	18	101.7
40–49	212	1,517	16.2	20	123.4
50–59	59	472	11.5	4	34.8
60 & Ov.	7	49	2.3	2	87.0
Total	854	6,310	54.6	55	100.7

TABLE 36

M. I. No. 51. Endowment Policies

Ages at Entry	Number of Entrants	Exposures	Deaths		Ratio
			Expected	Actual	
15–19	26	109	.5	2	400.0
20–29	364	2,087	9.7	18	185.4
30–39	440	2,878	16.6	27	162.5
40–49	236	1,603	16.4	18	109.8
50–59	50	350	6.9	6	87.0
60 & Ov.	6	32	1.4	3	214.2
Total	1,122	7,059	51.5	74	143.6

ISSUE OF 1885 TO 1908—EXPOSURE OF 1885 TO 1909

M. I. No. 56. Apoplexy or Paralysis in Family Record Two or More Cases

TABLE 37

All Symbols and All Builds

Ages at Entry	Number of Entrants	Exposures	Deaths		Ratio
			Expected	Actual	
15–19	8	46	.2	....	.....
20–29	74	359	1.7	2	117.6
30–39	256	1,841	11.1	13	117.1
40–49	280	1,637	16.5	26	157.6
50–59	174	954	20.3	25	123.3
60 & Ov.	52	331	18.7	19	101.7
Total	844	5,168	68.5	85	124.1

2. *Weight.*—A tubercular family history is neutralized to some degree in the ages below 30 by a weight which is above the average. Between 30 and 40 the effect of this is less pronounced. After 40 the overweight seems to disregard the tubercular element entirely and unless much care is exercised in selection, it will increase the mortality beyond the normal.

3. *Amount of Taint.*—In a general way it may be said that the larger the number of cases of tuberculosis in the family the more apt the mortality is to rise. This general statement, however, is itself influenced by the longevity of the family as a whole. If that is good, we may expect good results even though the amount of tuberculosis in the family is large. If the longevity is average, we may expect nearly average results, especially if we have used care in regard to weight. If the longevity is poor and the family short-lived, we will get poor or bad results, if there is more than one case of tuberculosis in the family.

4. *Relationship.*—It is natural to suppose that a tubercular parent would have more influence than a tubercular brother or sister in affecting the long-

TABLE 38
M. I. No. 56. Symbol X. Entire

Ages at Entry	Number of Entrants	Exposures	Deaths		Ratio
			Expected	Actual	
15–19	2	2	.....	.....	.....
20–29	37	211	1.0	.....	.....
30–39	131	915	5.4	5	92.5
40–49	110	596	5.8	8	137.6
50–59	53	251	5.6	8	143.2
60 & Ov.	16	95	6.0	5	83.5
Total.....	349	2,070	23.8	26	109.2

TABLE 39
M. I. No. 56. Symbol A. Entire

Ages at Entry	Number of Entrants	Exposures	Deaths		Ratio
			Expected	Actual	
15–19	.....	.....	.....	.....	.....
20–29	2	2	.....	.....	.....
30–39	39	308	1.8	3	166.8
40–49	90	583	6.1	9	147.6
50–59	76	440	9.5	8	84.0
60 & Ov.	23	155	9.1	7	77.0
Total.....	230	1,488	26.5	27	101.8

TABLE 40
M. I. No. 56. Symbol D. Entire

Ages at Entry	Number of Entrants	Exposures	Deaths		Ratio
			Expected	Actual	
15–19	3	38	.2	.....	.....
20–29	17	73	.3	1	333.0
30–39	63	476	3.0	4	133.2
40–49	69	421	4.3	7	163.1
50–59	41	229	4.4	6	136.2
60 & Ov.	11	70	3.1	6	193.8
Total.....	204	1,307	15.3	24	157.0

TABLE 41
M. I. No. 56. Symbol E. Entire

Ages at Entry	Number of Entrants	Exposures	Deaths		Ratio
			Expected	Actual	
15–19	3	6	.....	.....	.....
20–29	18	73	.3	1	333.0
30–39	23	142	.8	1	125.0
40–49	11	37	.3	2	666.0
50–59	4	34	.7	3	429.0
60 & Ov.	2	11	.5	1	200.0
Total.....	61	303	2.6	8	308.0

evity. Table J does not demonstrate this; in fact, it rather leans the other way. Thus 55 is better than 53, and 51 D is better than 52 D. The problem is complicated, however, by the fact that a history of parental tuberculosis undoubtedly called for more care in selection than one of fraternal tuberculosis. After making all allowance for this factor, it is fair to assume that a tubercular brother or sister is as influential in affecting mortality as a tubecular parent.

5. *Heredity and Infection.* These two factors cannot be separated in this study and the effect of environment also is mingled with them. Whether tuberculosis itself is inherited or only a weakness of constitution is a question which has been extensively debated. We are told that 50 per cent. to 90 per cent. of us have tuberculosis at some time in our lives. As only 12 per cent. to 20 per cent. die of it, the vast majority of those infected recover without sensible impairment of health. Nevertheless, the fact that a tubercular family history predisposes to tuberculosis, either by inheritance, infection, or environment, is well shown in Table 33 giving the causes of death.

In the first column have been put the causes of death among all the men insured in the United States and Canada during the same time in the Mutual Life. Classes 49, 50, and 54 have been omitted, for the deaths were too few to justify any conclusions.

The percentage of tuberculosis as a cause of death among all men was 13, but where they have a tubercular family history it ranges from 26 per cent. in Class 55 to 17 per cent. in Class 52.

6. *Kind of Insurance.*—It is well known that endowment policies regularly give a lower mortality than other kinds of insurance. It has been inferred that this would hold true even if there was an impairment present, provided a similar impairment was found in the other kinds of policies. The idea was that the self-selection effected by the applicant when he paid the higher endowment premium was potent even though the endowment was not originally applied for. So far as a tubercular family history is concerned, this idea is a mistake. M. I. Class 51—one parent and a brother or sister dead of tuberculosis—contained 45 per cent. of endowment policies. As our average issues only contain about 20 per cent. it is probable that a good many of these were not originally applied for. Tables 34, 35, and 36 show the experience in them and also the life policies of this same class.

The mortality in the life policies is only 107 per cent., in the limited life policies 101 per cent., and in the endowment policies 144 per cent. While the number of deaths is small, it seems large enough to justify the positive conclusion that the offer of an endowment policy does not of itself improve the mortality due to a tubercular family history, and this is particularly true of the ages below 40.

7. *Family Longevity.*—If the family is long-lived in general, a tubercular taint has but little effect on the mortality. This holds true in all classes where we obtained a family history that was long-lived, no matter how much the amount of tubercular taint.

If the family is of average longevity, a tubercular taint has considerable effect. If the family is short-lived, the mortality is high whether the parental deaths be due to tuberculosis or some other disease.

The importance of family longevity is also shown by Medical Impairment Class 56, the definition of which is "apoplexy or paralysis in the family record, two or more cases." Tables 37, 38, 39, 40, and 41 show the mortality experience of the whole class and of symbols X, A, D, and E.

1. Two or more cases of apoplexy or paralysis in the family seems to be a distinct impairment, as indicated by the mortality of 124 per cent. in the entire class.

2. Symbol X, an indeterminate family history, shows a mortality of 109 per cent.

3. Symbol A, a long-lived family history, shows a mortality of 102 per cent. Although this is reasonably good, it is fifteen points worse than symbol A gives in our untainted family histories.

4. When associated with a short-lived family history, the mortality is 300 per cent. The deaths, however, are so few that no value would be attached to this result if it were not for the fact that it is in accordance with our previous conclusions regarding the influence of family history, though the percentage is exaggerated.

Thinking that weight might have some effect on the mortality the cases were divided into the lighter weights, including build-groups 6, 7, 8, and 9, and the heavier weights, including 0, 1, 2, 3, 4, and 5.

The former showed a mortality of 123 per cent. and the latter one of 125 per cent. These results are practically identical and I hesitate to accept them as conclusive, for we expect to find the combination of apoplexy in the family history and heavy weight to make for a higher mortality.

Heredity, infection, or environment seems to have a decided effect in determining the mode of exit for 21 per cent. of the deaths were due to apoplexy or paralysis, as compared with 8 per cent. among all men. Curiously only two deaths, less than 3 per cent., occurred from tuberculosis.

REFERENCES.

1. Proceedings of the Association of Life Insurance Medical Directors, vol. 1907-1912, p. 48.
2. Proceedings of the Association of Life Insurance Medical Directors, vol. 1907-1912, p. 203.
3. Proceedings of the Association of Life Insurance Medical Directors, vol. 1907-1912, p. 339.
4. "The Influence of Overweight and Underweight on Vitality." MEDICAL RECORD, September 5, 1908.
5. Proceedings of the Association of Life Insurance Medical Directors, vol. 1907-1912, p. 320 *et seq.*
6. Supplement to the Sixty-fifth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England and Wales, Part I, p. 13.
7. Statistical Abstract of the United States, Department of Commerce and Labor, 1910.
8. Bulletin 109, Bureau of Census, p. 73.
9. Transactions of the Actuarial Society of America, vol. IV, p. 18.
10. Proceedings of the Association of Life Insurance Medical Directors, vol. 1907-1912, p. 215-A.

PROGRESSIVE CURVATURE OF THE RADIUS (MADELUNG'S DEFORMITY) CORRECTED BY OSTEOTOMY.*

By HENRY LING TAYLOR, M.D.,

NEW YORK.

PROFESSOR OF ORTHOPEDIC SURGERY, POST-GRADUATE MEDICAL SCHOOL; ASSISTANT ORTHOPEDIC SURGEON, HOSPITAL FOR RUPTURED AND CRIPPLED.

In the year 1878 Madelung, a German surgeon, described very clearly a deformity at the wrist, which he called spontaneous subluxation of the hand forward. Since then this affection has been recognized and described by numerous authors and the subject has been admirably summarized by Stetten, who gives a critical résumé of the literature with 91 references and short histories of the 64

Fig. 1—Case I, 15 months before operation.

cases reported up to 1909. Briefly the literature shows that the deformity comes on slowly, without any clearly assignable cause, at the beginning of puberty or just before. Of the 64 collected cases

Fig. 2—Case I, October 27, 1910.

55 were females, 8 males, and in one the sex was not stated. In 43 the affection was bilateral, in 20 unilateral, and in one uncertain. The deformity

Fig. 3—Case I, February 3, 1912. Lateral view of right, antero-posterior of left. Before operation.

consisted in 62 cases in a displacement of the hand forward, with marked projection of the ulna backward. Skiagrams show that the radius is bowed with the concavity toward the plantar aspect, car-

*Read at the First District Branch of the Medical Society of the State of New York, Poughkeepsie, N. Y., October 4, 1912.

rying the carpus and hand with it; the ulna, however, does not follow, but becomes separated from the carpus and projects strongly backward. The shaft of the radius is often bowed laterally away

Fig. 4—Case I after operations.

from the shaft of the ulna. The palmar deviation of the radius may be throughout a good part of the shaft or may be confined to the lower end. In two cases reported by Kirmisson and Stetten, the radius deviated dorsally and the wrist deformity was the reverse of the one described.

Local pain, tenderness, weakness, stiffness, and disability are usually associated with this affection, varying in intensity in different individuals and at different stages, but the hands may usually be used in moderation, and under such conditions pain is not a striking feature. The affection runs through its various stages and after a few years becomes quiescent; the deformity and some disability remain.

The causation is still obscure, but it seems to be associated with irregularity of growth at the lower end of the radius, and with the physiological softness and laxity of the tissues at puberty. It is at times a familial affection and abortive forms may also be found in such families. Some writers have considered the affection congenital, which it quite certainly is not, but a congenital dislocation of the lower end of the ulna backward without bowing of the radius has been described by Fosdick Jones. Most of the authors have little to suggest in the way of treatment, but Duplay in 1885 proposed

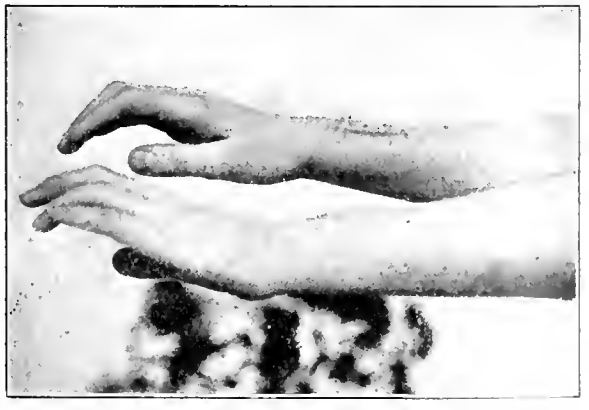


Fig. 5—Case I after operations.

linear osteotomy of the lower end of the radius, and reports two successful results. Delbet also reports a case. Paulson in 1905 proposed oblique osteotomy of the radius, and reports two cases, one successful. He remarks that the operation is hardly applicable to the cases where the bend is low down. Successful cases have been since reported by Putti and Lénormant. In addition Peckham dissected out fibrous tissue below the lower end of the ulna and forced the latter back into position. The literature as tabulated by Stetten, therefore, gives us seven osteotomies, five successful, and Peckham's operation as the operative experience. The references to the affection in the textbooks are few, short and indefinite. The writer has seen several cases besides the two which follow, but unfortunately their notes are not available.

Case I.—*Progressive Curvature of Both Radii—Cuneiform Osteotomy—Cure.*—The first case to be carefully studied by the writer was Helen R., first seen at the Hospital for the Ruptured and Crippled, October, 1910, and then a healthy girl of thirteen.

Fig. 6—Case I, March 11, 1912, right operated upon February 14, 1912. Left not operated upon.

There were four brothers and three sisters, and none of the family had ever had any weakness or deformity of the wrist. She was a school girl and had not done hard work. Our pediatric expert, Dr. Walter Strang, pronounced the patient free from signs of previous rickets. She had had diphtheria at eight and typhoid at nine. At eleven, after using a hatchet she noticed some pain about the right wrist. She has had this pain in both wrists at times since, especially after working, but more in the right. The hands have gradually become dropped and displaced forward, and the ulna very prominent dorsally. For six months or more this deformity has been marked and the wrists have been weak and somewhat stiff. The right wrist can be extended barely to a straight line with the forearm; when this is done the superficial wrist flexors are very tense. The left hand may be extended somewhat further. The right hand is fixed in semipronation, no rotation being possible; on the left

side pronation and supination are limited. The motion at the elbow is free, but the carrying angle is greater than is usual. Radiograms showed the lower end of the radius deviated forward and

Right Left.

Fig. 7—Case I, April 26, 1912. Right operated upon February 14, 1912. Left operated upon March 27, 1912.

turned somewhat toward the ulna; the part of the end of each radius adjacent to the ulna was rarified; the shaft of each radius was also bowed away from the shaft of the ulna. It will be noticed that pain was not a prominent feature, and while stiffness and deformity were pronounced the disability was not extreme; the hands could still be used for many things. It was believed that the deformity at the wrists was due to the sharp deviation of the lower end of the radius and it was decided after more than a year's observation to do a cuneiform osteotomy, base dorsal, at the lower end of the radius, as proposed by Stetten, to correct this. During the interval of study the condition of the patient had not changed appreciably.

Fig. 8—Case II.

February 12, 1912.—The right hand could be passively extended to straight and flexed to 45°; there was no rotation. The left hand could be passively extended to 45° beyond straight, flexed 70°, rotation somewhat limited, active movements several degree less. Pressure above wrist between the ulna and radius was painful; forced flexion was painful on the right side.

Fig. 9—Case II.

February 14, 1912.—A cuneiform osteotomy with a dorsal base of 3/8 inch was done on the right side and the lower fragment with the carpus and hand bent sharply upward at the point of division. The forearm and hand were put up in about 30° of extension. The simple operation was done through a 2-inch incision at the radio-dorsal border of the forearm, 1 inch above the wrist joint. The correction was effected without difficulty and the hand and ulna at once went into place as the distal fragment, with the carpus and hand, was extended. In six days the patient was discharged from the hospital, there having been no reaction, and two days later the plaster splint was split down at the sides, the wound inspected and found to be healed; motion at the wrist was found to be increased.

Fig. 10—Case II, May 8, 1912.

On March 27 the same operation was done on the left radius with the same result.

On May 3, 1912, there was about 35° flexion, about 45° extension, and about one-half the normal amount of rotation. On the left side there was 45° of flexion and also of extension and normal rotation. The patient has done well to date, but she has been advised to apply the palmar splints at night to keep the wrists extended, as there appeared to be a slight tendency to recontraction of the flexors. There was full and free use of the fingers. The patient now is free from deformity, has no pain, and has excellent use of the hands; motion has increased somewhat since the last note.

CASE II.—*Bilateral Progressive Curvature of the Radii.*—Elsie B., a healthy girl of fifteen, was seen in May, 1912, at the Hospital for the Ruptured and Crippled. She had been a healthy baby, breast fed, but had an attack of pneumonia in infancy

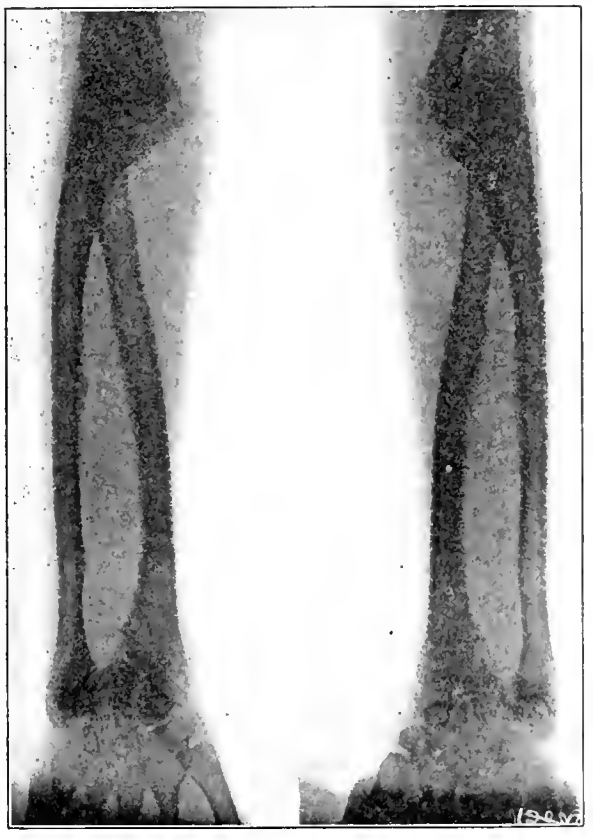


Fig. 11.—Case II, May 8, 1912.

and at six years; she had also had measles, whooping cough, and mumps in childhood, and bronchitis a year ago. She was pronounced free from signs of previous rickets by Dr. Strang. There were no cases of wrist deformity or weakness in the family. She goes to school and has done no hard work. She noticed the prominence of the ulnæ on the back of the wrists about two years ago, and this has increased since. She had some pain over the ulnar prominences, but not severe or continuous, principally in the right wrist. The trouble has grown worse for the last few months, and the wrists have felt weak. Has apparent displacement of the hands forward, and marked dorsal prominence of the lower ends of the ulnæ. Motion is nearly normal in all directions. She extends both wrists to 60 beyond straight, and flexes to 90°; pronation and supination normal. She has a slight scoliosis to the left, but complains of no other troubles. This patient has only slight pain, and disability, and almost no stiffness. The skiagrams show a forward deviation of the radius at its lower end, caused by a curvature of the lower half of the shaft, which is also curved away from the ulna. There is also some obliquity of the radiocarpal articulation of the epiphyseal line of the radius, and some decreased density at the part nearest the ulna. Osteotomy was advised, but has not been accepted.

These histories give a fair idea of the symptomatology of these cases, and the skiagrams of the pathological anatomy. The first case shows a sharp bend at the lower end of the radius blocking motion; the second shows a more gradual and diffuse curve. There seems to be some disturbance of the area of active ossification adjacent to the distal epiphysis of the radius, where growth is most active, and the deformity seems to be the result of asymmetrical growth. The cause and nature of the process are unknown, but there is nothing to connect it with early rickets, and late rickets has never been more than a doubtful hypothesis. The process may have to do with an exaggeration of the physiological bone softening and tissue laxity of puberty, and may be analogous to adolescent coxa vara, bow leg, knock knee, and flat foot. The affection seems to go through an active stage and then to become quiescent. The accrued deformities and the disabilities determined by these are, so far as we know, permanent, unless corrected by operation. As we have seen, the deformity is easily corrected by a cuneiform or linear osteotomy at the lower end of the radius. Once the characteristics of the deformity are borne in mind the diagnosis is easy, though there are several deformities with which it may be confused, such as those due to an old fracture or dislocation at or near the wrist, and congenital dislocation of the ulna backward without curvature of the radius as described by Fosdick Jones. The history and skiagraphic examination will serve to separate such cases from those of progressive curvature of the radius.

The two cases related in this paper were shown at the Hospital for the Ruptured and Crippled to the members of the American Orthopedic Association May 29, 1912, when Dr. Charles H. Jaeger also showed a girl of 17 with a similar bilateral deformity of the wrists, with radiograms showing radial curvature. The affection is probably not so rare as the small number of cases reported would indicate and as it is easily diagnosed, it is to be hoped that increasing numbers will be recognized and relieved by proper treatment. It is suggested that the affection be known as progressive or spontaneous curvature of the radius.

LITERATURE.

Delbet: Leçons de Clinique Chirurgicale, Paris, 1899.
Duplay: *Gazette des hôpitaux.*
Archives générales de médicine, 1885.
Jones, S. F.: *American Journal of Orthopedic Surgery,* November, 1911.
Kirmisson: Les difformités acquises de l'appareil locomoteur, etc. Paris, 1902.
Madelung: Verhandlung der deutschen Gesellshaft für Chirurgie, 1878.
Peckham: *American Journal of Orthopedic Surgery,* April, 1907.
Poulsen: Archiv. für Klinische Chirurgie, 1905.
Putti: Archives internationales de chirurgie, 1906.
Stetten: Surgery, Gynecology, and Obstetrics, January, 1909.
Stokes: Annals of Surgery, August, 1910.
The complete literature may be found in Stetten's and Jones' papers.

125 WEST FIFTY-EIGHTH STREET.

SOME CLINICAL OBSERVATIONS IN THREE CASES OF HUNTINGTON'S CHOREA.

By MAX A. BAHR, M.D.,

INDIANAPOLIS.

CLINICAL PSYCHIATER, CENTRAL INDIANA HOSPITAL FOR THE INSANE.

CASE I.—Female, age forty-six years. Mother, two aunts on mother's side, and one cousin were choreic. Patient had eleven children in thirteen years; four of the children are exceedingly nervous and one of them is described as having "jerky spells." Mother of patient was also insane. Father died of cancer of the omentum. One uncle insane.

Patient had always been in fairly good health until the age of thirty-five years, when she began to have "peculiar twitchings." These movements were first noted in the upper extremities and it was fully two years before they became general as at the present

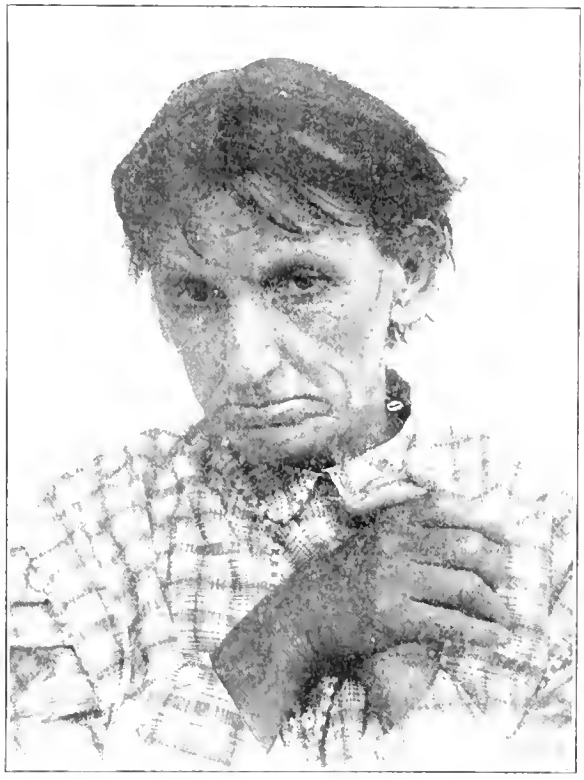


Fig. 1.—Showing the facial grimacing and contortion, the patient attempting to control the involuntary and incoordinate movements of her arms by clasping the hands.

time. The lower extremities apparently became involved last. The patient's mental change has been noted for about two years. She became aware of her heritage and was consequently rather seclusive with pronounced suicidal tendencies. She also became exceedingly suspicious, vulgar, and profane. Later she developed distinct paranoid ideas, believing that even members of her family were working and plotting against her.

The patient presents on examination involuntary muscular movements of large range and whole groups of muscles are set into action momentarily. This gives the patient the appearance of posturing and grimacing from eccentricity, and when the lower extremities are set in action there is a dancing movement. The queer contortions of the face and head and incoordinate poses of the upper extremities will be noted in Fig. 1. Most of the muscles of the body appear to be simultaneously affected. In the speech there is noted an interrupted articulation which appears to be due to the altered muscular movements of the buccal cavity, pharynx, and respiratory muscles. Disturbance in sensation is negative, with the exception of a slight decrease in the sensibility to pain. The special senses are unaltered. Incoordination is very marked; for instance, when the patient is asked to bring the forefinger to the nose, she attempts to do so in a series of zigzags and fails entirely. It is absolutely impossible for her to walk in a straight line. All movements subside during sleep.

Although the chorea has existed for nine years, the amount of mental impairment is very slight and the paranoid ideas above referred to, as mentioned in commitment record, we believe to have been greatly exaggerated. There is only a very mild degree of dementia. There is considerable depression of spirits but not in the sense of a melancholia. There have been no suicidal inclinations manifested during the woman's stay in the institution. The patient at times becomes very irritable. No hallucinations could be ascertained.

CASE II.—Female, age forty-two years. One aunt had chorea which appeared at the age of thirty-four yars. Otherwise no history of the disease could be ascertained. Mother died of some complications following measles. Grandfather was insane. Father was killed while in a state of intoxication. Her mother was considered somewhat "nervous." There was never anything unusual reported as to her birth which would lead one to infer that there could have been anything abnormal.

Patient as a child was always considered rather weakly, although she never had any real illness. Attended school but a few short terms and has had practically but very little education. Can read and write, but otherwise is very ignorant. She worked about in families and on the farm where she was brought up until she was married at the age of twenty-eight. Her husband was a very heavy drinker.

After her first husband's death the patient remarried, but this marriage proved to be a failure, as she states that "this man married me in order to obtain possession of my property." After he learned that he could not do so he left her and she has not heard from him for several years.

No history of alcoholism on the part of the patient. Said that she had always had a lot of friends and had always gotten along nicely with people until her present trouble which had dated back about five years. She said that her entire trouble was merely the result of her son trying to obtain possession of her property. That he had resorted to every means to do so. This son was a drinker and frequently became intoxicated and abused her. Patient had had three miscarriages without apparent cause.

Said that her son became ill last spring and that he had a nurse stay with him during his illness who afterward lived illegitimately with him in his mother's home. "This whole affair was merely to crowd me out in the streets and take possession of my property." "Did they ever try to poison you or in any way get you out of the way?" "Yes, I became very much afraid of this woman, because she has threatened to get me out of the way. Later I refused to eat in my own house, as I feared that there might be poison in the food."

Patient on entering the room appeared rather cheerful and said that she was glad to come over for an examination. No hallucinations could be ascertained at this time. Said that she thought that they might have tried to put poison in her food at

home, but here everybody was her friend and that she had no fear of anything of that nature.

Emotionalism has always been about normal since the patient has been in the institution. At times she becomes "quite blue" to think of the way she had been treated, but she soon forgets about it. No marked dementia could be ascertained. The patient answered all questions within her educational sphere correctly. Of course, as stated above, the patient is very ignorant and questions had to be very limited. She recognized her surroundings and knew everything that was going on about her. No disturbance in the attention, no delusions of any consequence could be ascertained. There was a slight element of ideas of persecution, but there appeared to be considerable basis for her belief as some of the stories she related were true. Patient has been well behaved on the ward and appeared to be well satisfied. Said that she has been better treated here than at any time in her life.

On physical examination the patient presents distinct choreic movements which have been increasing in severity in the past five years. There is sometimes twitching of the entire body. Movements assume a jerky character and appear at times intermittent. Tendon reflexes are increased. Although the finer movements are at times executed with difficulty, the coarser ones are fairly well carried out. Slight tremors of the outstretched hand are particularly observed if the patient becomes slightly excited. A peculiar facial movement produced by a contraction of the frontalis muscle and drawing backward of the angle of the mouth, producing a peculiar grimace, is noticed. These involuntary contractions, which modify the facial expression, cause a hand to start, a finger to move, or bring about a movement of the feet in deviation from an intended direction. The gait becomes progressively erratic and uncertain and resembles that of an intoxicated person, with the addition of gesticulatory movements of the arms and of facial contortions. All these movements subside during sleep.

During conversation the movements appear to be more extensive. Incoordination is very marked, as the patient shows decided swaying when standing with heels together, and especially with eyes closed she is very unsteady. The general muscular strength is unimpaired.

The speech is rather thick, like the speech of an intoxicated person. Many words are very indistinctly articulated. There is noted a characteristic absence of fatigue. Marked tremor is noted in the writing. Pupils regular, equal and react to light and accommodation. Beginning cataract of the left eye. Patient presents a slight asymmetrical development of the face and head.

Case III.—Female, age thirty-five, single, Fig. 2. Four cousins committed suicide. Mother and one sister of patient choreic.

Little could be learned as to the early life of the patient excepting that given by the patient herself. She was a dressmaker and had been working all day and part of the night for some time when the first manifestations of chorea, at the age of thirty-one, were noted. These choreic movements at first were very mild, but gradually became more severe and intense to the extent of the most curious movements of the face and whole body. The ability to walk and use the arms in eating and dressing was retained for a long time, but every action was accompanied by extremely conspicuous associated movements and twitchings of the whole body. When she is in a sitting posture the head is jerked backward and the arms remain in motion, but the lower extremities are comparatively quiet. The speech is thick and hesitating. The sensations are unaffected. The reflexes are very active. Pupils are unaffected.

Apart from the choreic movements, one detects on superficial examination very little disturbance mentally. The patient is somewhat irritable and there is a mild degree of depression. She is very seclusive and remains isolated in her room the entire day. There is some mental deterioration which is especially noted in the form of forgetfulness, superficial range of thought, a partial but not complete loss of orientation, and a loss of early school knowledge. Patient has some slight insight into her condition and is aware of her unfortunate heritage. The four cousins, above mentioned, are supposed

Fig. 2.—Showing the effort made by the patient to control the movements, and the characteristic facies with contortion and grimacing. The fingers of the right hand assumed in awkward and incoordinate position, being thrown out of focus by the uncontrollable movements.

to have committed suicide because they dreaded the disease, which they appeared to realize was hereditary. The patient has never shown any suicidal tendencies. All movements subside during sleep. Patient at times has become so incoordinate that she falls to the floor.

In conclusion it will be noted that heredity appears to be a constant factor in Huntington's chorea, that all three cases were women, and that the disease developed in all three cases after the thirtieth year of age and before the fortieth year of age. There appears to be a decided tendency toward paranoid ideas.

A defective hereditary endowment is noted in these cases. Two cases presented psychoses in the ancestry aside from the chorea. The occurrence of the disease appears to be kept in families as a dark secret, as is evidenced by many frequent and contradictory statements made by members of the family in regard to its presence.

This subject has a special sociological bearing in the question of marriage of such individuals whose progeny will most assuredly show this morbid inheritance.

I am indebted to Dr. O. Evermann for the accompanying photographs.

TWO CASES OF SEVENTH NERVE PARALYSIS SECONDARY TO ARTIFICIAL CONGESTION.

By B. ROSENBLUTH,

NEW YORK.

The purpose of reporting the two subjoined unique cases is to explain the mechanism of the production of the classical Bell's paralysis. Of all the theories of the pathology of this form of paralysis, that of autopressure of the nerve at its exit, and more rarely in its canal, both of which are bony, has always appealed to the writer and has guided his therapeusis. The occurrence of the palsy from acute congestion goes a long way to prove the thesis.

Case I. A. S., male, aged 55 years, a Russian-Hebrew, tailor by occupation; has been married 35 years, had 9 children, 7 of whom are living. Has been a sufferer with right hemicrania for many years, and is always constipated. This represents all the illness that he ever had in his life.

A few days ago he had a very severe attack of hemicrania, and his physician advised the application of a mustard plaster over the exposed portion of the affected side of the head. The plaster was placed behind and below the ear. Severe congestion and slight vesicat on were soon produced.

The patient noticed that when the burning was at its height he felt "queer" about the mouth, and a little while later he found that he could not close his eye on the right side. Five days later he presented himself at my office with a full-fledged peripheral facial palsy, of the right side of the face, from an affection of the seventh nerve which apparently had not involved it any farther than at the stylomastoid foramen.

The entire right side of the face was immobile, so that the forehead could not be wrinkled, the eye could not be closed, the palpebral fissure was widened, the right side of the mouth drooped and allowed saliva to escape from it at this point; the teeth at the right side of the mouth could not be exposed voluntarily, and on laughing the mouth was drawn to the left by the overaction of the nonpalsied muscles of the left side. There was no sensory disturbance of the ear, face, pharynx, or tongue. The special functions of the ear and of the tongue were normal. There was no subjective or objective vertigo. The eye did not show nystagmus. As very frequently occurs in the catarrhal form of the affection, the stimulating wisp of cotton used for testing touch on the face felt larger on the affected side.

Electrical examination showed diminution of irritability to galvanism and faradism; RD developed a week later. The area over which the plaster had been applied was evident for a long time—over a week after being first seen.

The man remained under treatment for over a year with partial improvement. The palpebral fissure became narrowed, a contracture developed at the nasolabial fold, and there was a slight twitching of the zygomatic group of muscles. For the last two years he has frequently shown himself at my service at the Mt. Sinai Hospital Dispensary (No. 8, series 1910) with the condition last described. The whole period of observation has been over three years. I last saw him at the dispensary in May, 1912.

Case II. N. F. (Beth Israel Hospital Dispensary, No. 649), male, aged 23 years, Russian-Hebrew, 20 years in the United States, single; occupation, student. Has had left hemicrania at varying intervals. Two weeks ago during an attack of pain in his head he applied a mustard plaster over the left mastoid, and below the ear, and went to bed with it. He awoke next morning with a bad mustard burn about the left aural region, and on investigating this in the mirror found that the left eye could not be closed, and the familiar drooping of the mouth with practically all of the subjective and objective symptoms detailed in case No. I were present. Dr. M. R. Walter kindly made an otological examination and reported negative findings from a pathological point of view. Electrically, there was a complete reaction of degeneration, but it reacted to a strong faradic current. The end results were unsatisfactory, although fortunately he did not develop a postparalytic twitch. On account of the early manifestation of such severe symptoms I have no hesitation in aligning this case with the first one, for I know that with the close attention and treatment that were accorded him he would have made a perfect recovery if he had had a catarrhal form of palsy.

The two cases are most uncommon, but instructive withal. There is no difficulty in tracing the neural damage to the induced congestion and hyperemia at a part of its course where the nerve compressed itself against the bony edge of the stylomastoid foramen. The artificial congestion was more severe and of longer duration than occurs in a simple refrigeratory paralysis, hence the greater severity of the neuritis.

Here we can see two facts, that there was a congestion and that there was a paralysis, the latter sequence being such that one cannot but bring forward the former as a factor in its production. Every one has seen induced congestion over the course of superficially placed nerve trunks, as, for example, the ulnaris, or the somewhat more deeply placed branches of the brachial plexus on the inner side of the arm, or even the popliteal, or the very superficial external popliteal (peroneal) nerves. Yet, still, paralysis is the exception, and considering the frequency of irritant application over these parts on account of joint and bone affections, it should be fairly common. These nerves are frequently the seat of neuritis, but seldom of bad palsies from their catarrhal inflammations. But we do see palsy of all these nerves from very slight pressure. So in the case of the facial nerve; it is frequently the seat of catarrhal neuritis due to transitory atmospheric changes in its vicinity, but the transitory congestion lasts long enough to cause the slight amount of autopressure against the bony walls of the Fallopian canal, and the bony edge of the stylomastoid foramen, causing a pressure paralysis.

That a narrow Fallopian canal, or a small stylomastoid foramen will help in its causation cannot be denied, but the infrequency of recurrence of Bell's palsy in the same individual and the rarity of this affection as a familiar disease should place these parts as of secondary or small importance as a

causative factor in the pathology of paralysis. In a very large experience with facial palsy, the last 150 cases of which I have carefully analyzed, there was but one recurrent case and one case occurring in the same family. So, to my mind, the problem of facial neuritis is the same as neuritis of any other nerve in the body.

With this point in view, I have for a few years, even before I had the opportunity of seeing the above described cases, been giving my facial cases ergot, with a view of vasomotor constriction. Of course, the vessels concerned are few and of but small calibre, but it seems to me more rational to use this than the usually prescribed sodium salicylate, which often causes tinnitus, showing congestion of the aural mucosa, in which the lining of the Fallopian canal is also involved (being but prolongations of the same mucous membrane) and thus add to the existing crowding of the already overfilled inelastic bony canal. When ergot is given during the first five days, that is, before there is a reaction of degeneration, one can always be sure that he will positively cure his case. The ergot must be the best, and given in large amounts. It has been the habit of the writer to give a teaspoonful every three hours for a period of five days. Of course, every other adjuvant of neurological practice is fully used.

1326 Madison Avenue.

INDICANURIA AND THE CHLORIDES.

By JOHN C. WARBRICK, M.A., M.D., M.S.,

CHICAGO, ILL.

Do the chlorides bear any relation to the amount of indican present in the urine? Does an increase in the amount of chlorides cause a corresponding increase in the amount of indican? Does the color of the urine bear any relation to the amount of indican present in the urine? In order to find out any definite facts bearing upon this matter a great many specimens of urine were carefully examined from time to time and any points relating thereto were noted. In each instance the amount of chlorides, phosphates, and sulphates were recorded along with the specific gravity and the color, and sometimes the acidity and the total solids. The amount of urine passed in twenty-four hours was sometimes noted as well. During the time the examinations were made no special diet of any kind was followed out at any time, but only the ordinary food was taken at each meal, then after every one an examination of the urine was made and the records were noted for comparison. About twenty-five specimens were singled out from more than two hundred others for certain reasons as having a more direct bearing on the matters in question, such as a high or low specific gravity, a high chloride index, or a high phosphate or sulphate index, while the relation of the amount of indican present in each instance was noted.

In about fifteen cases there were some particular points to notice in the relation of the amount of indican present, especially to the amount of chlorides, which in some of the examinations made was very high and far exceeded the normal daily maximum amount. In nearly every case out of the twenty-five urinary examinations made the chlorides were far beyond the normal daily minimum amount, one instance only being excepted. In every instance but two they ranged far beyond the maximum daily limit also. The presence of uric acid in its various forms was also noted and taken into consideration. The color of the urine in most of the cases was yellowish red and next reddish yellow, thus showing the tendency of urines to be high in color instead of being low. In these examinations the specific gravity of the urine reached as high as 1036, somewhat out of the ordinary, and would tend to give a suspicion of some organic disease being present which, however, was not the case. The two urines having the most indican present, the index at 20 in each case had the chlorides rather high, 28-434 in one instance, and 60-930 in the other. The specific gravity in the former was 1024, and in the latter was 1028. From the report of these twenty-five cases it will be seen just what amount of indican was found in each examination made along with a varying specific gravity and a different amount of chlorides. It will be seen that a good deal of indican may be present in the urine where the chlorides are high along with a high specific gravity at the same time. It will also be noted that with a high specific gravity and a high chloride index only a small amount of indican may be found. Again it may be pointed out that with a high specific gravity of urine, such as 1030, and with the chlorides not very high a good deal of indican may be found. With a low specific gravity, such as 1010, and also with a low chloride index, such as 15-232, under the maximum daily amount a good deal of indican may be present. In many instances no indican will be found, even when the chlorides are high and also when they are low. It would seem that indican is not so likely to be found where the specific gravity is low along with a small amount of chlorides, so it may be stated that the amount of indican present in the urine is in direct proportion to the amount of chlorides found, but as the chlorides seem to be governed mostly by various bodily conditions it may be the amount of indican is in direct relation to such conditions as diet, exercise, disease, the taking of plenty of liquid, etc.

Among some of the points to note in connection with the relation of the specific gravity to the amount of chlorides in the urine and the degree of indican present are the following: (1) A urine yellowish red with specific gravity 1028 and chlorides 35-542 had the indican figure at 10 while sarcinæ were present in it. (2) A urine yellowish red with a specific gravity higher at 1030 and the chlorides increased 40-620 had indican in half the amount of the previous one at 5. This urine contained uric acid in three colors. (3) A urine yellowish red with specific gravity 1026 and chlorides high, 45-697, registered indican at 10 and acidity 10, the chlorides being increased in this to more than the first, but the specific gravity less and indican the same. (4) A urine yellowish red with specific gravity 1026 and chlorides less than any of the preceding had the indican index at 10 and acidity 125. (5) A urine yellowish red with specific gravity 1028, chlorides 30-465, and total solids 84, registered the amount of indican at the small figure of 3. In this case 1300 c.c. of urine were passed in twenty-four hours, and this may account for the small amount of indican present, as the chlorides and specific gravity are fairly high. (6) A urine light yellow with specific gravity very low, 1002, and chlorides low, 10-155, had *no indican*. In this case 1600 c.c. of urine were passed during the day, which may account for the low specific gravity and the fact that no indican was present in the urine,

and the same reason may be given for the chlorides being low. (7) A urine reddish yellow, specific gravity 1018, chlorides 30-465, total solids 71.30, had *no indican*. Seventeen hundred c.c. of urine were passed during the twenty-four hours. In this case the specific gravity and amount of chlorides are greater than in the preceding, more so the latter, but still no indican was found. (8) A urine reddish yellow, specific gravity 1006, chlorides 14-217, and total solids 29.3, had *no indican*. Two thousand one hundred and twelve c.c. of urine were passed during the twenty-four hours, therefore the urine was fairly well diluted, and the chlorides would be lower for that reason. (9) Another urine reddish yellow, specific gravity 1022, and chlorides 35-542, and total solids 102.6, rather high in amount, had *no indican*. Uric acid was present in the urine and sarcanæ were plentiful Two thousand c.c. of urine were passed during the twenty-four hours. (10) A urine reddish yellow, specific gravity 1012, chlorides 22-340, total solids 58.7, had *no indican*. In this case 2112 c.c. of urine were passed in twenty-four hours. (11) A urine yellowish red, specific gravity 1026, chlorides 40-620, acidity 25, had the indican index at 20. In this instance the chlorides are high and the amount of indican is more than in any of the foregoing cases. Stomach disorder was present in this case. (12) A urine yellowish red, with the high specific gravity of 1034 and the chlorides also high, 40-620, had the indican index at much less than the preceding, the figure being 5, whereas it would be expected to be higher. A stomach disorder was noted here also. (13) A urine yellowish red, specific gravity 1028, and chlorides 60-930, had the indican index at 20. (14) A urine yellowish red, specific gravity 1028, and chlorides 35-542, had the indican figure at 10. (15) The last urine yellowish red, specific gravity 1030, and chlorides 20-310, had the indican figure at 15. There is more indican present here than in Case 2, which has the same color and specific gravity and twice the amount of chlorides, while there is almost as much indican as in Case 13, where the chlorides are three times as great.

URINES.

		Specific Gravity.	Chlorides.	Indican.
1	Light yellow	1002	10–155	0
2	Reddish yellow	1006	14–217	0
3	Yellowish red	1010	15–232	10
4	Reddish yellow	1012	22–341	0
5	Reddish yellow	1018	30–465	0
6	Yellowish red	1020	14–217	10
7	Yellowish	1020	23–351	15
8	Yellowish red	1020	30–465	15
9	Reddish yellow	1022	32–496	Faint trace
10	Reddish yellow	1022	35–542	0
11	Yellowish red	1024	21–325	6
12	Yellowish red	1024	25–385	5
13	Yellowish red	1024	26–403	10
14	Yellowish red	1024	28–434	20
15	Yellowish red	1024	30–465	5
16	Yellowish red	1026	27–418	10
17	Yellowish red	1026	40–620	20
18	Yellowish red	1026	45–697	10
19	Yellowish red	1028	30–465	3
20	Yellowish red	1028	35–542	10
21	Yellowish red	1028	60–930	20
22	Yellowish red	1030	20–310	15
23	Yellowish red	1030	40–620	5
24	Yellowish red	1034	40–620	5
25	Yellowish red	1036	30–465	11

Antagonism of Anthrax and Pyocyaneus Bacilli.—H. L. Boidin refers to the recent experiments performed by M. Fortineau of Nantes, who showed that such antagonism exists, and that it may be utilized in the treatment of anthrax in human beings.—*La Presse Médicale.*

THE TREATMENT OF INTERSTITIAL KERATITIS BY SALVARSAN.

By GEORGE W. VANDEGRIFT, M.A., M.D.,

NEW YORK.

INSTRUCTOR IN OPHTHALMOLOGY CORNELL MEDICAL COLLEGE, ASSISTANT SURGEON NEW YORK EYE AND EAR INFIRMARY.

Before reporting the results of treatment of interstitial keratitis by salvarsan it is well to sum up our experience in its treatment by mercury. Two points in particular are worth emphasis; first, that the acute stage of interstitial keratitis under the ordinary mercurial treatment persists for six to twelve months, frequently longer; second, that the amount of connective tissue remaining in the cornea after the cessation of the acute inflammation depends on the duration and intensity of that inflammation. The briefer the inflammation the less connective tissue will be deposited and the better therefore the ultimate vision. If the inflammation has been mild and confined to the edge of the cornea the scar tissue will be slight. If the inflammation began in the center of the cornea (a type much more serious than the former) then the infiltration will be denser, more slowly absorbed, and the vision at the end will be impaired seriously.

The following cases were treated locally with atropine and hot bathing. No other general medication was given besides salvarsan, which was administered in an oily vehicle intramuscularly.

Case I.—E. W., age 15. In June, 1911, this boy came to me after having had mercurial inunctions for six months, since the beginning of the interstitial keratitis. Each cornea was a mass of exudation, over the lower half of which was a salmon patch. No corneal tissue was distinguishable. In the center of each mass was what appeared to be a perforation, but which later proved to be a hernia of Descemet's membrane through a central necrosis of the cornea. The conjunctiva of each eye was intensely inflamed and the upper ocular part was necrotic, perforated, and excreting pus. Vision was reduced to the perception of intense illumination only. The face presented the physiognomy of inherited syphilis with Hutchinson's teeth. The Wassermann reaction was + + +. The patient entered the hospital and received salvarsan full amount of ampule. The conjunctival abscesses subsided under local treatment, and two weeks after the first injection of salvarsan a second full one was given. Within a few days after the second injection the corneal infiltration began to be absorbed till at the end of four weeks from the second injection every trace of acute inflammation had passed away, and the patient read 20/70. Since then the infiltration in the center of the cornea has been clearing till at the present time the vision is 20/40. November 15 the Wassermann being positive a third full injection of salvarsan was given.

Case II.—N. C., age 13. October 15, 1911, this girl came to me presenting the usual symptoms of interstitial keratitis of the right eye, duration four weeks. The lower half of the cornea was covered by a salmon patch. Vision was reduced to counting fingers at three feet. She had the physiognomy of inherited syphilis and the Wassermann was + + +. An immediate injection of a full dose of salvarsan was given. Within a week the process was checked and improvement began. After two weeks from the first injection another full injection of salvarsan was given, at which time every trace of acute inflammation had disappeared. At the end of one

month from the first injection the vision was normal, a few thin scars remaining in the corneal tissue. A third full injection of salvarsan was given December 15, the Wassermann being faintly positive.

Case III.—A. C., age 20. This girl was first seen by me August 1, 1911. She had had interstitial keratitis of central type in both eyes for four months. Vision, light perception. Physiognomy of inherited syphilis suspicious; Wassermann +++. Full injection of salvarsan given August 10. Second injection given September 15, up to which time no improvement was noticeable. After the second injection improvement began and progressed slowly till the middle of November, when the vision became 20/70 and all acute inflammation had disappeared. On January 9, the Wassermann being faintly positive, a third full injection of salvarsan was administered.

In none of these three cases up to the present day (September 1, 1912) has there been a relapse, and the Wassermann still is negative.

Nothing in our experience in the treatment of interstitial keratitis has approached the efficacy of salvarsan. No doubt these cases could have been cured with mercury, but in a very much longer time, during which connective tissue would have continued to be deposited in the cornea, and the ultimate vision would have been much worse. The salvarsan has worked so quickly, and this is particularly so in my second case that was incipient, that little connective tissue had time to form. In each case, also, the corneal infiltrate even after subsidence of the all inflammatory signs has been absorbed to a much greater degree than could be hoped for with mercury. We do not expect to absorb the old scars of a past interstitial keratitis with salvarsan or by any other treatment, but if salvarsan is used when the least trace of acute symptoms is present it will not only check the inflammation but will absorb the infiltrate and prevent further deposit of connective tissue.

147 East 18th St.

Relation of Spleen to Blood Destruction and Regeneration and to Hemolytic Jaundice.—R. M. Pearce, J. H. Austin, and E. B. Krumbhaar conclude that the rapid injection of more than 0.06 of a gram per kilo of hemoglobin intravenously into a normal animal is followed by the appearance of hemoglobin in the urine (pelvis of kidney) within eight to ten minutes. After the rapid injection of more than 0.012 of a gram per kilo per minute of hemoglobin, 16 to 36 per cent. of the total amount, if this equals 0.25 of a gram per kilo, is eliminated in the urine and is accompanied by choluria. If the injection of not more than 0.35 of a gram per kilo is made slowly (less than 0.01 of a gram per kilo per minute), the amount eliminated in the urine is only 2.33 to 9.5 per cent. of the total amount injected, and choluria does not occur. The concentration of free hemoglobin in the blood which constitutes the threshold value of the kidneys for hemoglobin is approximately 0.06 of a gram of hemoglobin per kilo of body weight. When about this concentration is reached, hemoglobin appears in the urine. The amount of hemoglobin per kilo of body weight which, after rapid injection, may be retained without jaundice, is approximately 0.18 of a gram. When 0.22 or 0.23 of a gram is retained bile pigments appear in the urine. The threshold of the liver for jaundice in point of hemoglobin saturation lies, therefore, between 0.18 and 0.22 of a gram per kilo of body weight. With slow injections a greater amount may be retained without choluria. The absence of the spleen does not alter greatly the percentage of hemoglobin eliminated by the kidney, nor does it raise the threshold of the liver for jaundice. In the presence of jaundice, either hemolytic or obstructive, the amount of hemoglobin retained by splenectomized animals is slightly diminished and that eliminated by the kidneys is correspondingly increased.—*Journal of Experimental Medicine.*

Medicolegal Notes.

X-Ray Burn—Holding Hand Too Close to Machine.—Action was brought for damages against a surgeon for an *x*-ray burn alleged to have been caused by the negligent, careless, and unskillful application of *x*-rays to the palm of the plaintiff's hand. The plaintiff's petition alleged that the defendant negligently caused the palm to be exposed to the rays eight or nine times, and for such lengths of times as to cause the skin, muscles, etc., of the hand to be burned, whereby the hand became badly swollen, poisoned, and diseased. This complaint, it was held, did not limit the allegation of negligence either to the use of the rays at all, or to the number or length of the exposures, but included negligence generally in the application of the rays, so that the plaintiff was entitled to recover on proof of negligence in directing him to hold his hand too close to the machine, notwithstanding the uncontradicted evidence that the kind of treatment and times of application were proper.

The court charged the jury that one who holds himself out as a physician and surgeon must use reasonable skill and diligence in the treatment of those employing him and if the defendant undertook to treat the plaintiffs' hand for eczema by the *x*-rays and exposed it thereto eight or nine times for such lengths of time as to severely burn the hand, they should find for the plaintiff. It was held that this instruction was misleading, because too indefinite and uncertain. It should have required the jury to find the specific act of negligence shown by the proof, *i.e.* the placing of the hand too close to the tube of the machine. The defendant informed the plaintiff that there was always danger connected with the treatment, and the plaintiff agreed to assume the risk. The defendant was entitled to the benefit of that express agreement. But the assumption was limited to risks attending the use of the *x*-rays in a careful and skillful manner; it being contrary to public policy to allow the doctrine of assumed risk to include an injury caused by the physician's negligence in exposing the plaintiff's hand so close to the machine as to burn it seriously. Judgment for the plaintiff was reversed and the case remanded for a new trial.—Hales v. Rainis, (Mo.) 141 S. W., 917.

Insurance—What Constitutes a Consultation.—A question in an insurance application asked whether the applicant had been treated by or had consulted any physician in regard to personal ailment within the last seven years. The answer was in the negative. In an action on the policy the evidence showed that the insured had on a specified date told a physician he had a headache, for which the physician gave him headache tablets. The doctor made no examination of the insured and asked him no questions about the headache complained of. It was held that this was not a consultation or a treatment within the meaning of the question. It was also held that the question, when considered in connection with another question as to whether the applicant had ever had any local disease, personal injury, or "serious illness," referred only to ailments of a substantial nature, and not to a mere temporary functional indisposition.—Modern Woodmen of America v. Miles, Indiana Supreme Court, 97 N. E. 1009.

Evidence as to General Health.—In an action upon an accident assurance policy a physician who saw the deceased socially very frequently was allowed to testify as to his general health, although he rarely attended him professionally.—Standard Accident & L. I. Co. v. Wood, Maryland Court of Appeals, 82 Atl. 702.

Insurance-Physician's Certificate as Evidence.—In an action on an insurance policy the defense was breach of warranty stipulating that the insured had not consulted a physician within five years. It was held that the breach of warranty was not established by the certificate of a physician, attached to an application by the insured to the board of education for leave of absence with pay, reciting that insured was suffering from influenza and tonsillitis, in the absence of any evidence that the insured consulted the physician for the purpose of treatment.—Smith v. Travelers' Ins. Co., 135 N. Y. Supp. 18.

Intoxicating Liquor Act.—The Kentucky statute provides that any person who shall "sell, barter or loan" any intoxicating liquors in a local option district shall be punished. A physician gave whiskey to a person who said he wanted it for a child who had the measles. There was no agreement that it should be returned and the physician did not request its return. It was held that the physician was not guilty of violating the act merely because the person returned the whisky.—Commonwealth v. Abbott, Kentucky Court of Appeals, 145 S. W. 373.

MEDICAL RECORD.

A Weekly Journal of Medicine and Surgery.

THOMAS L. STEDMAN, A.M., M.D., EDITOR.

PUBLISHERS

WM. WOOD & CO., 51 FIFTH AVENUE.

See fourth page following reading matter for Rates of Subscription information for Contributors and Subscribers.

New York, October 26, 1912.

MEDICINE AND THE DRAMA.

IF the purpose of the drama is "to hold the mirror up to nature," surely the work of the dramatist is the most difficult of the fine arts. He who is content to portray the lighter and superficial phases of human conduct is less likely to violate the above fundamental canon than he who would seek to uncover the innermost sources of human action. There is a growing tendency in the modern drama to interpret for the popular mind the abstruse problems of psychology. It plunges boldly into the depths of the occult, and does not hesitate even to grapple with some of the unsettled problems of medical science. The productions of the modern stage, apart from those that appeal merely to the senses, handle without reserve the moot points of heredity and subconscious cerebration, and even endow with real life and blood the shadowy images of the spirit world.

The interest of the physician in the drama is threefold: as the spectator, as the one who sees himself portrayed or parodied on the stage, and as the critic. In the first of these rôles the medical man easily secures a needed relaxation from his daily cares. As a character in the play itself, the type of the physician has been from the very beginning of the drama until the present time one almost exclusively of buffoonery or of villainy. The *Médecin malgré lui* of Molière finds its modern counterpart in the scheming charlatan of the stage. The dramatic art has not yet outgrown the ancient conception of the inferior social position of the medical man. The noble traits of the latter's nature do not appeal to the dramatist looking for sharp contrasts. The average playgoer may cherish a secret satisfaction in witnessing the caricature of the type of man at whom he is wont to cast his careless gibe, but to whom he inevitably bows in his distress. With the increasing modern conception of the sacredness of the physician's calling, however, there is gradually passing away the traditional comical representation of the doctor on the stage. The most important phase of the physician's relation to the drama is that of critic. He who is brought so closely into contact with life in its myriad aspects, may fairly be justified in setting himself up as a critic of the drama. He will, perhaps, not essay to deal with its literary or mechanical merits. But the subject-matter of the play, the unfolding of the plot, the portrayal of character, and the estimation of human conduct, are all properly within the jurisdiction of the physician's analysis and comment. This authority of critic is all the more to be recognized when the dramatist handles such biological problems as heredity or enters the realm of psychiatry.

Conspicuous in the modern drama and, in fact, in the drama of all ages and countries, is the predominance of the sex element. A perennial interest attaches to this, the most powerful instinct of the race. Unfortunately the art of the playwright is not always confined to the sublimated and esthetic phases of this mainspring of human emotion, and only too frequently the drama responds to the demands of a prurient patronage. The sensuous beauty of its music, the charm of its color, and the power of its acting could not transfigure the sadistic motif of Strauss's operatic masterpiece. The polygamous element in human nature finds its dramatic representation in countless variations and suggestions on the modern stage. The average playhouse does not by any means provide a salubrious moral atmosphere for the young nor does it assist in refining the grosser instincts of the adult.

In his search for novelty the dramatist invades the cloister and the confessional, the consulting room and the laboratory. Armed with the results of cursory reading and superficial study, he handles the mysteries of faith and of life with the calm satisfaction of an expert. The picture presented to the public is usually one either of unreality or of travesty. Old-time prejudices and discarded doctrines are actually paraded upon the stage as established truths. Thus, the belief in maternal impressions forms the keynote of one of the newer plays presented in New York. The heroine, a victim of double personality, is supposed to inherit the kindly disposition of her father (who, by the way, is a physician) and the malignant traits of the hypnotist who wrought his evil spell over the mother while the child was still *in utero*. Admitting the reality of a double personality, one perceives, nevertheless, that the author ignores the present scepticism of the medical profession with reference to maternal impressions and utterly disregards the Mendelian theory of heredity. This play is but one of many in which there is clearly seen the hand of the amateur dabbling in scientific subjects. The drama is a powerful agency in teaching and in elevating the taste of the public. At the same time it may be a potent instrument in disseminating falsehood and in degrading the finer instincts of humanity.

Another phase of this subject is the growing tendency to read new meanings into some of the older masterpieces of the stage. Shakespeare never dreamed of the thousand and one interpretations which his generous German and English commentators have placed upon the prolific fruits of his genius. Little did he know that in creating the immortal characterizations of Macbeth, Hamlet, and Othello he set up, according to the Italian criminologist Enrico Ferri, perfect types of the born criminal, the criminal lunatic, and the emotional criminal. If the bard of Avon could read some of

the literature of the Freudian school, he would probably be shocked to learn that Hamlet's vagaries were the result of an erotic attitude toward his own mother.

The drama is at once an index of civilization and a potential factor in its advancement. The physician, to whom more than to any other man is accorded the opportunity of reading the heart of humanity, may rightly claim the prerogative of an enthusiastic patron and a qualified censor of the stage. At any rate he should not remain mute when falsehood or error dons the buskin and wears the mask.

DISEASES OF OCCUPATION IN THE UNITED STATES.

With the flocking of the population to cities, and the increase of manufacturing in this country, industrial diseases become more evident. In the large cities, and in New York in particular, there are immense numbers of people who work in factories and at home in many instances under conditions the reverse of sanitary. At the recent International Congress on Hygiene and Demography held in Washington many valuable papers were read dealing with this matter. According to H. Linenthal of Boston, in spite of the influence of industrial processes and of labor conditions upon the health of the community our knowledge and statistical data are meager, due largely to the following causes: (1) With few exceptions occupational diseases are not under the law reportable to the health authorities; (2) physicians are not sufficiently familiar with industrial processes or even with the processes designated as dangerous, so that they fail to recognize the relation of morbidity to occupation; (3) statements of occupation on morbidity and mortality records are too general or inaccurate to be of any great value; (4) inspection of industrial establishments is as a rule carried on by men entirely unfamiliar with health matters; (5) there is a lack of realization among both employers and employees of the dangers involved in certain processes. Linenthal thinks that, in order to protect the workers from the ill effects upon their health of industrial processes or insanitary conditions the following measures should be adopted: (1) To collect complete and accurate data regarding industrial processes and the conditions under which the various industries are carried on; (2) to insert more accurate and detailed information relative to occupation on morbidity and mortality records; (3) to instruct the medical student in this important field of preventive medicine by a course of lectures on the more important industrial processes and the diseases to which they give rise; (4) to place the specific industrial diseases on the list of diseases notifiable to the central health authority; (5) to examine periodically all workers in certain industries, these industries to be named by the central health authority; (6) to exclude minors and women from certain industries which are designated by the central health authority as injurious to health; (7) to have adequate laws regulating sanitary conditions and protective devices in industrial establishments and to have such laws intelligently enforced; (8) to have the central health authority issue regulations for certain dangerous trades with instructions to employers and employees how to guard themselves against the ill effects of their work, and to have such instructions posted in the workrooms; (9) to carry on an extensive educational campaign among both employers and employees as to the value of protective measures and good sanitary conditions.

As a matter of fact Massachusetts is the only State which has good laws fairly well enforced in regard to industrial labor. As readers of other papers at the Congress pointed out, throughout the United States there is a lack of health legislation relating to industry. If Linenthal's propositions could be carried into effect in all parts of the country, the result would be beneficial not only to the worker but to the whole community. Without legislation little can be done, for the large majority of employers will not spend money to ensure good sanitary conditions in their factories or workshops unless compelled to do so by law. They should be so compelled and that quickly.

Another phase of the industrial problem which commands attention is the relation of factory labor to infant mortality. Two papers were read at the recent Congress on this subject and these seemed to conflict. The first by Mr. Charles H. Verrill dealt with infant mortality and its relation to the employment of mothers in Fall River, Mass., and his conclusions were that the employment of mothers had but slight influence upon infant mortality. In the second paper Dr. George Reid of Staffordshire, England, stated that by his investigations with regard to infant mortality in relation to factory labor he had convinced himself that the employment of mothers in factories had a decidedly adverse influence on infant mortality. It would appear that such would naturally be the case, for the infants of mothers going out to work would be chiefly nourished on artificial food. It is acknowledged that breast feeding checks infant mortality largely, and therefore factory working by mothers, rendering necessary the use of artificial food for infants, must increase infant mortality. One important lesson to be learned from the papers read at the International Congress on Hygiene and Demography with respect to diseases of occupation is that legislation is needed in all parts of the United States to safeguard the health of those engaged in industrial work.

Latent Eclampsia.

The expression "eclampsia without convulsions" is justly repudiated, since it is practically equivalent to "convulsions without convulsions." There is of course a well-defined condition which goes by this name and for the designation of which the term latent or masked eclampsia may be justifiable as a metaphor, but which should be entitled to a more positive appellative. In recent years latent eclampsia has come to be recognized as a particular clinical form of gestation toxicosis. It is by no means clear that conditions so described are always one and the same thing. It is conceivable that the

toxemia may be so profound that the convulsive phase is skipped, the patient passing at once into fatal coma. Eclampsia is that form of toxemia of pregnancy which develops at or near the time of labor or in the puerperium. In a large percentage of cases it is the convulsions, or the special factors which bring them about—such as high blood pressure, which constitute the real disease and are the actual cause of death. Yet when no convulsions occur it is claimed that this is due to the very intensity of the toxemia. There is evidently a paradox here, when too many convulsions produce the same results as no convulsions at all. Articles in the *Berliner klinische Wochenschrift,* September 9, by Gottschalk and Freund show that "eclampsia without convulsions" is essentially a post-mortem diagnosis. The authors find subjects with all the autopsy signs of eclampsia yet with no history of the latter. There are parenchymatous degenerations in the liver and kidneys, acute hemorrhagic diathesis, and perhaps dubious finds in the placenta. Until the obscurity attendant upon these cases can be effectually cleared up, the diagnosis of "latent eclampsia" may perhaps, as already stated, be justifiable.

Scleroderma and "Idiopathic" Atrophy of the Skin.

The affection once believed to be a primary atrophy of the skin, and later recognized as having, in some cases at least, a definite initial inflammatory stage, evidently stands in a more or less close relationship with scleroderma. Either may appear in a local or diffuse form, and each may show a preliminary active phase which is the precursor of the trophic changes. Moreover each form may attack the extremities causing special clinical types. The near relationship of these two affections is perhaps exemplified further in a case reported to the Leipzig Medical Society last summer by Riecke (*Münchener medizinische Wochenschrift, September* 24) in which the two were said to exist side by side. The patient, a woman past middle life and of neurotic tendencies, developed after cold bathing a diffuse condition diagnosticated readily as scleroderma. Some of the lesions encountered in the examination were, however, of much greater age, and had never shown any of the peculiar manifestations of scleroderma. The localization of the two affections was distinct, the simple atrophy being limited to the backs of the hands and one thigh, while the sclerodermatous patches occupied chiefly the legs and feet, the back, and the upper region of the chest. Riecke had already seen one case of this association, and will report the subject in full. Thus far he has expressed no opinion as to its rationale. The most plausible supposition lies in the existence of a structural predisposition, in virtue of which indifferent causal factors may set up involutional processes.

The Use of Salvarsan in Tuberculosis and Anemia.

The thought that possibly the good results produced in severe cases of syphilis by means of salvarsan might possibly be due to the effect of the drug upon the body apart from its parasitotropic influence, led Maurice and André Bernay of Lyons to try the effect of salvarsan in cases of tuberculosis and of anemia. Atoxyl had already been employed in the treatment of the former disease by Knotte of Odessa, and Herxheimer and Altmann had obtained apparently favorable results in the treatment of lupus vulgaris by means of salvarsan. The Bernays report their own experiences in the *Journal de Paris,* August 24, 1912. There was some experimental basis for this form of chemotherapy, for J. Nicolas, P. Courmont, and M. Gaté announced before the Société de Biologie, July 27, 1912, that by means of injections of salvarsan in the rabbit and goat they had succeeded in causing a considerable increase of agglutinins with reference to the tubercle bacillus. As regards the clinical results of the intravenous injections of salvarsan in cases of tuberculosis the authors note that these injections are followed by a gain in weight, strength, and appetite, and an increase in the number of red blood cells. Pulmonary lesions show a striking improvement, which is, however, most marked in the case of the tracheobronchial glandular enlargements. The program of treatment carried out is an elaborate one. In addition to a séance of thermotherapy and of inhalations of ozone, the patients receive daily hypodermic injections of a solution of methylarsinate or of cacodylate of sodium, and every six to eight days an intravenous injection of 0.10 to 0.50 gram of salvarsan. A contraindication to this method is the presence of hemoptysis. Results as striking as those which were obtained in tuberculosis were observed by the authors in cases of anemia in which the intensive arsenical therapy above described was applied. Lately they have substituted neosalvarsan for salvarsan.

News of the Week.

Surgical Congress.—The third annual session of the Clinical Congress of Surgeons of North America will be held in New York City on November 11 to 16, 1912, under the presidency of Dr. Albert J. Ochsner, who has had the assistance of a large number of eminent surgeons in the preparation of a most valuable program. In practically every large hospital of New York and Brooklyn surgical clinics will be held both morning and afternoon throughout the week, while at the evening sessions in the grand ballroom of the Waldorf-Astoria a number of papers on a variety of surgical subjects will be presented and discussed. The headquarters of the Congress will be at the Waldorf-Astoria, and here each day a complete bulletin of the clinics and demonstrations to be held on the succeeding day will be posted. Invitations to the Congress may be obtained upon application to the secretary, Dr. Franklin H. Martin of Chicago, and membership cards admitting the bearer to the clinics and scientific sessions will be issued at the time of registration upon payment of a fee of five dollars.

For Defective Children.—The Department of Public Charities of New York City announces that it will soon open a bureau for the examination and classification of defective children, which is described as a clearing-house. To it children may be referred by the Departments of Education, Health, Immigration, and Public Charities, and by children's courts, societies for the safeguarding of children, dispensaries, etc. The bureau, which will be under the charge of Dr. Max G. Schlapp, will make a careful examination of each child referred to it, to determine the nature of its feebleminded-

ness, and whether it is or is not likely to be dangerous to the community by reason of criminal tendencies, and will decide upon the proper course of action in each case. For the present such examinations will be conducted by Dr. Schlapp at the Post-Graduate Hospital, but later the Department will submit plans for a site and building for the purpose to the Board of Estimate.

Public Cups on Trains.—Surgeon General Blue has urged upon Secretary MacVeagh the desirability of issuing an order banishing public drinking cups on all railroad trains. Many of the States have already passed laws prohibiting the use of such cups, but these, of course, are operative only within the State, and the Surgeon General believes that it is time for the Government to insist upon the adaptation of the reform by Interstate roads.

Charitable Gifts.—The Day and Night Camp for Tuberculosis in St. Louis, which is to be ready for opening by Thanksgiving time, has recently received a gift of $10,000 from Miss Helen Gould.

By the will of the late Mrs. Brockholst Cutting of Newport, R. I., the corporation of the St. Clare Home of Newport receives the sum of $50,000 to build or equip a building to be known as the Cutting Memorial and to be used by the White Sisters for the care of the sick poor. For the maintenance of this memorial the sum of $100,000 additional is left in trust.

The Adirondack Cottage Sanitarium of Saranac Lake, N. Y., receives a bequest of $25,000 under the will of the late Mr. William Hall Penfold of New York, who died recently. In addition, St. Mary's Free Hospital for Children and the Presbyterian Hospital of New York receive $10,000 each, and on the death of the residuary legatee the sum of $300,000 is to be divided among a dozen charitable institutions, among which are the Presbyterian Hospital, St. Luke's Hospital, the Manhattan Eye, Ear, and Throat Hospital, and the Home for Incurables, New York, and the Adirondack Cottage Sanitarium.

By the will of the late Mr. Sebastian D. Lawrence, the city of New London, Conn., receives a gift of $198,000 for the erection of a hospital to be known as the Joseph Lawrence Free Hospital, and a trust fund of $200,000 for its support, the request being made that no nurses under the age of thirty be employed in the institution.

Armor against X-Rays.—A discovery which will, it is hoped, remove the risks of x-ray operators, was announced recently at a meeting of the French Academy of Sciences by M. Droit, who had been impressed during some experiments with the remarkable capacity of silk to absorb metallic substances. With the aid of silk manufacturers, M. Droit succeeded in preparing a silk so impregnated with lead and other substances as to be impenetrable to the rays. One piece of silk thus charged weighs 266 grams to the square meter, and a glove made from it has proved a complete protection against the rays.

Decision against Dr. Kunitzer.—The Appellate Division of the Supreme Court of New York handed down a decision on October 18, denying the appeal of Dr. Robert Kunitzer from the ruling of the Supreme Court which in turn had refused to grant him an injunction against the New York County Medical Society. As has previously been stated, Dr. Kunitzer has charged that his expulsion from the Society was the result of an unfair trial, that the proceedings were irregular, and that the votes were improperly counted. The decision of the Appellate Division was rendered without an opinion and was unanimous.

Is the Cow Passée?—From Germany comes the announcement of the production of synthetic milk, more nourishing and more easily assimilated than cow's milk, quite as palatable, and of the same color. The method of manufacture is secret, but it is said to be composed entirely of vegetable ingredients digested by machinery instead of by the cow. In London the building of a factory for the preparation and sale of the product has been proposed.

Collective Investigation of Ulcer of the Stomach.—At the invitation of the German Committee organized for "A Collective Investigation of Ulcer of the Stomach," a similar committee has been formed in this country, consisting of Drs. George Brewer, Warren Coleman, Max Einhorn, James Ewing, J. M. T. Finney, Arpad G. Gerster, John C. Hemmeter, Frederic Kammerer, J. Kaufmann, William J. Mayo, Willy Meyer, Wm. Gerry Morgan, John B. Murphy, Franz Pfaff, Maurice H. Richardson, William L. Rodman, Charles G. Stockton, and John S. Thacher. The purpose of the investigation is to collect data enabling clinicians to clear up the various moot points in the etiology of ulcer of the stomach, thus facilitating its recognition and treatment. For this purpose surgeons are requested to send the material obtained from ulcer cases at operation (resected ulcers, pieces of mucous membrane), properly preserved, to a central bureau for examination. Of equal importance would it be if pathologists would also send material of gastric ulcers and scar tissue from the post-mortem table to the same central bureau, at the same time filling out the autopsy blank. Finally it would be desirable that all clinicians, internists as well as surgeons, should fill out the history blank, but only in cases which come to operation or autopsy. The central bureau of the American Committee is the Pathological Department of Cornell University Medical College, 477 First Avenue, New York City, where Prof. Ewing will make the pathological and bacteriological examinations of the anatomical material, the results of which will be published by him. The American Committee seeks the cooperation of all physicians, surgeons, and pathologists who may be willing to assist in the investigation. Due credit will be given in the published analysis of the cases to all who send histories and anatomical specimens. Directions for preserving and forwarding the anatomical specimens are given upon the history and autopsy blanks. The autopsy reports should be sent with the specimens to Prof. Ewing. The clinical histories may be forwarded with the specimens, or may be sent direct to the Secretary, Dr. Warren Coleman, 58 West 55th Street, New York City.

Registration Rescinded.—At a recent meeting, the Board of Regents of New York State rescinded the registration of the following institutions: Oakland College of Medicine and Surgery, Oakland, Cal.; Medical Department, Howard University, Washington, D. C.; Chicago College of Medicine and Surgery, Chicago, Ill.; Valparaiso University Medical Department, Valparaiso, Ind.; Hahnemann Medical College of Chicago; College of Physicians and Surgeons, Chicago; College of Homeopathic Medicine, State University of Iowa;

College of Medicine, State University of Iowa; Kansas Medical College, Department of Washburn College, Topeka, Kan.; College of Physicians and Surgeons, Baltimore; School of Medicine, Boston University; Medical Department, Creighton University, Omaha; Dartmouth Medical School, Hanover, N. H.; Cleveland-Pulte Medical College Cleveland, O.; College of Medicine, University of Tennessee, Memphis, Tenn.; Medical Department, Vanderbilt University, Nashville, Tenn.; Milwaukee Medical College, Department of Marquette University, Milwaukee, Wis.; Wisconsin College of Physicians and Surgeons, Carroll College, Milwaukee, Wis.; Manitoba Medical College, Winnipeg; Faculty of Medicine, Dalhousie University, Halifax, N. S.; Faculty of Medicine, University of Toronto, Canada; Faculty of Medicine, McGill University, Montreal, Quebec.

Does Not Want Consumptives.—The Anti-Tuberculosis Association of Texas has recently issued statements setting forth the reasons why it is disadvantageous for sufferers from tuberculosis to go to Texas in hope of relief. The climate is suitable, it is said, but there are very few hospital facilities and no opportunities for work for invalids. The influx of consumptives into the State has been large within recent years, and the Texans are desirous of restricting it.

The Cornell University Medical College opened on October 2, 1912, with an enrollment as follows: For the degree of M.D., first year, 39; second year, 24; third year, 20; fourth year, 19; special students (work not leading to the degree of M.D.), 5; Doctors of Medicine engaged in research, 7; for the degree of Ph.D., 2; making a total of 116 students. There is an increase over last year of 15 students in the enrollment for the course leading to the degree of M.D. All students now registered, with the exception of those who are pursuing the combined seven year courses leading to the degrees of A.B. and M.D. are graduates in Arts or Science, or Doctors of Medicine doing advanced work.

Rat Census.—The first rat census of the United States is about to be undertaken by the Public Health Service, its object being to determine to what extent the rats and other rodents spread disease, such as bubonic plague, and also what amount of damage is done by them in dwellings, barns, warehouses, etc.

Animal Hospital.—The New York Women's League for Animals is to establish a hospital in New York for the treatment of animals of all sorts. A site at the corner of Bond and Lafayette streets has been selected, and a $50,000 building will soon be erected.

Fever Stricken Village.—Troy, Pa., a village with a population of about 1,500, is suffering from an epidemic of typhoid fever. More than 100 cases of the disease had been reported up to October 17.

Births and Deaths in New York.—During the month of August there were in New York State 19,220 births and 11,250 deaths. Of the former 11,525 were credited to New York City, distributed among the different boroughs as follows: Manhattan, 5,787; Bronx, 1,056; Brooklyn, 3,817; Queens, 685; Richmond, 180. The urban births, outside of New York City, numbered 4,274, while the rural localities were credited with the balance, or 3,421. Of the deaths, 5,781 occurred in New York City, 2,766 in the other cities of the State, and 2,702 in the rural districts. Of the total number of deaths, 898 were due to violence. Infantile paralysis assumed the proportions of an epidemic in the western part of the State, and there were 1,046 deaths from diphtheria, as against 236 in the month of July.

Prizes for Babies.—The Australian Parliament has recently voted to grant a prize to the parents of white children born in that country. The measure provided for the payment of twenty-five dollars for each child, but does not apply to the native blacks, or to the Asiatic residents of Australia.

Warning to Tourists.—The Public Health Service reports that there have been a number of cases of smallpox recently at Almera, Spain, a port which is visited by practically all of the Mediterranean steamers, and warns American tourists against landing there. Kobe, Japan, has also been placed upon the black list, as cholera, has reappeared there within the last few weeks. Porto Rico, on the other hand, is believed to be safe, as the plague has been practically wiped out.

Public Health Service.—A board of commissioned medical officers will meet at the Bureau of the Public Health Service, Washington, on November 11, for the purpose of examining candidates for admission to the grade of assistant surgeon in the Public Health Service. Candidates must be between 23 and 32 years of age, and graduates of a reputable medical college. The examinations are: 1, physical; 2, oral; 3, written; 4, clinical. After four years' service, assistant surgeons are entitled to examination for promotion to the grade of passed assistant surgeon. Assistant surgeons receive $2,000, passed assistant surgeons $2,400, and surgeons $3,000 a year, and when quarters are not provided additional allowance is made. Further information may be obtained from the Surgeon-General, Public Health Service, Washington, D. C.

Personals.—Dr. John Matthew Connolly, formerly of the Harvard Medical School, has become professor of chemical physiology in the State University Medical College at Portland, Oregon.

Dr. J. William White has been elected emeritus professor of surgery in the Medical Department of the University of Pennsylvania.

A Presentation to Professor Rubner.—A committee of students of the University and Bellevue Hospital Medical College, consisting of Joseph Riss, chairman, Frank J. McLaughlin, John M. Loré, and Henry M. Scheer, waited on Professor Max Rubner, of the University of Berlin, at his hotel, previous to his sailing for home, and presented him with a token in appreciation of his course of lectures at the College, under the Herter Foundation.

The New York Medico-Surgical Society.—At the annual meeting of this Society, held Saturday evening, Oct. 19, at the Hotel Manhattan, the following officers were elected to serve during 1913: *President*, Walter Brooks Brouner; *Vice-President*, William E. Ramsay; *Treasurer*, J. Arthur Booth; *Secretary*, Samuel McCullagh.

Obituary Notes.—Dr. Edward Bond Foote of New York, a graduate of the College of Physicians and Surgeons, New York, in 1876, and a member of the New York State Eclectic Medical Society and of many philanthropic and sociological associations, died at his home on October 12, aged 58 years.

Dr. Walter Savage Whitmore of Oceanic, N. J., a graduate of the New York University Medical College in 1887, and a member of the New

Jersey State and Monmouth County Medical Societies, died on October 11, in the Monmouth Memorial Hospital, Long Branch, where he had been operated on for appendicitis a few days before, aged 63 years.

Dr. St. Mark Fortier of New Orleans, La., a graduate of the Medical Department of the Tulane University of Louisiana, New Orleans, in 1891, a member of the Southern Surgical and Gynecological Association, and physician in charge of the Louisiana Retreat, died at his home on September 29, after a long illness, aged 47 years.

Dr. Lewis R. Palmer of Baltimore, Md., a graduate of the Hahnemann Medical College and Hospital of Philadelphia in 1892, and president of the Maryland Homeopathic Hospital of Baltimore, died in the Hahnemann Hospital, Rochester, N. Y., on October 2, aged 44 years.

Dr. Abraham Joseph Gossett of New York, a graduate of the College of Physicians and Surgeons, New York, in 1909, died on October 5, after a lingering illness, at Monticello, N. Y., aged 25 years.

Dr. Alonzo C. McClellan of Charleston, S. C., a graduate of the Howard University School of Medicine, Washington, in 1880, and founder of the Hospital and Training School for Nurses of Charleston, died at his home on October 4, aged 57 years.

Dr. Thomas Joseph Bennett Dillon of Boston, a licentiate of the Royal College of Surgeons of Dublin, Ireland, in 1884, examining physician to the Boston Board of Health, and president of the Central Council of the United Irish League of Boston, died suddenly in the Massachusetts General Hospital, Boston, while he was undergoing an operation for cancer of the tongue, on October 16, aged 50 years.

Correspondence.

THE VACCINE TREATMENT OF PNEUMONIA.

To the Editor of the Medical Record:

Sir:—In an article published in the Medical Record of September 14, 1912, Dr. Henry A. Craig of New Brighton, N. Y., contributes his observation on the autogenous bacterial vaccine treatment of 300 cases of various diseases, among which 67 cases of pneumonia are included. He states that, "in spite of all treatment, the general mortality of pneumonia remains high—20 to 25 per cent."; and with this standard he ventures to compare the following results which he obtained from the autogenous bacterial treatment of this disease: First series, 47 cases, 7 deaths; second series, 20 cases, 1 death, giving a total mortality of 11.94 per cent.

I believe that Dr. D. B. Lees of London, England, was the first physician who made a practical systematic study of ice application in the treatment of pneumonia, and his first article was published in the *Lancet*, November 2, 1889. Soon after this I became much interested in the subject and made a collective investigation of 400 cases treated in the same way. Dr. Lees' first report comprised 18 cases, without a death. Dr. Freandt, a Finnish physician, treated 106 cases of pneumonia with ice applications, and experienced a death rate of 2.82 per cent. (*Lancet*, August 10, 1892, page 279). My own collection of 400 cases, made about 10 years ago, gave a total death rate of 4.25 per cent.

Now the statement of Dr. Craig, that the general death rate of pneumonia is from 20 to 25 per cent., may be true when this disease is not treated with ice or cold local applications, but it is certainly not true when ice is applied, as is illustrated by the figures just given. The truth is, and this should be recognized by any one who seeks to exploit a new idea concerning the treatment of this disease, that pneumonia, when left to itself, will, under ordinary circumstances, show a natural tendency toward recovery in from 85 to 90 per cent. of all cases, and that any treatment which is incapable of holding the death rate down to the neighborhood of 10 per cent. is not only worthless, but positively mischievous. This statement is not a rash assertion, but is based on the death rate experienced in this disease, when it was treated practically without medication of any sort, as has been done in Europe on a large scale in the past.

It is far from the intention of the writer to advocate the use of any method of treatment in the face of a better one, but, like every other therapeutic subject, this is preeminently a practical question which must be decided entirely on the merits which it is able to show at the bedside, no matter how much theoretical evidence may point in a contrary direction. It would, therefore, advance the service of medicine very much if any one who undertakes to launch a new treatment of pneumonia would investigate the field thoroughly and find what has been done by others in it. He would not fall into the error of believing that the general death rate of pneumonia, notwithstanding all treatment, rises as high as 20 or 25 per cent.; nor would he regard the nearly 12 per cent. death rate of pneumonia as a very strong vindication of the effectiveness of any treatment which had been employed.

Thomas J. Mays, M.D.

1829 Spruce Street, Philadelphia, Pa.

PAIN AFTER NEOSALVARSAN INJECTIONS.

To the Editor of the Medical Record:

Sir:—In the Medical Record of July 27, 1912, I presented a brief report of neosalvarsan, with a method of intramuscular injections with the view of reducing the element of pain to a minimum. Since the publication of that paper further studies have made clear the reason for the occurrence of pain in some of the injections that have been made by myself and others, and I beg you will give me this space to mention them briefly.

It seems to be imperative that the glycerin and the betaeucain or alypin solution be freshly prepared. In a large number of injections this observation has been made, and the pain has been almost nil when the glycerin has been freshly sterilized and the anesthetic solution freshly made.

The method of intramuscular injection does not seem to be indicated in patients who have already received intramuscular injections of mercury or of some other arsenic preparations. In such cases infiltrations are the rule, and it appears that the injection of neosalvarsan acts as an irritant to these masses and sets up an inflammatory reaction which is very painful. I do not know any way of avoiding pain in these cases; the intravenous method is indicated.

Abr. L. Wolbarst, M.D.

113 East Nineteenth Street, New York.

OUR LONDON LETTER.

(From Our Regular Correspondent.)

OPENING OF THE SCHOOLS FOR WINTER SESSION—INSURANCE, RESIGNATION OF CLUBS, AND CHARITIES—DEPUTATIONS TO MR. LLOYD GEORGE—PROVISIONAL REGULATIONS IN FORCE—PLAGUE—OBITUARY.

LONDON, October 4, 1912.

THE winter session was opened at the medical schools on Tuesday. At several the traditional method of marking the occasion by an introductory lecture at which former students were wont to assemble has been discontinued and a dinner conversazione, or something, substituted. I think it was old Barts which set the example some years ago. I am disposed to agree with the regrets often expressed by not a few at the loss of the time-honored function. The distribution of prizes takes the chief place in the program at some schools, and with it a short address from the celebrity who undertakes the duty, but it went just as well with the inaugural lecture. The Lord Mayor undertook the distribution at St. Mary's Hospital, and as he (Sir T. Crosby) is a medical man, was at once in touch with his audience. He urged the importance of the work of corporate and municipal bodies and thought the profession had neglected golden opportunities by not serving upon them. They would become leaders because they knew what was wanted for the health of the people. Such questions were part of their education and they would know more about them than engineers and that sort of people. It was difficult to keep out all reference to politics. "When I became Lord Mayor I put my politics under the table and luckily have not bent down to pick them up. But I have received many earnest applications from brother professionals, who thought, with justice I think (but that must be recognized as *sotto voce*) that they were not having fair treatment from the government. But they have taken that matter into their own hands, and I think they will succeed." The speech was punctuated with applause and the chairman, Dr. Philips, in proposing a vote of thanks which was carried with acclamation, observed that the Insurance Act was pushed through without the profession being consulted upon it or any of its details. The Lord Mayor afterwards opened the new casualty department and spoke of its importance to the hospital.

The Lord Mayor put in another appearance on the same day in connection with the celebration of the opening session; for he presided at the dinner of St. Thomas's Hospital and contrasted its present position with that of the old site where he received his own education. Then he repeated his view that medical men should take up county and municipal work. He looked upon it as a duty for them to do so and let those who controlled affairs know their worth. Their education would take them to the top and win them the respect of their associates. They must also vindicate the rights of the profession.

It was announced that a generous friend had handed the treasurer a cheque for £20,000 toward a new out-patient department.

At the Middlesex Hospital Dr. Lazarus Barlow delivered the address which he entitled the "Genius of the Infinitely Little," a phrase which excited some speculation as to what he intended to convey by it. Referring to the minuteness of the agencies at work in the functions of life he spoke of the virulence of bacteria, their extreme variation, some strains being killed off and others surviving adverse conditions. The modification of type depended on the survivors. The production of disease, its non-production, and the exaltation or depression of virulence, he cited as examples of the infinitely little. Passing on to radium emanations, he thought the story one of nature's masterpieces of satire. The alchemists strove to change the baser metals into gold, for they knew not that nature for untold ages had been turning the relatively common metal uranium into radium, 170,000 times more costly than gold. The dream of the alchemists was fulfilled and more, but with an almost diabolical contempt of man nature was endowing radium with the property of ceaseless change and decreeing that the transmutation should continue till it became lead, worth 2 pence a pound. True, time was not an object with nature and she would take a couple of thousand years to turn an ounce of radium into ½ an ounce of lead wherewith to mend a burst water-pipe. That only made the satire more pungent, for the existence of radium was discovered when there was plenty of lead and to spare. With all the minuteness of the rays shot off by radium bacteria might be destroyed by them. It was anticipated that cancer cells might be so destroyed. The tubercle bacillus and anthrax spore, extremely resistent to germicides, were killed by alpha and beta rays. Dr. Barlow said it might well be imagined that in the not very distant future radium would be used in the treatment of bacterial diseases. They already had indications that in smaller doses the emanations were stimulant. If so, what meant the presence of minute amounts of radium in the human body? Having mentioned some other speculations as to the genius of the cell and the infinitely little he turned to the new students and told them that the honor of the medical profession had been won for them by the infinitely little ones in the past and prayed them in their turn to hand on the torch undimmed and manifest the genius of that infinitely little by doing their duty always.

At Charing Cross Lady Mary Glyn distributed the prizes and the Bishop of Peterborough delivered an address in which he urged the students to join the shooting club so as to prepare for the defence of the Empire and the ideal of national life. The existence of their country almost depended on the universal military service proposed by Lord Roberts. As to the little black spot which had come into their lives in the Insurance Act it must be amended. He believed promises of this had been made, but it would be well for the originators to begin the amendment.

At St. George's Mr. H. B. Grimsdale gave the inaugural address and distributed the prizes. His subject was the "Duty of the Medical Citizen." Having reviewed the development of medicine as a science and an art he spoke of the blow struck by the government which might throw it back a century or more. The chancellor had exhibited his ignorance of the first requirements of modern medicine and seemed to fancy doctors were engaged in a guessing competition with numbered bottles corresponding with numbers given to diseases. The government were generous to working men and even to quacks —but at the expense of medical men.

The Insurance Commissioners have decided to divide England into nine inspectorial districts each with a divisional officer permanently resident in the chief town. There will be 277 new officials. Some

have been appointed. Of these, 8 are said to have special knowledge of Friendly Society work and 5 to be connected with trade unions.

Resignations of clubs continue to be sent in as do appointments on voluntary charities. The staff of the Royal Surrey Hospital intimate that they cannot treat insured persons gratis as at present when the act comes into operation in January. In most Surrey towns the profession seems unanimous. In the Manchester district I hear 240 club appointments have been relinquished as from January 15. In South Wales a system has long prevailed of contributions for medical officers being deducted from wages. The act would still apply and so double payment be exacted. The contracts are therefore being terminated with a view to a rearrangement. In the Liverpool district there are about 600 practitioners and of these 471 have already resigned contract work.

In Northampton 20 and in the county 150 have resigned. From Norfolk and Suffolk similar reports arrive. The unanimity of the profession has never been so marked. Every morning brings one similar decisions, and it seems useless to give further examples. It is much the same with regard to honorary appointments at the voluntary hospitals and charities. Some of these have already had subscriptions discontinued. Thus the North Stafford infirmary, largely supported by workmen, has been compelled to suspend structural extension towards which the public had freely subscribed.

On Wednesday Mr. Lloyd George received 18 medical members of the insurance advisory committees. These gentlemen are those who declined to resign when the majority did. There were at first 58 medical members appointed by the Insurance Commissioners and of them 38 resigned very soon when the opinion of the profession found distinct expression. The 20 who refused to follow, of whom Sir Clifford Allbutt has been the spokesman, were of opinion that they could serve their brethren better by remaining, and Sir Clifford, for himself and colleagues, has since testified to the careful and favorable consideration accorded to their representations, but said cardinal questions such as remuneration must await the return of the chancellor from his holiday. Wednesday's interview was arranged accordingly and the deputation submitted that in the public interest additional financial provisions should be made so as to allow fair remuneration to medical officers. The chancellor thanked the deputation for the support they had given him so far by remaining on the advisory committees and continuing their great public service by advising him at the present juncture. He promised to confer with his colleagues as soon as possible and hoped to be able to state their decision in the course of the week beginning on October 14.

This result is only what has been pretty generally anticipated from the various suggestions put forward in political and medical circles. It has long been believed that Mr. Lloyd George would be glad to see a way out of his trouble and was only waiting for a good opportunity to yield. He is not likely to get a better plan than these medical men offer. It is true they are in opposition to the mass of the profession and have been called many hard names. But they mean well and I am content to say they are out of tune with the majority. If they extract enough from the government to make fair remuneration other differences may perhaps be forgotten.

To-day the chancellor is receiving another deputation from the advisory committee. This is from the representatives of the insured persons.

Meantime there has appeared what may perhaps be a counterstroke. No less than the text of the provisional regulations made by the committees of the English, Welsh, and Scotch Insurance Commissioners. It was issued last night and comprises 59 sections (most of them with subsections), 4 schedules, and an appendix. It is prefaced by a statement that "on account of urgency," though provisional, these regulations are to come into operation immediately. It looks as if intended to obtain a determination to proceed whatever the opposition. The document would fill a number of the MEDICAL RECORD and is such as might have been issued if all parties were agreed and the scheme actually at work. Of course busy practitioners cannot digest it in a day, and though it looks fair enough in some respects it is desirable they should carefully scrutinize every phrase. It deals with every department, requires every committee for a county or borough to make arrangements for the treatment of insured persons, to estimate the cost, to determine conditions on which to invite practitioners to serve (after consultation with local medical committees), to decide methods and rates of remuneration, questions as to mileage, income limit, and many other points. All particulars are to be embodied in draft agreements and submitted to the commissioners as must every act of the local committees. When no agreement can be made the commissioners will take the matter into their own hands. It must be remembered their ordes have the force of the act itself and the possibility of the abuse of such power is obvious.

A case of plague has occurred on board a vessel in the River Tyne, which arrived on September 10 from Hamburg, and an apprentice was attacked the same day. He was taken to the floating hospital as suspected typhoid. Next day the medical health officer of the district examined his blood and diagnosed plague. He died on the 16th. A post mortem was made and the diagnosis has since been confirmed in the laboratory of the local government board. It has been ascertained that two other cases occurred on the same vessel before arriving at the Tyne. Of course every precaution has been taken to prevent the spread of infection.

Inspector General Sir Herbert M. Ellis, K.C.B., R.N., died on September 30, aged 61. He qualified at the two colleges in 1873 and joined the navy in 1875. He served in the Royal Marine Artillery through the Egyptian campaign of 1882 and was at Kassassin and Tel-el-Kebir, received the medal with clasp and star and promotion to staff-surgeon. In 1893 he was fleet surgeon on the *Victoria*. Next year he became Inspector General and from 1904 to 1908 was Director General of the medical department of the navy. In 1906 the Royal College of Surgeons elected him to an honorary fellowship. He was Honorable Physician to King Edward and to King George. He was also a magistrate for Carnarvonshire. In 1907 he received the Order of the Bath.

Dr. Edward Woakes, late senior aural surgeon to the London Hospital and surgeon to the Throat Hospital, died on September 30, aged 75. He was M.D., London, 1863. His book on "Deafness, Giddiness, and Noises in the Head" reached a fourth edition in 1896. He had written on "Nasal Polypus in Relation to Ethmoiditis" in 1887 and on "Post-Nasal Catarrh" as early as 1884.

Dr. John Knight, medical health officer for Scar-

borough, died September 16, at the early age of 37. He graduated at Glasgow M.B. with honors in 1896; M.D., 1902; D.P.H. Cantab., 1898. He had been assistant medical health officer at Glasgow and had lectured on forensic medicine and public health in the university. Seven years ago he went to Scarborough and his reports were always valuable. He investigated with great care the infantile mortality from 1876 to 1905. He had a serious operation performed three months ago for malignant disease, but has succumbed.

OUR LETTER FROM THE PHILIPPINES.

(From Our Regular Correspondent.)

PLAGUE IN MANILA AND ILOILO—POSSIBLE INTRODUCTION IN RICE—UNSATISFACTORY MILK SUPPLY—DIMINISHING DYSENTERY—PRISON HYGIENE—PERSONAL.

MANILA P. I., August 30, 1912.

DURING the past few weeks there have been a number of additional developments in the plague situation in the Philippine Islands. So far, however, nothing alarming has occurred. There have been seven deaths in Manila and three in Iloilo.

During the week ended August 24 two additional cases were reported in the city of Manila. One of these occurred in the person of a schoolboy who resided at 352 Calle Echague, and who had a history of having lived, six days before he was taken ill, at 15 Calle Villalobos. It may, perhaps, be remembered that two of the previous cases that occurred earlier in the month were in the same street and block, viz.: 27 and 37 Calle Villalobos, respectively, and that they were also in schoolboys. The other case occurred in the person of a Chinese barber who lived at 417 Calle Poblete, which is within a block of where the first case occurred on June 7, 1912. The rat-catching efforts have now been concentrated upon these two apparently infected centers, but, so far, no plague-infected rats have been found, so that the origin of the infection is still unknown.

All cases have occurred in persons who were permanent residents of the city, and who had, apparently, no connection with the shipping, and were in sections of the city which are well removed from the water front. Both of the last-mentioned cases were of the septicemic type. In the case of the Chinaman, the disease had proceeded far enough to be in reality pyemic in character. Numerous abscesses were found in the lungs, liver, and in the skin of certain portions of the upper extremities. A small, hard papule was found on the left foot, which might possibly have been due to a flea bite, and a specimen obtained by cutting into the papule resulted in a positive culture for plague. The left femoral bubo, however, did not differ from the buboes in other portions of the body, and was regarded as being of the secondary type.

In addition to the cases reported in Manila, there were also two cases at Iloilo, both of which have been confirmed by laboratory methods. This was the first reappearance of plague in Iloilo since the case which occurred on July 5. The Bureau of Health sent the Assistant Director of Health, Dr. Carroll Fox, to Iloilo, to take charge of plague suppressive measures. He took with him Dr. Ruediger of the Bureau of Science to do the necessary autopsies and laboratory work. It is the intention to begin an active rat-catching campaign and to carry out as much rat-proofing as practicable.

Owing to the great shortage of rice in the Philippine Islands, there have been enormous importations of this staple brought to the ports of entry in the Philippines, and, as much of this rice comes from plague-infected districts, it has been suspected that possibly some plague rats or fleas might have been imported with it. An investigation of this matter showed that rice from Saigon could easily be placed on the market in the Philippines within a period of seven days from the time that it left Saigon, and, in accordance with the experience of the Indian Plague Commission, it would even be possible for plague-infected fleas to be introduced through such importations.

The cargo that comes to the Philippines from Japan and China is of such character that it might easily harbor rats, and it would seem most likely that the disease may have been introduced in this manner. On account of the fact that all cases have occurred among permanent residents, and in persons who have not been outside of the islands for years, it does not seem probable that the disease could have been introduced through human beings.

In spite of the constant efforts of the Bureau of Health, the quality of the fresh milk that is placed on the Manila market still leaves much to be desired. One of the reasons for this is, that the cows from which a large portion of the milk is obtained are kept outside of the city limits, and are the property of persons who have, probably, only one cow and that has no fixed place of abode, for which reason it is impracticable to enforce regulations, such as could be done in the United States. Much of the milk, also, comes from the caraballa, or water buffalo. The fats and some other important ingredients in this milk are often double that found in cow's milk. In order to imitate cow's milk, this is frequently diluted one-half, or more, with water. The proteins are then in disproportion, so rice flour is added. If the fats have then been too greatly reduced, cocoanut oil is sometimes added. The resulting mixture is a most insanitary substance. One specimen of milk examined contained 62,391,600 bacteria. Owing to the impracticability of effectually regulating the dairies of so many small milkmen, it is proposed to establish a central pasteurizing plant and require all persons who desire to sell fresh milk in the city to have their milk pasteurized before it is offered for sale.

Since the onset of the heavy rains there has been a constant decrease in the number of cases of bacillary dysentery, and judging by the experience had in former years the disease will probably soon disappear. It either prevails more extensively this year than formerly, or perhaps its presence came more sharply to notice on account of the fact that there was no cholera to absorb all the attention. Laboratory examinations made of stools from cases from many of the provinces, invariably resulted in finding either the Flexner or the Shiga type of organism.

As a result of the recent inspection made of the prisons throughout the provinces of the Philippine Islands, it developed that there was no systematic form of daily exercise for prisoners being carried out. This matter was immediately taken up with the prison officials and arrangements have now been completed to have regular, fixed, physical exercise introduced in all of the jails. At the same time, recommendations were also made, and are being placed into effect, for better ventilation, drainage, food, etc. The improvement in the provincial

jails as compared with five years ago is most noteworthy, and their condition is beginning to compare favorably with similar institutions in the United States.

Dr. E. R. Gentry of the Army Board for the Study of Tropical Diseases has been appointed instructor in histology in the College of Medicine and Surgery, University of the Philippines.

Dr. Elbert Clark, Associate Professor in Anatomy in the College of Medicine and Surgery, University of the Philippines, has been made vice dean in that institution.

Drs. Richard P. Strong and Vicente de Jesus have been appointed by the Philippine Government as delegates to the International Congress of Hygiene and Demography, at Washington, D. C.

CANADIAN PUBLIC HEALTH ASSOCIATION.

TORONTO, September 20, 1912.

THE Canadian Public Health Association, which had its inaugural meeting in Montreal last December under the presidency of Dr. T. A. Starkey, professor of hygiene at McGill University, Montreal, and under the direct patronage of their Royal Highnesses the Duke and Duchess of Connaught and of the Princess Patricia, held its second meeting in Toronto on September 16, 17 and 18, under the presidency of Dr. Chas. A. Hodgetts, of Ottawa, medical adviser to the Canadian Commission of Conservation. The meeting this year was again a complete success, nearly 300 members registering at the place of meeting, the medical buildings of the University of Toronto. Perhaps no association of the kind has ever begun under so favorable auspices or has since progressed with so great rapidity. The Canadian Public Health Association now numbers more members and has larger funds than the American Public Health Association. This is a convincing proof that the public health conscience of Canada has been aroused and that the general public is taking an intelligent interest in the health of the community at large. The fact is recognized that the good health of the people is of the first importance from every point of view and that without a healthy race no nation can prosper. For this recognition the far-seeing policy of those responsible for the control of the association is to be thanked. Membership of the association is open to all, and indeed laymen and laywomen are urged to become members. At the recent meeting almost all grades of society were represented and took a keen interest in the proceedings and discussions.

The first paper read struck the keynote of the meeting, that the rush of immigrants and the rural population to towns must be checked if the country should continue to progress. Dr. P. H. Bryce, Ottawa, Superintendent of Immigration, and an acknowledged authority on the subject, read the paper, which did not fail to impress his hearers with the gravity of the situation. It should particularly interest American readers, for it dealt with a situation almost exactly similar in Canada and America. Dr. Bryce asks the question, How shall Canada save her people from the physical and mental degeneracy due to industrialism as seen in the great cities of older civilizations? How long can a country essentially a producer of raw material by virtue of geographical location and extent of territory still largely undeveloped continue normally to develop and prosper when it has shown a displacement of rural population never witnessed before in the history of any people and an increase in urban population, rapid even beyond the palmiest days of the United States immigration? Dr. Bryce suggested remedies for the existing state of affairs into which there is no space here to enter.

A paper of very marked interest was read by Dr. Bruce Smith, Inspector of Prisons and Charities for Ontario. Dr. Smith discussed hospitals and their relation to the community and to public health. Referring to municipal hospitals, the speaker declared that there was no room in Canada for more hospitals solely under municipal control. He pointed out that the establishment of a municipal hospital destroyed the philanthropic spirit of the people. Local philanthropy was never exercised for such hospitals and persons would as soon think of giving a contribution to the city hall or to the street railway as to the hospital under municipal control and management. Furthermore, he went on to say that ward politics were decidedly incompatible with hospital management. The contrast between municipal hospitals and those directed by a local board was most striking. There was always a discordant note from the executive side of the municipal institution. Everywhere were seen the finger prints of the politician; the ward boss and the political heeler exerted their baneful influence without check or scruple. Fortunately, they had not in Canada the experience which had been so expensive in some American cities during the past few years. Dr. Smith was of the opinion that a private patient should be permitted to have his own physician or surgeon attend him if he wished; the semi-private patient should have the same privilege if he contributed to the hospital a sum equal to the cost of his maintenance there; the patients in the public wards should be attended by members of the staff. To permit patients in the public wards to have their own medical men would cause endless confusion. Hospitals should be for the treatment and care of the sick, for the instruction of students in medicine and surgery, and by the prosecution of research for the furtherance of medical science to the benefit of humanity.

Dr. Chas. A. Hodgetts, of Ottawa, medical adviser to the Canadian Commission of Conservation, was especially insistent that public health matters should be dealt with by the national government. A national government should give direct attention to public health under a bureau, because such a government would have at its command greater resources for the study of the relation of its people to their environment, animate and inanimate, than the provinces or municipalities. Dr. Hodgetts referred in particular to the inspection of the thousands of immigrants entering the country. If the people of the country were satisfied with a medical examination of several hundred persons, often speaking a foreign language, in a few hours by one or two medical men, then they were willing to face a danger which he believed would show itself in the near future; indeed, it was manifesting itself already. This question alone, he thought, provided sufficient argument to justify the establishment of a federal bureau of health. Moreover, there remained to be evolved a scheme for the co-ordination of public health work on imperial lines. It was necessary that every nation of the empire should play its part in building up the highest type of citizens and provide men and women physically fit to hold their own in the commercial struggle which

was not likely to become less strenuous as years passed by. Dr. Hodgetts has always been a strong advocate for good housing, and he declaimed in vigorous terms against the manner of building most in vogue in Canadian cities. He said that it was a disgrace to Canada that immigrants of the lower type should be permitted to live in the cities of Canada under worse conditions than prevailed even in their own lands.

An address on public health affairs was given on the evening of September 16 by Dr. W. A. Evans, late Commissioner of Public Health of Chicago. In the course of his eloquent address Dr. Evans mentioned the difficulty in present circumstances of further reducing the death rate from communicable diseases. He said that in England, however, certain clauses of Lloyd George's Insurance Act would probably reduce tuberculosis by 20 per cent. Moreover, it would encourage the treatment of maternity cases in hospitals and thus reduce the number of newly born infants and of women. It would penalize municipalities whose people were compelled to pay high insurance rates by reason of insanitary conditions and it would deal with manufacturers whose employees suffered in a similar manner because of unhealthy factory surroundings. Health departments could lead the people in dealing with overcrowding in large cities and the housing of the poor. The public could not afford to have the people live under insanitary conditions, nor could they afford to have children brought up amid such surroundings. There had been, he said, in the past a disregard for what actually counted—healthy and efficient men and women. Now there was a demand from manufacturers and business men for efficient laborers capable of producing goods to compete in the markets of the world. Practitioners of preventive medicine could help to meet this demand.

In the section of engineers and architects several excellent papers were read on filtration, sewage disposal, and housing problems. Prominent among these was one by Mr. Race, bacteriologist of the city of Ottawa, on Toronto's filtration plant. In the discussion that followed this paper Dr. Bryce made some pertinent remarks on hypochlorite of lime as a purifying agent for sewage. He said that as an old chemist he could not see how chlorinating sewage was going to destroy the pathogenic germs. To his way of thinking it should not be called hypochlorite treatment, but hypocrisy. The view is now taken by several authorities that too much reliance is now being placed on the purifying effects of hypochlorite on water and sewage. Instead of employing the substance for purifying water in emergencies it is being largely used as a routine mode of treatment. It is argued that filtration should be so efficient that in the usual course of events no other agent should be needed, and ergo that hypochlorite should be relegated to its proper place as an emergency measure. It is pointed out that in Europe by means of efficient systems of filtration typhoid fever has been practically eliminated and that hypochlorite is only employed when filtration is inefficient.

In the section of military hygiene some good papers were read, notably by Col. G. Carlton Jones, P.A.M.C., Director General Medical Service, Canada, on the sanitation of a besieged city, and by Major Lorne Drum, P.A.M.C., on the militia as a factor in public health.

A very instructive part of the program and one that appealed to everybody was the section on social workers. The section was presided over by Dr. Helen Macmurchy, Toronto, and dealt with acutely pending social problems. The question of the prevention of social misery provoked much debate, and individuals from all grades of society took part in the discussion and suggested various means for remedying the present unfortunate state of affairs in all cities of the world.

The programme of the meeting was long and exhaustive and only the principal points have been touched on here. Mention, however, should be made of papers read on tuberculosis by Drs. J. H. Elliott and G. D. Porter, Toronto.

At the closing meeting the election of officers took place. Dr. J. W. S. McCullough, chief medicl officer of Ontario, was elected president, and Regina, Saskatchewan, was chosen as the next place of meeting. The executive committee is as follows: The president; the treasurer, Dr. G. D. Porter, Toronto; the secretary, Major Lorne Drum, Ottawa; Prof. John Amjot, Toronto; Col. G. C. Jones, Ottawa, and Dr. C. A. Hodgetts, Ottawa. Two important resolutions were passed before adjournment: First, the organization urged the formation of a Federal Department of Public Health, and second, a resolution was passed to urge upon the Dominion Government the need for more stringent laws with regard to preventing the pollution of waters which are or may be used as the sources of a public water supply. Shortly before the meeting closed the very sad announcement was made that Mrs. Starkey, wife of Dr. T. A. Starkey, professor of hygiene at McGill University, Montreal, had died somewhat suddenly. Prof. Starkey was well known to members of the association, respected for his wide and intimate knowledge of all matters concerning public health, and liked for his pleasing personality. On his own account therefore the sympathy of all the members went out to Dr. Starkey. To those who had been privileged to know Mrs. Starkey and had had the opportunity for appreciating her whole-hearted kindness and lovable disposition, the news came as a personal shock and by them Dr. Starkey was sympathized with more keenly and with a more intelligent understanding of what her passing meant to him. A resolution was made at the meeting condoling with Dr. Starkey.

The meeting was successful from the scientific, practical, and social standpoints. The city of Toronto extended her hospitality and some individual citizens gave special functions for the benefits of the visitors. Sir Edmund Osler gave an at-home, Lieut. Col. and Mrs. E. Gooderham gave a musicale, and there was also given by the association itself a dinner and smoker.

Progress of Medical Science.

Boston Medical and Surgical Journal.

October 10, 1912.

1. The Surgical Aspects of Fat. J. M. T. Finney.
2. Norway Revisited. C. Kent Austin.
3. The Effect of the Pasteurization of Milk on Babies. J. L. Morse.
4. A Case of Hemianopsia Due to Vascular Disease. H. P. Greeley.

1. Surgical Aspects of Fat.—J. M. T. Finney presents a general review of the subject of the relationship of fat, in its various manifestations, to surgery. In the first place, fat may have a definitely beneficial and conservative effect. One has but to recall the classical picture of the thin, neurotic visceroptotic female patient. By keeping

the latter in bed for a number of weeks and improving her nutrition, one may succeed in producing a deposition of adipose tissue, hoping thereby to anchor the floating kidneys, and splint the other too mobile viscera. On the whole, however, the effect of fat is detrimental rather than beneficial to the work of the surgeon, for there are many ways in which its presence is of real disadvantage in case of a surgical operation. It is a tissue feebly resistant to bacterial invasion. It does not heal readily. It is soft and friable and easily torn and injured, leaving particles of loose fat or oil globules between the adjacent surfaces of the wound, and thereby interferes with wound healing. Where the subcutaneous fat is present, in large amount, frequently to the thickness of several inches, particularly in the case of the abdominal wall, it interferes materially with the manipulations of the surgeon, and may necessitate a very considerable lengthening of the abdominal incision. Surgical or non-surgical traumatism of fatty tissue may lead to fat embolism. Intoxications of non-bacterial nature, arsenic, antimony, carbon monoxide, mineral acids, chloroform, phosphorus, etc.; states of malnutrition; and severe anemias, primary or secondary, lead to fatty degeneration. Necroses occur in fatty tissue in addition to the usual causes of failure of blood supply and irritation in three striking forms: (1) One resulting from acute pancreatitis through the liberation of fat-splitting enzymes seen so commonly in the omentum as to be pathognomonic and exceptionally also in the subcutaneous fat. (2) That peculiar fatty necrosis exhibited by individuals manifesting carbolic acid idiosyncrasy in gangrene and characterized by tough, dirty, yellow sloughs. (3) That resulting from long continued application of ice to the abdomen as in the case of the ice bag for appendicitis.

3. **Effect of Pasteurization of Milk on Infants.**—J. L. Morse notes that there is no unanimity of opinion among the leading pediatrists of this country as to the effect of the pasteurization of milk on its digestibility and as to whether it renders milk less suitable for the feeding of infants. The only conclusions which seem to the author to be warranted from his study of the subject are as follows: It is impossible to determine from the evidence at present available whether or not babies fed continuously on pasteurized milk thrive as well as those fed on raw milk or whether or not the continuous use of pasteurized milk predisposes to the development of the diseases of nutrition. There is sufficient evidence to show, however, that if the continuous use of pasteurized milk is injurious to babies, its possibilities for harm are much less than those of bacteria. All but the cleanest milk should, therefore, be pasteurized before it is given to infants. There is, on the other hand, sufficient doubt as to the innocuousness of pasteurized milk to justify the avoidance of pasteurization whenever the character of the milk warrants it. Finally, one's knowledge of the whole matter is extremely incomplete and unsatisfactory. The question as to the effect of the pasteurization of milk on the nutrition of infants can be settled only by a much more careful and extensive study of the whole subject, both in the laboratory and clinically, than has hitherto been undertaken.

4. **Hemianopsia Due to Vascular Disease.**—H. P. Greeley reports the case of a fisherman, aged 57 years, who had never suffered from any serious diseases, syphilis or gonorrhea, and had never had any previous attack of paralysis or weakness. Three days before examination the patient suddenly noticed some numbness and weakness in his right leg. This passed off almost immediately but was accompanied by tingling and numbness in the right arm which persisted to a slight degree. At the same time he noticed that he became "right" blind and could see no objects toward the right without turning his head. These symptoms were accompanied by a little dizziness and headache over a period of a couple of days. He had no pain and no other symptoms of constitutional disorder; no nocturia; no vomiting. His habits were good as to alcohol and tobacco. Examination of the field of vision showed absent visual power in the right half of both eyes. He could not see his nose at all with his left eye and could not see an object with right eye till it was nearly directly in front of him (with eye directed forward). Ophthalmoscopic examination showed no retinal changes. The retinal arteries were like fine silver cords. The pathological lesion in this case the author judged to be a small hemorrhage or thrombosis in the posterior part of the left internal capsule, permanently affecting the optic tracts.

New York Medical Journal.

October 12, 1912.

1. Blonds and Brunettes in the Tropics. C. E. Woodruff.
2. The Treatment of Diabetes. A. Bassler.
3. Errors in Treatment of Senile Cases. J. L. Nascher.
4. The Specific Complement Deviation Reaction in Gonorrhea. J. A. Gardner and G. H. A. Clowes.
5. Ten Sex Talks to Girls. VIII. I. D. Steinhardt.
6. High Frequency Currents in Eczema. E. G. Charbonneau.
7. Traumatic Separation of the Epiphyseal Beak of the Tibia. G. B. Rhodes.
8. Tuberculous Glands of the Neck Cured by the *X*-Ray. M. Strunsky.
9. A New Theory Concerning the Origin of the Heart Beat. B. Kaufman.
10. A Frequent Surgical Annoyance. J. D. Bloom.
11. Sputum Examinations and Tuberculin Tests at the Gouverneur Hospital Tuberculosis Clinic. Max M. Fladen.

3. **Errors in Treatment of Senile Cases.**—I. L. Nascher enumerates the chief sources of error into which the physician may fall in the diagnosis of senile cases. These sources of error are as follows: (1) Normally degenerating senile organs may present manifestations which simulate symptoms of disease. (2) The manifestations of senile degeneration may be so pronounced as to mask the symptoms of a disease. (3) Symptoms may be so obscure as to be unnoticed or uninterpretable. (4) There may be a misinterpretation of numerous symptoms which, taken collectively, form apparently a symptom-complex. Where such diagnostic errors are made, errors in treatment naturally follow. Mistakes in treatment may also occur through ignorance or neglect of the pathological and clinical differences in diseases occurring in maturity and in senility; of the tendency of diseases to involve allied organs, either directly or through the inability of an allied organ to accommodate itself to the altered function of the diseased organ; of the greater resistance to some pathogenic factors and the lessened resistance to others; and also through ignorance or neglect of lessened innervation, mental depression, exaggerated symptoms, etc. These all fall under the head of errors in diagnosis. A more prolific source of error in senile cases is ignorance of the action of drugs and other therapeutic agents upon the degenerating organs, and neglect of the secondary effects of drugs which in the aged are often more pronounced than the primary or desired effect. A universal error made in dealing with senile cases is the attempt to restore or *cure* normal degenerations. Digitalis is a particularly dangerous and unreliable drug in senile cases. The tincture given *per os* does not manifest any effect upon the circulation until after twenty-four hours; the action of the drug is cumulative; and the latter is useless in an emergency.

4. **Complement Deviation Reaction in Gonorrhea.**—J. A. Gardner and G. H. A. Clowes find that the complement deviation reaction for gonorrhea, when carried out with a polyvalent gonorrheal antigen by the method recommended by Schwartz and McNeil, gives remarkably reliable results and permits of a specific differentiation, even in the presence of syphilis and other diseases exhibiting complement deviation phenomena. The authors' cases giving +++ or ++ gonorrheal reaction, were all undoubted cases of gonorrhea; although it appears probable that in certain severe chronic cases the reaction may persist for some time after a cure has been effected. The cases giving a negative gonorrheal reaction (with

one exception, previously referred to, and acute cases within twenty-one days of infection), failed on examination to show diplococci, and may be considered to be probably free from the disease. The cases exhibiting a +++ Wassermann reaction for syphilis gave for the most part a negative reaction in the gonorrheal series, and when a strong positive gonorrheal reaction was obtained there is little doubt that gonorrhea was, or had been present. It is remarkable that in the authors' series of 185 cases, seventy of which exhibited a strong reaction in the gonorrhea or syphilitic series, only seven cases, or ten per cent., gave a strong reaction in both. A slight reaction is of unquestionable value in diagnosis, but, as in the case of a slight Wassermann reaction for syphilis, should never be considered final. The authors declare that they have up to the present time failed to find a single normal individual exhibiting a definite reaction when a test was made with the gonorrheal antigen.

6. High Frequency Currents in Eczema.—E. G. Charbonneau reports a case of intractable universal eczema in an infant. The disease had resisted many different forms of treatment. There was a marked diminution in the excretion of urea, which fact indicated an error in metabolism. Malnutrition, together with an alkaline urine being in evidence, the author subjected the patient to the powerful stimulating, as well as eliminative effects of the low potential, high amperage, high frequency currents. Lemon juice was given from three to four times daily. The local manifestations were brought under control with the topical application of the high potential currents, alternating with from four to six second exposures to the *x*-rays. Improvement in the condition of the infant's skin began almost immediately after the first treatment and recovery was complete within two weeks.

7. Traumatic Separation of Epiphyseal Beak of Tibia.—G. H. Rhodes notes that the upper end of the tibia is developed usually from two centers, one for the diaphysis, and one for the epiphysis. The epiphyseal center appears at about twelve years of age and unites with the diaphysis at about the twentieth year. The structure destined to form the tubercle of the tibia is usually evolved from the epiphysis by a downward growth, covering the upper and anterior aspect of the head of the tibia, and from its resemblance to a bird's bill, is called the tibial "beak." In some instances, however, this beak, instead of being developed from the epiphysis, develops from a separate osseous center. A total tearing away of the tubercle of the tibia is recorded as a very rare injury. Stimson states only nine cases to have been recorded. A more common lesion is the separation of the beak, or what is termed a "starting" of the epiphysis, by a sudden violent pull on the patellar tendon. The probable reason for the incomplete nature of the fracture or separation, is that the tubercle of the tibia is not the sole point of insertion of the patellar tendon. The author reports a case of this rare condition which came under his observation.

8. X-Ray Treatment of Tuberculous Glands of Neck.—M. Strunsky states that statistics show that only fifty-seven per cent. of cures follow the usual surgical operations for tuberculous adenitis, and that in about twenty-five per cent. of these cases there is a local recurrence. Only the enlarged glands are removed, while small, deep seated but infected glands remain. Scars which are often unsightly follow operations. Many cures of cases of tuberculous adenitis by means of the application of the *x*-rays have been reported of late. The author concludes that a scientific trial of *x*-ray treatment both before and after operations is advisable in every case of tuberculous gland of the neck

Journal of the American Medical Association.

October 12, 1912.

1. Public Health in America. H. P. Walcott.
2. Medical Progress. W. A. Jayne.
3. Intestinal Antisepsis. N. M. Harris.
4. Effect of Iodides on the Circulation and Blood Vessels in Arteriosclerosis. J. A. Capps.
5. Clinical Observations on the Duration of Digitalis Action. C. Eggleston.
6. Antityphoid Inoculation. Three Years' Experience with Its Use in Training Schools for Nurses in Massachusetts. L. H. Spooner.
7. Some Results and Fields of Usefulness of Antityphoid Vaccination. F. F. Russell.
8. Inoculation Against Typhoid Fever in Public Institutions and in Civil Communities. A Further Report. E. W. Hachtel and H. W. Stoner.
9. A Study of the Ultimate Results in the Dispensary Treatment of Tuberculosis.
10. The Mode of Infection in Epidemic Poliomyelitis. S. Flexner.
11. The Production of Active and Passive Immunity to the Pneumococcus with a Soluble Vaccine. A Preliminary Report. J. O. Hirschfelder.
12. A Graphic Menstrual Chart. C. Macfarlane.
13. A Clinical Incubator at Small Cost. C. Emerson.
14. A Pocket Mercury Sphygmomanometer. B. M. Linnell.
15. Successful Transplantation of Ureter from Vagina to Fundus of Bladder Twenty Months After Wertheim Operation in Which Greater Part of Trigon Was Resected. G. Torrance.
16. A New Antrum Irrigator. C. C. Charlton.

1. Public Health in America.—By H. P. Walcott. (See MEDICAL RECORD, September 28, 1912, page 576.)

4. Effect of Iodides in Arteriosclerosis.—J. A. Capps concludes that iodides in therapeutic doses are not active vasodilators and when long continued do not materially affect blood-pressure. Iodides do not alter the viscosity of the blood to any marked degree. The iodides probably owe their beneficial influence in syphilitic arteriosclerosis to the absorption of the cellular exudate in the arteries. The absorption may be brought about by the formation of a proteolytic ferment which is created by the union of iodide with antibody, and which has a selective action on the luetic cellular exudate. It is possible that this selective digestive action may be operative to a lesser degree on the cellular exudate in arteriosclerosis due to other causes than syphilis.

5. Duration of Action of Digitalis.—C. Eggleston emphasizes the facts that the elimination of this drug is slow and that after the disappearance of the traceable signs of its action there remains in an active state in the tissues a very large part of the total digitalis absorbed and acting prior to the cessation of its administration. This period of digitalis action, which cannot be definitely shown to exist by means of tracings or even by clinical signs in the majority of patients, may be termed the period of latent action. It is represented by the slowly falling line below the level of obvious action, either therapeutic or toxic, and its duration is of uncertain length. The author concludes that the drug is more or less firmly fixed in the tissues, probably of the heart, and continues its action in proportion to the quantity present. The return to action in response to a smaller second dose is the summation of the drug fixed in the tissues and that which is subsequently introduced. The phenomena of the persistence of digitalis action is due, therefore, not to the lasting effects of an injury to the heart, but to the actual presence of the drug in the tissues in active form.

6. Antityphoid Inoculation of Nurses.—L. H. Spooner finds that the frequent injections of small amounts of a low-virulence vaccine cause slight inconvenience. They seem to produce a protection among nurses, who are eight times more liable to typhoid fever than the average individual. Their morbidity, under ordinary conditions, is 1.4 per cent., or 19 cases among 1,361. Case morbidity among the uninoculated nurses in hospitals is nearly nine times greater than among the inoculated, subject to similar conditions. No permanent untoward effects have arisen from over 5,000 injections. The blood-picture indicates a certain protection, lasting at least two and a half years. The use of this means of protection has been shown to be safe in two epidemics and very efficient in at least one of them.

7. Usefulness of Antityphoid Inoculation.—F. F.

Russell describes the results obtained in the United States Army with the use of typhoid vaccine, which has been employed in about 400,000 doses. The vaccination has been obligatory and very thoroughly carried out, thus obviating any criticisms that it has been done only on a selected class who would be likely to avoid exposure. Typhoid fever has been practically abolished in the army, only five cases occurring in the first four months of the present year, and only one in a person who had been vaccinated. The other cases were in newly enlisted recruits. The author believes that antityphoid vaccination has an extensive field of usefulness in civil life, especially in hospitals and other institutions, in industrial establishments, in camps of laborers, and among persons patronizing summer resorts or traveling.

10. **Mode of Infection in Poliomyelitis.**—S. Flexner advances the view that the nasal mucous membrane is the avenue of ingress and egress of the virus of this disease in the human species. The virus passes with readiness and constancy from the intact or practically intact mucous membrane of the nose to the central nervous system, and this, next to the direct inoculation of the brain, affords the readiest cause of the disease. Like epidemic meningitis, poliomyelitis appears in a frank and in an abortive or ambulatory form, can be transported by active infected carriers, as well as by healthy passive carriers of the specific microorganism of virus, and fortunately is limited in its extension by a high natural indisposition or insusceptibility to infection existing among persons of all ages.

The Lancet.

October 5, 1912.

1. Universities and Medical Education. H. D. Rolleston.
2. Ventral Hernia, Traumatic or Incisional. W. H. Battle.
3. Acute Anterior Poliomyelitis: An Account of Recent Important Experimental and Epidemiological Investigations in Sweden. W. H. Trethowan.
4. The Relation of the Gastric Secretion to Rheumatoid Arthritis. A. S. Woodwark and R. L. Mackenzie Wallis.
5. A Note on the Material and Technique of Wire Suture of Bone, with Especial Reference to the Suture of the Patella and the Advantages of Iron Wire. E. W. Hey Groves.
6. A Case of Intracranial Tumor. H. Smith, M.D.
7. Tuberculin Dispensaries and Diagnosis Scheme of Classification of Patients Attending the Portsmouth Municipal Dispensary. J. Fairley.

4. **Relation of Gastric Secretion to Rheumatoid Arthritis.**—A. S. Woodwark and L. M. Wallis report the results of their study of ten typical cases of chronic rheumatoid arthritis. Ewald's test-meal, consisting of a piece of dry toast with one pint of weak tea without either sugar or milk, was given fasting, and the stomach contents were removed by a Señorans evacuator one hour later. In all of the cases the amount of free hydrochloric acid and the digestive properties were markedly below normal, and in some cases almost entirely absent. In the absence of signs and symptoms malignant disease of the stomach could be excluded. Apart from the circumstance that in many cases an obvious septic focus—*e.g.* carious teeth—is at hand, the identification of the source of sepsis does not appear to be essential, since opportunities for the introduction of pyogenic microorganisms into the body are manifold and insidious. The absence of hydrochloric acid also explains the frequency with which dyspepsia is encountered in cases of rheumatoid arthritis. The lines of treatment adopted as a natural sequence were to remedy the defect in the gastric secretion, and although these have been employed only for a short period of time, the results have so far been encouraging.

5. **Wire Sutures.**—E. W. Hey Groves for some years past has been much impressed with the superior advantages of iron wire over other metal wires in more common use for surgical operations. As regards silver, the material which is probably more widely used than any other, it has long been known that fractures of the patella united by silver wire are apt to re-fracture. This is often due to the fact that the sutures only grasp a thin shell of cancellous bone, but it has also resulted from the fracture of the wire. But the fact that silver wire not only occasionally, but generally, becomes disintegrated in the tissues has been conclusively proved by recent *x*-ray photographs of the late results of the filigree operation for hernia. There is only one other kind of wire that is at all commonly used in surgery besides silver—viz., aluminum bronze. The author has found this easy and satisfactory to work with, but he has also been struck by the fact in animal experiments that the tissues in the neighborhood of the wire are always discolored by a green deposit which is no doubt a copper compound, and healing is always delayed or altogether absent in these green tissues.

British Medical Journal.

October 5, 1912.

1. The Differential Diagnosis of Surgical Dyspepsias. A. J. Walton.
2. A Congenital Deformity of the Forearm and Its Operative Treatment. H. G. W. Dawson.
3. On the Influence of Meteorological Conditions on the Development of Trypanosoma Rhodesiense in Glossina Moristans A. Kinghorn and W. Yorke.
4. The Etiology and Treatment of Miner's Nystagmus. With a Review of 100 Cases. F. J. Browne and J. R. Mackenzie.
5. Aneurysm of the Anterior Cusp of the Mitral Valve in a Case of Staphylococcal Endocarditis. W. Calwell.
6. A Case of Ulcerative Endocarditis. A. Houlgrave.
7. A Case of Abnormal Pulse Rhythm. W. Johnstone.

1. **Surgical Dyspepsias.**—A. J. Walton discusses the variations of symptoms and physical signs occurring in gastric ulcer, early gastric carcinoma, duodenal ulcer, gallstones, and some cases of appendicitis. Pain is the most important although not always the first symptom, but it is the pain that causes the patient to seek advice. Variations in the appetite in these lesions are common and seem to depend largely upon the changes in the secretion of hydrochloric acid. Vomiting is extremely variable and apart from the presence of blood is of no aid in arriving at a differential diagnosis. The indications for operative treatment are as follows: (1) Any case in which the symptoms are such that one of the above lesions can be diagnosed with tolerable certainty. (2) Any case commencing after the age of 35, which is not markedly relieved by a few weeks' adequate medical treatment. (3) Any case in which the symptoms have occurred after previous attacks relieved by medical treatment, especially if the symptoms have changed from those typical of a chronic gastric ulcer. (4) Any case in which the stomach shows definite evidence of distention, whether the symptoms are those of ulcer or carcinoma. (5) Any case in which a tumor is present suggesting any of the above conditions. (6) Any case with repeated hemorrhages.

Congenital Deformity of the Forearm.—H. G. W. Dawson calls attention to a condition which has apparently not been described in the textbooks. This condition is one of congenital union of the upper end of the radius with the ulna, resulting in a fixation of the forearm in a position of complete pronation and limitation to the usefulness of the arms and hands. The author's case was that of a lady aged 35, in whom the condition was bilateral. A younger brother was also the subject of the same deformity.

Miner's Nystagmus.—F. J. Browne and J. R. Mackenzie point out the following etiological factors in this condition: (1) *Inadequate Light.*—That this is an important cause of miner's nystagmus is conclusively proved by the fact that 99 per cent. of the author's cases had been using the locklamp for a number of years. (2) *Errors of Refraction.*—These occurred in 90 per cent. of the cases. It is interesting to note that a large number of the cases of hypermetropia were those of comparatively young men who had worked only a few years at coal-cutting. (3) *Straining of the Extrinsic Muscles of the Eyeball.*—This is the result of the two foregoing factors. In all the cases the workman had his eyes fixed in a staring, strained

position for long periods, either downwards and laterally, as in narrow seams, or upwards, as in wide seams. (4) *Neurotic Temperament.*—The inability, on the part of a very large number of men with nystagmus, to concentrate their physical or mental powers in any particular line of action suggests that such instability is probably much more the cause than the effect of nystagmus. The severe headaches and aching eyes of which these men complain are accounted for by errors of refraction and straining of the eyes; the vertigo, by incoordination of the ocular muscles; and the conjunctivitis and photophobia, by the sudden frequent change from darkness into dazzling light.

Berliner klinische Wochenschrift.

September 23, 1912.

Extirpation of the Spleen in the Normal Man.—Noguchi refers to the results of extirpation of the spleen in general, but owing to the fact that this is done in various pathologic states the finds show corresponding differences. Hence data must be compiled only from cases of extirpation in the healthy. The case described by the author, however, was not in a perfectly healthy subject, such as might have happened in a traumatic case but in a man with a large lipoma, to which the spleen was hopelessly adherent. The spleen was, however, intact in every way. The patient was subjected to an extended study and the author sums up as follows: The extirpation of the normal spleen in a normal subject gives rise to no disturbance of the economy. The subject lives on for many years and shows no abnormalities. The only significant blood change is a diminution of the polynuclear neutrophiles. During the first year this is offset by increase in the lymphocytes and later in the eosinophiles. In the course of a few years this shortage in the neutrophiles disappears, perhaps because the bone marrow is able to supply them. Five or six years are required before the fluctuations in the neutrophiles and eosinophiles cease. Only a portion of the former are manufactured in the spleen. In affections of the latter organ, such as Banti's disease and malaria, the shortage in neutrophiles is also made up by other organs, in such manner that it is not apparent. Splenectomy appears to throw no light on other functions of the organ. In general the results of splenectomy are slight and transitory.

Perforation of a Postoperative Peptic Ulcer of the Duodenum into the Transverse Colon.—Pinner reports a case of this type, and states that it makes the tenth on record. In all of these cases the conditions were the same, viz.: the perforation followed a retrocolic gastroenterostomy. It is evidently immaterial whether the operation was done on the anterior or posterior wall of the stomach; whether or not a Murphy button or some other resource was used. The jejunal ulcer may occur after any method. The author gives a digression on the causation of peptic ulcer in the jejunum. The general assumption is that a hyperacid gastric juice is at fault, and this is no doubt the chief factor. But not in every case do we find evidences of hyperchlorhydria, and similar ulcers may occur in the normal jejunum in which only alkaline secretions are present. In such cases we have to fall back on local injuries, embolism, arteriosclerosis, etc., as possible factors. Once these ulcers form perforation into the colon is readily intelligible. Diagnosis should not be difficult in theory. After the gastroenterostomy, the entrance of colonic products into the stomach and vomited matter, as well as dysenteriform symptoms make the case a plain one. In practice, however, these symptoms may be quite lacking. In certain cases pains have constituted the sole symptom. The subject of prevention is bound up with that of diet, but authorities are not agreed as to what this should be. Naturally the continued presence of the original disease which led to the operation may demand constant attention. The only treatment proper is naturally a second operation.

The Graves' Syndrome in Pulmonary Tuberculosis.—Von Brandenstein, a woman practitioner, deals with this subject exhaustively. Certain symptoms of pretuberculosis, such as tachycardia might suggest a Graves' element. This, however, is not the contention, the latter being that actual Graves' is more common in consumptives than in patients as a whole. In a tuberculosis sanatorium it was learned recently that about 16 per cent. had Graves' disease, about one-half in a severe form. The present author thereupon investigated some tuberculous material for evidences of this association, and if we include the abortive types she found Graves' disease in nearly 30 per cent. of the women patients and 20 per cent. of the men. All the insignia of the syndrome, including blood pictures were taken into account.

Münchener medizinische Wochenschrift.

September 24 and October 1, 1912.

Chorea Luetica.—Flatau refers to the infrequency of this condition. Since true chorea is an affection of childhood, syphilitic chorea should in theory occur rather in the inherited cases. But choreic affections occur at any age and some of these might well have a syphilitic element. Naturally the biological tests will throw new light on this subject. The author's personal case is of special interest as showing the existence of a familiar type of chorea. Four children of a syphilitic father had been affected with this disease at some time. All recovered after a relatively short illness. The author is unable to find any parallel experiences in literature. Recently, however, he has seen a case himself in which with no actual history of syphilis a positive Wassermann reaction was obtained. In this case there were a history and evidences of some intracranial affection in infancy. Recovery under salvarsan appeared to clinch the diagnosis. No doubt a Wassermann test of all cases of chorea and choreiform movements would reveal a certain element of syphilis.

Recovery after Pylephlebitic Abscesses in the Liver.—Franke relates a case of this character which is a rarity in the temperate zones. The primary lesion was an appendicitis which was severe enough for operation. Later there were repeated chills and a painful hepatic tumor. Laparotomy was performed and an abscess of the right lobe was opened. The urine had contained an abundance of urobilin. There was little or no improvement after evacuation of the abscess, which pointed to the presence of others in the same organ. This was punctured without relief. Chills, urobilinuria, etc., still kept on, and the patient's condition showed the presence of a severe constitutional malady. After long delay another laparotomy was done, whereupon the presence of a second good-sized abscess was readily established in the left lobe. This was evacuated and patient at once improved. There could be no doubt that a pylephlebitis had determined the suppuration in the liver.

Bullet in the Fourth Ventricle for Years.—Jaeger describes a case which is perhaps unique. Patient was a man aged 27, who had attempted suicide with a revolver. The picture which had resulted from the injury was left spastic hemiparesis with ataxia, so-called "blickparalysis," "nystagmus and numerous other disturbances of the eyes, bulbar speech disturbance, compulsory laughter, and attacks of clonus in the flexors of the paretic left arm. Some of these symptoms were doubtless due to the lesions made by the bullet in reaching the ventricle. The general location of the foreign body was readily shown by radiography. Later the patient was subjected to trephining as a hoped-for life-saving resource; for owing to the proximity of the important centers in the medulla there was danger that any destructive process might involve them. Certain disturbances in respiration and deglutition, while slight, caused some apprehension from this viewpoint. The

trephine intervention undertaken by way of the occiput in the hope of extracting the ball not only failed but was followed by fatal collapse. The bullet was found high up in the ventricle in the middle line. The wound of the encephalon had resulted in areas of softening and the formation of cicatricial tissue.

Hypokinetic and Dyskinetic Constipation.—Schwarz, an assistant of Professor von Noorden, has studied constipation extensively by means of radiography. Pictures of fecal distribution in the healthy subject, taken 24 hours after a test meal, show, as is well known, one large mass in the vicinity of the sigmoid, and numerous small discrete masses scattered through the length of the colon. The large mass is known as the *globus pelvicus*. If pictures of constipated subjects are taken, they show the existence of two principal types. In the first we note as late as 48 hours after the test meal no typical globus pelvicus, the feces being still distributed along the colon which latter is often unnaturally long and convoluted. In the other form we see after 48 hours a globus pelvicus, but the colonic feces appear to have been forced backward toward the cecum. The socalled fecal column is therefore separated into two widely separated masses. This corresponds clinically to "constipation of the ascending colon." In the first form, by contrast, the fecal column is continuous, occupying a large portion of the colon uniformly, there being no massing of fecal matter at either extremity. We see here the same old contrast which has obtained in former years as atonic and spastic constipation. The terms employed by the author—hypokinetic and dyskinetic—represent the same conditions. In the former case the bowels may appear to move regularly but the evacuations are only fragmentary, as becomes atony. In the other type there is spasmodic retention.

Tropical Diseases and the Cinematograph.—Olpp states the cinematograph was first used in connection with medicine in the last decade of the nineteenth century, and its history naturally occupies three sharply differentiated epochs. In 1897 began the study of abnormal gaits and movements in general. The movements of the exposed organs of living animals—of the heart and lungs, stomach and intestines—were illustrated. The proper movements of the larynx were also exhibited. The second stage began with the use of an improved technique which rendered visible movements naturally hidden from the eye, notably those of the heart, diaphragm, and digestive apparatus. The third stage necessarily began with the introduction of the microscope. The latter is of especial interest for tropical medicine. In 1908 Reicher first showed the movements of the blood corpuscles, and one year later Comandon made beautiful pictures of phagocytosis in connection with trypanosomes. The author, who studied with Comandon, has carried out his technique in the attempted demonstration of the parasitology of four diseases to which dwellers in the tropics are particularly exposed, viz., Malta fever, the plague, leprosy, and cholera, in all of which the bacterial origin has been demonstrated beyond doubt. But of these four but one bacterium shows active proper movements, the cholera vibrio. A culture of the latter shows in the cinematograph all the characteristic movements. Dutton's spirochete, the cause of African relapsing fever, may be shown in the act of penetrating an erythrocyte. The ticks, which by acting as hosts for bacteria disseminate much disease, may be shown in the act of bloodsucking. It is in depicting the daily life of these insect hosts that the cinematograph may be made of great educational value. The ameba is naturally, as its name implies (changing), an admirable subject for pictures, as is also the blood parasite schistosomum. The larvæ of sensibly large parasites are also among the objects which lend themselves readily to representation in motion pictures

Deutsche medizinische Wochenschrift.

September 26, 1912.

Noises in the Ears.—Wittmaack considers these very fully. Naturally the chief attention is given to cases in which examination of the ears gives negative results, the hearing being unimpaired. The possibility always remains that some insidious organic affection is nevertheless present in an initial stage. An important division is into rhythmic and arrhythmic sounds, the former being chiefly pulsatile in character. A periodic rhythm may be of cardiac or cardiorespiratory origin, but there is also a rhythm, much less steady, which proceeds from the entotic muscles or perhaps from extrinsic neighboring muscles. Thus habitual swallowing could be transmitted to the ear as a sound. Whatever the immediate causes of these sounds they almost all repose on a neuropathic substratum, and subjective ear noises are almost *prima facie* evidences of neurasthenia. Hysteria also furnishes a predisposition. There may be vascular pulsating sounds which are not neurogenic, and in such a case a small aneurysm could be responsible. The author finds that sounds of vascular type occurring in a neurasthenic are especially hard to combat. He has also found that the presence of actual noises in the environment diminishes the patient's perceptions, and that actual rhythmic noises, such as those of a clock ticking, divert his attention. The tendency of these neurasthenics to seek noiseless places is deprecated. The more silent the environment the more the subject notices these sounds of intrinsic origin. The author praises the old empirical remedy hydrobromic acid, and the bromides, and valerians in general. Nearly every local and systemic method of treatment, the author says, appears to have been tested in the attempt to quiet, or at least secure relief from these noises.

Hemoglobinophile Bacteria.—Scheller, writing from Pfeiffer's laboratory, touches upon the controversies in respect to influenza bacilli and pseudo-influenza bacilli. The Koch-Weeks bacillus belongs to the same group as the *B. influenzæ* but differs from the latter. Other closely related germs are the *B. pertussis* and several forms pathogenic to animals. Everything goes to show that the *B. influenzæ* is not the sole germ which causes the grippe, although a difference of opinion obtains as to whether or not the atypical cases represent mixed infection in which the *B. influenzæ* coöperates with one of the other microörganisms. Pfeiffer himself has seen grippe in which the germ which goes by his name was surely absent. The general impression at present is that there is a large group of bacteria characterized by hemoglobinophilia which have a wide range of pathogenicity. Among the diseases attributed to members of this group are such opposites as cholera nostras and meningitis. One can understand why this type of bacterium may show such a range of pathogenicity. The hemophile bacteria which are believed to be members of a common group, says Scheller, may include Pfeiffer's influenza bacillus, the Bordet-Gengou whooping cough bacillus, Cohen's meningitis bacillus, Beck's *Bacillus pneumonicus*, the Koch-Weeks conjunctivitis bacillus, etc., etc.

Action of Mercurials in Spirochete Diseases.—Abelin has shown that the toxicity of mercurial salts is dependent largely on their chemical constitution. Through the introduction of certain atomic groups (sulpho-group, sulphamino group) the toxicity of Hg is depressed. The most toxic combinations are those in which the Hg can be transferred to the ionic state. The aromatic metallic-organic combinations in which the ionic state is not readily assumed are less toxic than the former which comprise the bichloride, calomel and the succinimide. Abelin says that experience has shown that these nontoxic salts are not inferior as spirocheticides.

Insurance Medicine.

SUGGESTIONS TO MEDICAL EXAMINERS.

By the Insurance Editor.

THE EXAMINATION OF WOMEN.

Medical examiners are apt to experience a feeling of timidity when the applicant happens to be a woman and to apprehend that they will incur her displeasure if they ply all the pointed and direct questions which appear in the examination blank, or if they insist on a complete examination. If the same woman were to come to one of these examiners as a private patient, even though an utter stranger, he would not hesitate to put her through a process of rigid catechism in regard to her strictly personal affairs and most intimate relations in so far as they would have any connection with the case, and furthermore, to request her to submit to a physical examination perhaps even more searching than that required when she is applying for life insurance. Allowing for the difference in the circumstances, there is no good reason why a physician should not carry out his task with equal thoroughness in both cases. It may be depended upon that a woman will feel ill at ease and uncomfortable if the examiner gives any indication by his demeanor that he has a delicate and unpleasant mission to perform and that he fears he will wound her susceptibilities. If, on the other hand, he goes about his work in an easy, polite and matter-of-fact way, courteously but with veiled firmness, insisting on the fulfillment of all the requirements of the company, he will not create any occasion for embarrassment or annoyance. Good judgment in forming and putting the questions is also necessary; as, for instance, it might be unwise to bluntly ask a young, refined, delicate-minded, and unmarried woman if she is pregnant. Yet this query appears in the blank and must be answered in every case, whether the woman is married or single, and the information may be easily obtained by securing from her a full history of her menstruations and the date of the last one. The same line of questions will bring out the fact as to whether or not she has ever borne children. When answers brought out in this way have been recorded, however, the applicant should be asked to read that part of the report carefully and to state if they are correct. Modesty, then, may and should be thoughtfully regarded, but this consideration should never be allowed to interfere with thorough work.

It is especially important to observe the following admonitions:

1. The examiners are depended upon to make both the inquiries into the past history and the physical examination with scrupulous care and not to take anything for granted. They will, indeed, soon find that close and persistent questioning is often necessary in order to elicit a full, definite history, owing to the failure of the average woman to realize that she becomes party to a legal contract when she signs an application for insurance or to grasp the strict business principles involved in the making of a contract, and also to her natural tendency to avoid the subject of the diseases and ailments peculiar to her sex.

2. The examiner should adhere strictly to the rule which forbids the presence of a third person (even the husband) while he asks the questions on the examination blank. The object of this restriction is to secure free answers without any restraint or influence. During the physical examination, however, it is proper to have a friend or relative present if the applicant desires it.

3. The applicant should be previously instructed, when possible, to arrange her clothing in such a way as to insure ease, facility, and thoroughness in the examination. A loose gown of some light weight material will answer the purpose admirably. At least, if she has not done this, she should be requested to remove her corsets and other heavy apparel which would interfere with the inspection of the chest and abdomen.

4. The chest measurements should be taken horizontally immediately below the axilla, avoiding the mammæ. The abdominal measurement should be taken at the waist line, as well as at the level of the umbilicus, as requested in the examination blank, care being taken not to include the crests of the ilia. If the abdomen be large below this line, the examiner should ascertain whether it is merely adipose and pendulous, or whether there is a possibility of tumor or pregnancy. The proper methods of measuring are fully discussed in a previous section on "Height, Weight, and Measurements."

5. The urine must be passed at the time of the examination. If this is not possible the examiner must obtain it later himself; in no case should he permit it to be sent or brought to him. The examiner can easily obtain the urine under circumstances which assure him it was voided by the applicant, by arranging to have it passed in his own office or even at her residence while he temporarily adjourns to the next room. The urine should be warm when presented to him and in the container which he gave her for that purpose.

6. A pregnant woman may be examined according to the rules of some companies, usually provided she has previously been through a normal labor.

7. The mortality among insured women is so high when any element of speculation enters the case that the home office staff will carefully criticise an application made by a wife for the benefit of her husband, or by an elderly woman for the benefit of adult children. In these cases, therefore, the examiner should be especially cautious and report confidentially to the medical department any suspicious circumstances connected with the case.

8. The mortality among young unmarried women who are insured is high, and is largely due to tuberculosis. For this reason the examiner is called upon to be very thorough in his examination of the lungs of these applicants.

Albuminuria.—L. Huismans says that mere examination for albumin is no longer sufficient for the diagnosis of nephritis, but a microscopical examination of the sediment should likewise be done. Such examinations have taught us to differentiate acute inflammations of the kidneys, in which the urine is of high specific gravity, is small in quantity, contains much albumin and many and various casts, from more chronic types of the disease with urine of low specific gravity, abundant in quantity, containing but little albumin, and few hyaline or granular casts. It must be remembered, too, that albumin may be absent for weeks in cases of granular kidney and, on the other hand, cases have been published which in life gave signs and symptoms of nephritis, yet at autopsy showed normal kidneys. Moreover, various toxic states and mechanical causes may be responsible for the appearance of

albumin in the urine, and these must be correctly judged in reference to the question of prognosis in individual cases.

Frequently a slight opalescence produced in the urine on boiling is interpreted to mean the presence of albumin, yet it is quite possible that other precipitations may explain this appearance, and further tests, not often performed in the routine of insurance examinations, are necessary. Huismans tells of an applicant who was accepted at much higher rates than his age demanded, some fifteen years ago, because of the "slight trace of albumin" found in the urine. Fifteen years later this patient was examined by the author and no albumin was found, but a somewhat deceptive precipitation of crystals instead. Moreover, traces of albumin have been found in quite healthy persons after some unusual circumstances, *e.g.* after a prolonged march in soldiers, soon after very cold baths, during menstrual periods in women, after sexual excesses, etc. Orthostatic albuminuria, too, is not a very rare occurrence, and its significance not fully understood. Such persons should be insured, though a higher rate may be advisable.

Huismans tells of another patient in whose urine albumin was always found by another physician, while Huismans could discover none. Finally, he learned that the other physician happened to have samples of urine passed by the patient after fairly long bicycle rides, and the physical exertion may have accounted for the appearance of albumin. Of course, the appearance of albumin was somewhat abnormal, but Huismans' view of the case was, of course, less grave than the other doctor's. Huismans warns, too, against using very delicate reagents, such as Spiegel's, for most normal urines will show very faint traces of albumin with such reagents. The simple test by boiling and addition of nitric acid is probably the most dependable, for this is not very delicate and does away almost completely with the possibility of mistaking phosphates for albumin. The use of Esbach's reagent is somewhat dangerous, unless great care is used in examining the sediment. Crystals made up of picric acid of the reagent and certain elements of the urine which are deposited at the bottom of the albuminometer should not be mistaken for a precipitate of albumin.

If a patient in whom albumin has been found appears again for examination, other symptoms should be looked for to judge the significance of the albuminuria. The heart must be examined for hypertrophy, the second aortic sound for accentuation, and blood pressure should be carefully measured. Great importance should be attached to increase of blood pressure; if ten years or more after albumin has been found in the urine the blood pressure of a patient is not found increased, the interpretation of the urinary findings may be much less grave than otherwise.—*Blätter für Vertrauensärzte der Lebensversicherung*, Volume III, No. 1.

Life Insurance and Carious Teeth.—Nodine continues his remarks in proof of the intimate relation between health and a healthy mouth, disease and carious teeth, in urging that a dental examination should be made a part of the medical examination for life insurance. He says that rheumatic fever is an acute or attenuated general infection accompanied by a toxemia, with a variety of local manifestations, principally arthritis and carditis. He thinks that there is no doubt that the disease is caused by a microorganism, and that it is most probable that the mouth is its portal of entry into the system. The relation of the tonsils to rheumatism has been well proved, and these are most probably infected from carious teeth, foci of pyorrhea, etc. In addition such pathological conditions of the teeth allow other infective organisms to reach the organism and break down its normal resistance to such infections. Faulty teeth, too, lead to impaction of food particles in the mouth, and their decay, and interfere with the proper preparation of food for digestion in the stomach and intestines.

He thinks that infection may be the cause or one of the causes of diabetes and such infection could easily take place from a septic mouth. In any case, the resistance of the organism to infection is very much diminished in the course of a diabetes, and the existence of a septic mouth makes the danger of infection very actual in such cases.—*Oral Hygiene*, Vol. II, No. 7.

Relationship Between Life, Accident, and Health Insurance from a Medical Standpoint.—In the opinion of David H. Keller of Chicago the doctor who has to do with the consideration and disposition of applications and indemnity claims in the accident and health insurance field has always had a profound respect for the medical director of the life insurance company. This respect, however, is not always reciprocal, and Dr. Keller has found that the medical director of the life insurance company in his attitude toward the medical director of the accident and health insurance company, has been wont to assume a position of condescension. Such a position is unwarranted seeing that the matter of passing upon applications for life insurance is like taking candy from children, when compared to the consideration of applications and claims under accident and health policies. According to the writer the medical examiner for the accident and health insurance company must be all that the medical examiner for the life insurance company is, and also a Sherlock Holmes, and a "strong arm" man to boot.

There are few good accident and health insurance examiners who are not also good life insurance examiners, but there are many excellent life insurance examiners who are worthless as examiners of claimants under accident and health policies. This statement is no reflection on the latter. He is only a scientist. The successful medical examiner for accident and health insurance is an artist who has acquired science. Again, unlike the former the latter must count his very talents as a liability, if he employ them. It is not often that the individual whose application for life insurance is rejected holds a grudge against the examiner who reports his impairments, but woe to the accident and health insurance examiner when he accomplishes aught to reduce the amount of indemnity to which a claimant believes or pretends to believe himself entitled. Every rejected claim makes an enemy for the casualty company's medical officer. As private practitioners we have all known, Keller says, the sense of resentment which obtains when our patient is catechized and scrutinized by "the insurance company's doctor," and he says the accident examiner should not be unmindful of the fact that the local medical examiner for the casualty company is likely to make some doctor "sore" every time he examines a client, and that he deserves a lot of credit while taking the chance.—*Proceedings of the Second Mid-Year Meeting of the Medical Section of the American Life Convention.*

Book Reviews.

THE PRACTICAL MEDICINE SERIES, Comprising ten volumes on the year's progress in medicine and surgery. Under the general editorial charge of GUSTAVUS P. HEAD, M.D., Professor of Laryngology and Rhinology, Chicago Post-Graduate Medical School, and CHARLES L. MIX, A.M., M.D., Professor of Physical Diagnosis in the Northwestern University Medical School.

Volume I—GENERAL MEDICINE. Edited by FRANK BILLINGS, M.S., M.D., Head of the Medical Department and Dean of the Faculty of the Rush Medical College, Chicago, and J. H. SALISBURY, A.M., M.D., Professor of Medicine, Chicago Clinical School. Series 1912. $1.50. Chicago: The Year-Book, Publishers.

BOTH specialists and general practitioners desire to be well informed regarding all advances in medicine, but find the mass of literature far too voluminous to admit of even partial reading. Such a volume as this, with its brief reviews of the year's literature, is therefore most welcome.

Volume II—GENERAL SURGERY. Edited by JOHN B. MURPHY, A.M., M.D., LL.D., Professor of Surgery in the Northwestern University; Attending Surgeon and Chief of Staff of Mercy Hospital, Wesley Hospital, St. Joseph's Hospital, and Columbus Hospital; Consulting Surgeon to Cook County Hospital and Alexian Brothers Hospital, Chicago, Illinois. Series 1912. $2.00. Chicago: The Year-Book Publishers.

Surgical literature is being constantly enriched by many interesting and important papers on the newer methods of diagnosis and treatment and on rare surgical condition. This fact is clearly illustrated in this volume, which offers in concise form all such valuable material.

Volume III—THE EYE, EAR, NOSE AND THROAT. Edited by CASEY A. WOOD, C.M., M.D., D.C.L.; ALBERT H. ANDREWS, M.D., and GUSTAVUS P. HEAD, M.D. Series 1912. $1.25. Chicago: The Year-Book, Publishers.

This book reviews briefly the literature of 1911, dealing with eye, ear, nose, and throat diseases, and discusses all the advances made in these specialties. It should prove useful to the busy practitioner.

THE LIFE AND WORK OF WILLIAM PRYOR LETCHWORTH, STUDENT AND MINISTER OF PUBLIC BENEVOLENCE. By J. N. LARNED, Author of "A Study of Greatness in Men"; "Books, Culture, and Character," "Seventy Centuries of the Life of Mankind." Editor of "History for Ready Reference, etc." Price $2 net. Boston and New York: Houghton, Mifflin Company, 1912.

THE record of a life devoted to the service of humanity is of general interest. The life of this philanthropist has also, for physicians, a special significance. His great work for the insane and epileptic and for the feeble-minded in New York State brought him into contact with medical men and medical thought, and his philanthropy contributed to the practical achievement of certain reformatory measures which are based on practical and scientific principles. Mr. Letchworth was a member of the State Board of Charities from 1873 to 1896. His activity in three special fields was noteworthy: First, the improvement of the homeless, wayward, and delinquent child; second, reforms in the care and custody of the insane and epileptic; and third, the preservation and maintenance of natural scenic and historic sites. During his service as State Charity Commissioner children and insane were rescued from the county poor houses; industrial schools were evolved from the old prison reformatories; colonies were created for the proper hygienic treatment of the epileptic; and the beautiful Letchworth estate of a thousand acres, called "Glen Iris," purchased to preserve the three falls of the Genesee River, was conveyed to the State of New York to be forever maintained as a public park. The writings and publications of this public-spirited man number over sixty-five. "The Insane in Foreign Countries" and "Care and Treatment of Epileptics" are among the most important. "Letchworth Village," a recently created establishment on the colony plan, for epileptic and feeble-minded, was named in Mr. Letchworth's honor. The biography is evidently authoritative, and its style entertaining. There are sixteen illustrations.

SEXUAL IMPOTENCE. By VICTOR G. VECKI, M.D., Consulting Genito-Urinary Surgeon to the Mount Zion Hospital, San Francisco. Fourth Edition, Enlarged. Philadelphia and London: W. B. Saunders Company, 1912.

THIS volume contains a description of the anatomy of the male genital organs, the physiology of the sexual act, a discussion of the subject of internal secretion, the different forms of impotence and their diagnosis and treatment. In discussing the subject of treatment the author reviews the various methods from time to time employed and relates his experience with them, giving special attention to the newer methods of suspension and hypnotic suggestion and entering a protest against urological atrocities committed on the complicated and delicate structures of the deep urethra. This part of the work will be of interest to the urologist. The author prides himself in having laid bare the truth and having plunged to the very bottom "to see what the gods have covered with darkness and horror." He seems to have found continence only in the chimera of the idealist, and while he warns against the responsibility of advising so serious a remedy as marriage for impotence he does not feel the same qualms in prescribing an illicit intercourse where this holds out a promise of helping the patient. The moralist will take issue with him on questions of ethics and will feel that while he may have discovered the whole truth as it is at the bottom he has missed some higher up which would be more palatable and more in accord with progressive teaching and sex hygiene.

MOTIVE-FORCE AND MOTIVATION-TRACKS. A Research in Will Psychology. By E. BOYD BARRETT, S.J., Ph.D., Superior Institute, Louvain. Honors Graduate, National University, Ireland. Price, 7s. 6d. net. London, New York, Bombay and Calcutta: Longmans, Green & Co., 1911.

THIS is a distinctly technical thesis based largely upon experimental researches carried on for two years in the Psychological Laboratory of the Superior Institute of Philosophy at Louvain University. The standpoint adopted in the book is therefore strictly empirical and experimental. The introspective method of the Würzburg school is followed, and the terminology of modern psychology is employed. The book is especially valuable to those engaged in the study of the will and of character. The general reader, however, will find in it much of real interest, even if he is unable to follow intelligently the technical side. After an introduction describing the backward state of a will psychology, and the pressing need of one, the author devotes himself, chiefly by experimental researches, to the analysis of various phases of the choice-process. The plan of the book is the discussion of motives, motive-force and its measurement, motivation-tracks, the evolution of motivation, automatism, hesitation, hedonism, the relativity of values, and the psychology of character. The aim of education at the present day tends, as the author states, toward a training of the will and of the intellect, rather than to a mere burdening of the memory. A science of man has not yet been produced. The problem of character-formation and will-education, therefore, presents innumerable difficulties. It is truly calculated to gain a measure of practical assistance, however, from this research which is a step in the direction of an efficient psychology of the will.

TEXT-BOOK FOR NURSES. Anatomy, Physiology, Surgery and Medicine. By E. W. HEY GROVES, M.S., F.R.C.S., Assistant Surgeon, Bristol General Hospital; Clinical Lecturer, University of Bristol, and J. M. Fortescue-Brickdale, M.A., M.D., Assistant Physician, Bristol Royal Infirmary, Clinical Lecturer, University of Bristol. London: Henry Frowde, Oxford University Press, and Hodder & Stoughton, 1912.

A PERUSAL of this volume, without reference to the title page, would lead one to pronounce this book an admirable résumé of the essentials of anatomy, physiology, surgery, and practice. As such it can be most unreservedly recommended to the junior practitioner or senior student. Unfortunately the title page announces that the work is intended as a text-book for nurses. So far as the quality of the mental pabulum here provided is concerned the nurses could have nothing better. But if, in addition to the scientific knowledge contained in this work, they are supposed to learn and to practice what may be called practical nursing, we wonder when and how they will acquire this extra knowledge. This volume contains nothing on nursing, materia medica, dosage, solutions, and many other subjects most important for nurses. With this book as a basis the nurse will be in a fair position to see that the doctor in (nominal) charge of the case does his duty; but the patient would probably fare infinitely better at the hands of one who had less theoretical information and more practical knowledge of the details of nursing. We are well aware that there are two opinions on the question of the necessity or desirability of the nurse acquiring the education of a medical student; and extremists in this matter will pronounce the present volume either ideal or useless.

Society Reports.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON SURGERY.

Stated Meeting, Held October 4, 1912.

DR. LUCIUS W. HOTCHKISS IN THE CHAIR.

Case of Partial Resection of the Stomach for Carcinoma.—Dr. HERMANN FISCHER presented this patient, a man 30 years of age. The patient gave a history of chancre about ten years ago which was treated with inunctions of mercury. His present trouble dated back about one and one-half years previous to his admission to the hospital. For ten months previous to his admission he had had gastric distention and vomiting which occurred five or six hours after eating. His appetite was fairly good. He was emaciated and had a large round tumor in the epigastrium. The gastric secretion showed free hydrochloric acid, but no blood and no lactic acid and there was no coffee ground vomiting. A few salvarsan injections were given and mercury subcutaneously, but without effect. At operation a carcinoma was found at the pyloric end of the stomach and an hour-glass stomach. The mass was fairly movable and a resection was done after the Kraske method. Some of the pancreatic tissue was also cut away. A small fistula developed from the seventh to the ninth day after the operation, but this soon closed. It was now nine months since the operation was performed and the patient was in good health.

Appendectomy, Ureterolithotomy and Herniotomy.—Dr. W. H. LUCKETT presented this case. The patient was a man 46 years of age, who had had a right inguinal hernia of five years' standing and pain for two years. Dr. Luckett thought he could differentiate pains referable to the appendix and to a right ureteral calculus. Both the appendectomy and the lithotomy were done through the same incision. The appendix was found chronically inflamed, and after its removal the peritoneum was closed and the calculus was removed retroperitoneally. The stone was small. The same incision was then continued down over the hernia. The entire operation was completed in less than forty minutes and the patient made a good recovery.

Two Cases of Colles' Fracture.—Dr. GEORGE H. HOUGHTON of Albany presented these cases.

CASE I.—This case was of particular interest because the patient, when a boy 12 years of age, had fractured his left wrist and there was apparently arrested growth. The right wrist had been broken in the same way and it was interesting to note the different results obtained by the different ways of treating the fractures. Dr. Houghton exhibited an *x*-ray picture of the injury, showing several lines of fracture; the styloid process and the end of the ulna were broken and there was distinct crepitus everywhere in the wrist. In dressing this fracture he used the splints which he had devised. Perfect function had been secured and the arm was as strong as ever.

CASE II.—This patient had a very bad arm. Dr. Houghton did not see him until the third day after the fracture occurred when the arm was much swollen. Both bones were broken and the lower segment was driven inward. The *x*-ray exhibited showed both bones broken and much spreading on both sides. In this case also he had secured perfect results. Both men were carpenters and could drive nails into the ceiling, a task few could accomplish after having sustained a Colles' fracture.

A New Principle in Esophagoscopy and Gastroscopy.—Dr. RICHARD LEWISOHN presented this communication which contained a description of his new esophagoscope and the method of using it, and an outline of the work that he had done on a gastroscope which was not yet perfected. After pointing out the disproportion between the work done in cystoscopy and that done in esophagoscopy he said that this disproportion could only be explained by the fact that as yet it had been impossible to construct an esophagoscope that could be used with the same safety and reliability as the cystoscope. It was not that there was no demand for such an instrument. The great number of instruments hitherto constructed fell into two distinct groups: (1) straight tubes, which were introduced with the head in hyperextension; and (2) jointed tubes, which were only straightened after their introduction into the esophagus. The straight tubes, in spite of their simplicity of construction, were very unpopular because their introduction was associated with the greatest discomfort and even danger to the patient. Instruments of this character did not take into consideration the normal rectangular formation existing between the oral cavity and the esophagus which was only partially obliterated by hyperextension of the head. As for the dangers it was well known that their use had been followed by a large proportion of perforations of the esophagus which resulted fatally. The same danger existed with the jointed tube. On the basis of these observations Dr. Lewisohn concluded that a satisfactory esophagoscope must fulfill the three following main requirements: (1) The introduction must be possible in the normal position of the head. (2) The instrument must be so constructed that it actually passed into the longitudinal axis of the esophagus and not at an angle to this axis. (3) The esophagoscope should only be passed downward along the esophagus under guidance of the eye to avoid perforations. The instrument which Dr. Lewisohn had devised, based on these considerations, consisted of two portions which were joined together at almost a right angle; the horizontal portion which lay in the mouth of the patient during examination, and the vertical portion consisting of a tel-scope, composed of six separate tubes which might be pushed down into the esophagus as far as necessary. The horizontal portion consisted of two parts which could be separated by traction in a horizontal direction. These two parts each had a hemicylindrical canal which formed a tube. In this tube the spring which was necessary for the manipulation of the telescope rested. Thus the spring lay entirely outside of the main horizontal tube and did not disturb the passage of the light rays. The lamp of the illuminating apparatus was copied from one constructed by Fischer of Freiburg, but it gave a much more intense light. A very intense light was necessary because the rays were broken three times before they reached the eye of the observer. Directly under the lamp a condenser was placed which concentrated the rays. The rays then fell on a mirror which was movable on a horizontal axis. From this mirror they were thrown to a second mirror which lay at the junction of the horizontal and vertical portions of the instrument. This second mirror interrupted the rays in such a fashion that they fell directly downward in the telescope. The telescope was the essential novelty of this instrument, and consisted of six steel tubes, the walls of which were 0.3 millimeters thick, and which could be projected into the esophagus. The mechanism of these tubes was very complicated. At the lower end of the innermost tube was a metal ring which could be unscrewed and which opened the lumen of the esophagus when the telescope was pushed down. This ring also facilitated the downward passage of the telescope. Attached to the lower part of the upper tube were two metal guides which greatly facilitated the introduction of the instrument. The length of the telescope was thirty-three centimeters when opened. The diameter of the six tubes varied from twelve millimeters for the lowest tube to seventeen millimeters for the uppermost. It would be possible to add another tube with a diameter of eighteen millimeters which would add five centimers to the length of the telescope and make it possible to pass the instrument into the stomach. On account of the angular construction of this instrument it was necessary to devise an aspirator somewhat different from that ordinarily in use in the straight esophagoscope. He had succeeded in constructing such an instrument so that the aspiration of mucus was as easy and certain as with the straight tube. He demonstrated a forceps and said he hoped soon to be able to present one which could be used as successfully as that now used in the straight tube. In examining the patient with this instrument the method was as follows: The patient was placed on a chair, the head being supported by an assistant. The larynx was anesthetized with a 10 or 20 per cent solution of cocaine and then the introduction of the esophagoscope accomplished in two stages. The instrument was first "anchored" in the esophagus and then passed into the deeper parts of the esophagus. Although the anchoring of the instrument in the mouth of the esophagus was performed blindly, the second stage of the process was only undertaken under the guidance of the eye. It was essential that the lumen of the esophagus be always kept in the field of vision. The advantages of this right-angular telescope, as compared with the straight tube were very marked. It was immaterial whether the patient had an easily movable cervical spine or a full set of teeth or not. The head was not brought into any strained position. The finding of the entrance to the esophagus occurred here automatically and blindly. The opening of the telescope was

so simple because this instrument was the first that could be really pushed down into the longitudinal axis of the esophagus and not at an angle to the axis. In looking for an incipient cancer the telescope could be pushed down at least half a dozen times and the entire organ thoroughly inspected. While esophagoscopy would always be for the majority of patients a more disagreeable procedure than cystoscopy, there was no comparison in the disagreeableness caused by this new instrument to the extreme discomfort produced by the straight tube esophagoscope. Dr. Lewisohn then showed that there was need of such an instrument for the diagnosis of incipient carcinoma of the esophagus and that it was also of importance in differential diagnosis. He was convinced that esophageal disease was by no means infrequent, and that when their diagnostic methods had reached a greater degree of perfection it would be seen that the lesions of the esophagus were proportionately of common occurrence. The author then reported a number of cases in which, after other methods had failed, he had by means of this instrument been able to make a correct diagnosis. He then described his gastroscope to which he had applied the principles above expounded. The difficulties to be overcome in successful gastroscopy were greater than in esophagoscopy, as it was absolutely necessary for the inspection of a hollow viscus that the illuminating and optical apparatus could be brought easily to all portions of the wall of the organ and the anatomy and physiology of the stomach on the one hand and the relations existing between the esophagus, spinal column, and stomach on the other made this extremely difficult of accomplishment. The vertical position of the stomach also interfered with the free mobility of the optical apparatus. The repeated inflations which were necessary always brought different portions of the stomach into the visual field, thus making impossible a thorough inspection of that portion which might be of special interest. Dr. Lewisohn said that his efforts in the construction of this instrument had convinced him that they could and must develop gastroscopy which was as yet in its infant stage.

Dr. Willy Meyer said there could be no doubt but that this instrument meant a great step forward. Dr. Lewisohn deserved great credit for the effort and patience, to say nothing of the expense, incurred in making this improved instrument. Whoever had had a patient who could not bend his head back and had found it absolutely impossible to make an examination with the straight tube, if he but once saw Dr. Lewisohn work his instrument, must admit that it was a great step forward. Dr. Lewisohn was right in what he had said about the danger of the straight tube. Even the most careful men had made perforations. He had taken great pleasure in witnessing the ease with which Dr. Lewisohn made examinatoins with this new instrument. The instrument could be introduced in a few seconds and the patient could stand it comfortably for twenty-five or thirty minutes.

Dr. Henry H. Janeway said he was much interested in this new instrument and thought Dr. Lewisohn deserved a great deal of credit. Examinations of the stomach and esophagus should be made more frequently than had hitherto been possible. He said he could not discuss the new instrument, but that remarks made about the straight instrument showed that some of them were not familiar with it. He had used the straight instrument in making about one hundred examinations and a number of the patients, when questioned said they would be willing to take the examination again. There was everything in the way the straight tube was used. There was no excuse for using force. Of course there was more discomfort where there was kyphosis, but here the examination might be made under an anesthetic. There was no excuse for making a perforation. Occasionally he failed to get a piece of tumor with the straight instrument, but, while he had been prejudiced against it he had been surprised with his own success in using it. One could see the vertical portion of the stomach and the cardia with the straight tube.

Dr. Wolff Freudenthal said he had used many of the best instruments and he preferred Bried's. There were more accidents after esophagoscopy than after bronchoscopy. He related one instance of sudden death after bronchoscopy. It was difficult to introduce the instrument in a certain percentage of cases with curvature of the spine, but he could overcome the difficulty in 99 per cent. of the cases.

Dr. William H. Stewart said he had recently heard a paper read by a Pittsburgh physician in which it had been pointed out that the introduction of an instrument would be greatly facilitated by placing the patient on the table and allowing the head to hang over the edge of the table.

Dr. Lucius W. Hotchkiss said he thought the instrumnt presented was an important advance and that the sectilon had been fortunate in having Dr. Lewisohn show them his work.

Dr. Lewisohn, in closing the discussion, said esophagoscopy was not popular and that it had never been popular. Some good experts could do a straight esophagoscopy, but they were very rare. The straight esophagoscope could be used by only a few and they certainly needed an instrument that could be used by a greater number with some feeling of security.

Reducing and Treating Colles' Fracture by Means of a New Device or a Metal Splint.—Dr. George H. Houghton of Albany read this paper which he illustrated by lantern slides. He said that it had been his endeavor to construct a splint along normal anatomical lines for fractured wrists and lower forearms that would come in contact, support, fit snugly, and produce equal pressure over or along injured parts, and that could be adjusted in such a manner that it could be comfortably worn by the patient and at the same time produce practically a normal result. In order to accomplish this he had first to secure a forearm, hand and wrist of full medium size as nearly anatomically perfect as possible; this was no easy matter, but having secured the specimen the next step was to place it in plaster-of-Paris. The position of the arm, wrist and hand in securing this plaster cast was all important. The wrist had to be flexed at least one-half of its normal capacity; the forearm had to be well flexed at the elbow and in a prone position. The elbow had to be raised to such a position that the humerus was at or near right angles to the body. The forearm had to be rotated well inward. He had chosen aluminum as the metal most suited for this purpose, as it was capable of being rendered aseptic, was light, strong and practically non-corrosive; it also had some spring to it and retained heat for a long time. The splint was divided into two equal parts and could be adjusted by means of lugs and screws so as to fit any arm. After determining the proper adjustment by fitting the splint to the uninjured arm, the patient was placed in a low stool beside a firm box or table. The arm was flexed at right angles, elbow elevated at right angles to the body, forearm rotated well inward, and the arm placed in the splint. Then the operator placed his thumbs firmly over the seat of fracture and forced the bone or bones into normal position. As a rule, one would sense a pronounced crepitus as the bones were forced into position. If the fracture could not be reduced in this manner recourse might be had to a lever action. A strip might be placed around the splint above the middle lug and a firm piece of felt placed over the seat of fracture and a normal adjustment secured by pressing the lever downward. After satisfying yourself that the impaction was broken up and the fractured parts properly adjusted, a piece of silence cloth was placed over the entire inner surface of the splint and fastened in position by means of stitching along the edge of the splint through the perforations. Then, with the aid of an assistant, the arm was adjusted to the splint and adhesive plaster placed over the hand. Extension and counter extension were obtained by having the assistant grasp the upper arm firmly with one hand and with the other force the splint in the opposite direction, while the adhesive plaster was applied to the upper end of the splint and across the fleshy part of the upper forearm. It was not necessary to use any great amount of force in making extension and counter extension, ten or twelve pounds pressure being sufficient. A firm piece of felt was then placed over the fracture and fastened with adhesive plaster, leaving the end of the ulna exposed; pressure over the lower end of the ulna caused the patient pain. By keeping the injured member elevated as much as possible the swelling should disappear almost entirely in three or four days. If the patient suffered pain after the first two or three days the fracture was not sufficiently reduced or the wrist was too severely extended. The arm should be removed from the splint on the third or fourth day, bathed, powdered, and adjusted. This should be repeated every two or three days thereafter. At the end of ten or twelve days certain exercises were begun, but no specific rules could be laid down for the manipulation of a fractured lower forearm or wrist, as all depended on the amount of injury to the member, the age of the patient, and the location of the injury. After showing the relation of the bones of the forearm and wrist to the splint, which showed that the device was not only constructed along normal anatomical lines but also embodied scientific principles, the speaker drew the following conclusions: 1. The arm and wrist were plumbed when properly adjusted. 2. A median line drawn along the dorsal aspect of the forearm, wrist, and hand, represented its center of gravity. 3. Tension along

said line was directly through its lifting power, and under these conditions could not deviate from a straight line. 4. If sufficient tension was applied to separate the fractured parts slightly the healing process would progress favorably and there would be practically no shortening by absorption of bone tissue. The most comfortable conditions possible were presented in this splint for making extension and counter extension; the hand was placed in a form specially shaped to receive it, a part of the fingers extending over the edge in depressions formed to receive them; the palm of the hand rested on a perfectly natural surface, the ball of the thumb coming into contact with a depression formed to receive it; the outside of the hand rested against a like surface. The obtuse angles to accommodate the hand and flexed condition of the wrist made a holding surface so extensive that there could be no undue pressure at any given point. The elevated sides of the splint received the wrist and retained it in a normal position.

AMERICAN CLIMATOLOGICAL ASSOCIATION.

Twenty-ninth Annual Meeting, Held in Hartford, Conn., June 10, 11, 12, and 13, 1912.

(Special Report to the MEDICAL RECORD.)

THE PRESIDENT, DR. A. M. BLACKADER OF MONTREAL, IN THE CHAIR.

(*Continued from page 731.*)

Wednesday, June 12—Third Day.

An Impression of the Seventh International Congress on Tuberculosis, Held in Rome, April 14-21, 1912.—Dr. A. J. RICHER of Ste. Agathe des Monts, Canada, said that in spite of its sessions and the great number of contributions brought forward, this congress had not been productive of anything that could mark it as epoch-making. There were many contributions that were excellent but none that were exceptionally distinctive. The burning question of human and bovine tuberculosis supplied most of the material for discussion at the conference; when a compromise was finally reached in the way of resolutions they did not differ very materially from those of the Washington Congress. In the field of therapy many contributions dealt with artificial pneumothorax as giving very encouraging results in suitable advanced cases where the usual methods had failed. The action of solar light (heliotherapy) was made the subject of quite a number of papers and here the cases reported belonged to the surgical class. Rollier of Leysin attracted much attention by showing results obtained at his clinic in bone and joint tuberculosis by exposure to the sun's rays. Tuberculin-therapy and chemotherapy were fully discussed but no new light was thrown upon these modes of treatment. The organization of the congress was not as complete as had been hoped. The delegates from both American continents were royally looked after. It was decided to hold the next congress in London five years hence.

The Rôle Played by Resistance in Pulmonary Tuberculosis.—Dr. A. J. RICHER of Ste. Agathe des Monts, Canada, said that during the past ten years there had been a growing tendency toward the belief that tuberculous infection occurred during the first years of life. Clinically, the histories of patients had given his conception sufficient coloring to influence some clinicians to the partial acceptance of such a view. It remained for Calmette and his collaborators to give final conclusive proof in a series of experiments and tests performed at the Pasteur Institute at Lille which were summarized in *La Presse Médicale*. The conclusions might be summed up in the following manner: (1) Almost 90 per cent. of the children of school age reacted to tuberculin (cutaneous reaction). (2) The majority of implantations were of human origin. (3) With few exceptions, the pathway of infection had been the digestive tract. (4) Infection in early life conferred a degree of immunity if the doses of infective material were not large or rapidly successive. The resistance offered by children suffering from pulmonary tuberculosis was an incontestable fact; the only tendency was toward a spontaneous cure. Why, then, should this same disease in adults so frequently terminate fatally? Was it that the immunity of childhood had exhausted itself? Was it because the tissues of the adult differed so materially from those of the child? These two questions must for the present remain unanswered. Paterson of Frimley said that his method of treatment was based upon the question of resistance, how it could be raised by exercise and graduated labor until fever reactions occurred; the latter was controlled not simply by rest in bed but by complete immobilization. The system offered the following advantages: (1) The duration of treatment was about half what was needed for the continuous rest treatment. (2) Relapses were almost nil. (3) Employment during the treatment prevented the breeding of discontent and apathy. (4) Occupation of body and mind during the treatment permitted the patient to resume his former work untainted by the malady which the reclining chair bred, viz., disinclination for work. (5) No special climate was required. (6) Patients in the advanced stages of the disease had some chance of recovery. The outlook was thus more hopeful for all concerned. (7) The work performed by the patients lessened the cost of their maintenance quite materially. The Frimley method was applicable to all cases of pulmonary tuberculosis.

Dr. HERBERT MAXON KING of Liberty, N. Y., said that the work of Paterson was not particularly new. Exercises had been utilized as a method of treatment in pulmonary tuberculosis long ago. Whether the good results were due to the exercise, the autoinoculation, or the tuberculin he could not say. Their experience with the opsonic index was insufficient to prove anything. The great difficulty in the employment of exercise as a therapeutic measure was that they had no criteria as to the dose to be prescribed, nor did they have any rule for the proper selection of patients. At the Loomis Sanitarium they had not found it applicable to all patients. Paterson did not rely upon the physical findings and he himself did not accept this view of things. He preferred to examine his patients once in a while and in many instances this had led to the exclusion of patients from the walking groups. It should be distinctly understood that this was not a method to be adopted immediately on the admission of the patient to the sanatorium. All patients required a preliminary period of rest. When they were in a quiescent condition they were urged to take the walking exercises prescribed. The patints grew tired of the walking and most of them preferred some diversion. Manual labor had been substituted, but he thought that where this was done for purposes of economy it was doomed to failure. They had never introduced this method of treatment into the main division of the sanatorium until last winter, when they had found the results most satisfactory. It did not seem that it would have been possible to discharge so many patients as they had during the past year had it not been for the walking groups. The chief value of this method was in estimating the capacity of the individual for returning to his normal occupation. The patients should be urged to maintain the same hours of rest and exercise outside as in the sanatorium. One could never tell until it was tried whether individuals would respond favorably to exercise or not. If the temperature rose to 101.5° F. and fell again within a half hour from the time after exercise it was considered safe to allow the patient to continue; if the temperature failed to return, they reduced the amount of exercise or stopped it altogether.

Dr. J. H. PRATT of Boston, Mass., said that Paterson deserved great credit for his work, but that he had been greatly misunderstood. He placed so much emphasis on exercise in his writings that rest was overlooked, whereas he selected his patients carefully and prescribed exercise only after they had had a long period of rest. What they needed were more facts; they should get statistics from the leading men covering at least forty years. Dr. Pratt said his own figures showed excellent results. In a class of 161 patients, 77 were restored with their wage earning power proven. The number reported permanently arrested and able to work from six months to six and one-half years was 69. There were only four deaths among those discharged after an average length of time of three and one-half years. Under the rest treatment the results were so good in the first and second stages of the disease that he wondered if the advocates of exercise could show as favorable ones. During the active stage of the disease the proper treatment was rest, as absolute as possible. When the temperature was normal and the pulse rate low, when immunity was established, and not until then, exercise might be begun. He frequently kept patients in bed four or five months.

Dr. HUGH M. KINGHORN of Saranac Lake, N. Y., said that exercise in the form of walking was employed by all lung specialists when the patient, in the opinion of the physician, was in a suitable condition to walk. It was a matter of judgment with the physician how much or how little walking his patient should take; it was also a matter of judgment at what stage in his treatment he should

begin to take exercise. The aim of the hygienic and dietetic treatment as practised by Dr. Trudeau and the Germans was directly opposed to the autoinoculation theory. There was no proof that these autoinoculations were of any value. The tuberculo-opsonic index had been proven by William H. Park, the Saranac Laboratory, and others, to have absolutely no value. As to the question of labor, a note of warning against its general adoption in the treatment of pulmonary tuberculosis should be sounded. The aim of the physician was to cause a cessation of active symptoms and of active disease, and to produce a staple condition and then a considerable period was necessary in order to fix this condition. The open air plan of treatment as practised by Brehmer, Detwetter, and Trudeau had stood the test of time and produced brilliant results and each year showed greater success because they used the great principles of rest, fresh air, and food with greater care.

Dr. J. N. Hall of Denver, Colo., said that he had been especially interested in the disease as it affected physicians. A number of the prominent Denver physicians had made complete recoveries from tuberculosis. He had had as many as one hundred physicians under his care; two of them had been there but a few years, but all the others had been there for five years or longer and they were all free from symptoms of tuberculosis. He believed that physicians made a better recovery than others; they probably recognized their condition earlier and came in time to be properly cared for.

Dr. Cleaveland Floyd of Boston, Mass., called attention to the comparative immunity of people during early life and he thought that without doubt children had a greater resistance to the spread of the disease and toward its arrest than had adults. There were two factors responsible, autoinoculation and the activity of the lymphatic system. If they could get more exact data in regard to rest and exercise, it would be a step forward; at present the questions had to be decided by the individual physician. It seemed to him that they could do better work if they could get a better blood picture. Exercise had been useful in telling him whether a patient was getting too much tuberculin. If they had some means of measuring the severity of infection in the individual case it would be a help. If they could isolate the tubercle bacilli and test them on the guinea pig they could get some idea of the intensity of virulence of the organism.

Dr. Carroll E. Edson of Denver, Colo., said that rest and exercise as therapeutic measures belonged rather to the art than to the science of medicine. They should not lose sight of the histology in these cases. The formation of scar tissue took time; it could not take place in a day or a week. The mere subsidence of the fever did not mean the formation of scar tissue.

Dr. Guy Hinsdale of Hot Springs, Va., thought there were some criticisms to be made of the method of graduated labor as used in this country. The cases at Frimley were chosen only after long periods of observation and after having a great deal of rest. The trouble in this country was that the cases were not properly selected, graduation of labor was not properly given, and in many institutions work was provided for economic reasons.

Dr. Lawrason Brown of Saranac Lake, N. Y., said that giving rest to the individual would do more toward stamping out tuberculosis than any attack on the tubercle bacillus. He doubted whether graded exercises were better than tuberculin. As to Dr. Paterson's cases not relapsing, he doubted this. They were not followed long enough. One could not tell the results of treatment in one, two, or three years. Paterson selected his cases carefully; he did not take those with large cavities, or physical signs at the top and bottom of the lung. Dr. Brown said he kept his patients quiet and did not use exercise for the purpose of autoinoculation but in order to prepare them to resume their work. He considered the workshop a blessing and the patients were put to such work as would develop the muscles that were usually involved and those that would be used in their future employment. He believed that all patients were autoinoculated. Exercise should be taken one day and followed by rest the next. No exercise should be ordered on the day that tuberculin was given.

Dr. Charles L. Minor of Asheville, N. C., said he was interested in what Dr. Floyd had said regarding the estimation of the resisting power of the patient. Much of value could be determined by watching the effects of exercise. He had never seen any of the bad effects from exercise properly controlled that he had from doses of tuberculin in susceptible patients.

Dr. A. J. Richer of Montreal, Canada, said he was pleased with the discussion that had been evoked. He had felt just as most of them did four years ago, but had changed his mind. He thought they would also be convinced if they read Dr. Paterson's book and if they saw the methods in application as he had seen them. The system as practised in England was not applicable in this country, but it could be adapted to the needs here.

Subsequent Histories of Tuberculous Cases Treated During Twenty Years (1891-1911) at the Sharon Sanatorium.—Dr. Vincent Y. Bowditch of Boston, Mass., and Dr. W. A. Griffin of Sharon, Mass., presented this communication. The paper was the result of an investigation of the present condition of patients discharged from the Sharon Sanatorium from the time of its foundation in 1891 to January 1, 1911; no patient was reported who had not been away from the sanatorium at least one year. There had been discharged 592 cases; of these 22 stayed so short a time that they were considered not treated. Nine others were admitted for some other complaint than tuberculosis of the lungs. Tenty-four did not react to tuberculin and were termed merely suspected cases. Seventeen in the early years of the sanatorium were discharged as well; these seventeen cases were considered in this report. This left 520 cases, of which forty-eight were discharged as not improved, 175 as improved, and 297 as arrested or apparently cured. Of the non-improved cases (48) all died as might be expected, 100 per cent. Of the improved cases (175) 107 died, 60 per cent.; condition reported good (51), 29 per cent. not traced (17), 9 per cent. At this time they had to report 297 arrested and apparently cured cases. Of the 297 cases, 25 had not been traced (8 per cent.), 35 had died (10 per cent.), leaving 237, or 81 per cent. alive and for the most part in excellent health. In reviewing the work accomplished in the last twenty years, they felt that their attitude had been one of conservatism as regards the results obtained. When one reflected upon the condition of affairs in the treatment of tuberculosis twenty or more years ago, and when one recalled the sense of hopelessness that was felt whenever a patient presented himself with symptoms of pulmonary disease, they felt that they were justified in looking with great satisfaction, even enthusiasm, upon the work of twenty years at the sanatorium. In stating their results it must be remembered that in using the term "arrested" they had applied it to the results obtained in many cases in which the physical signs and symptoms of the disease were well marked in spite of which condition a successful result was often obtained for a number of years. In such cases the surprising part had often been that they had remained so long without relapses upon resuming the ordinary conditions of life. They had no sympathy with the attitude that because sanatorium treatment had not proved to be a panacea, it had, therefore, failed in its purpose. On the contrary, with greater confidence than ever before they felt it to be one of the great and important factors to be resorted to in conjunction with every other known method of combating the disease which still held the highest place in the mortality list of the civilized world.

Dr. James M. Anders of Philadelphia, Pa., said that it was important to remember that sanatorium treatment did not cure patients but merely started them well in the treatment. After the patient left the sanatorium the physician still had a very important duty to perform in instructing him how to live. The patient should be made to understand the necessity of keeping himself in good physical trim. This meant that he should maintain good muscular development. These patients required walking, rest, and recreation.

The Treatment of Arteriosclerosis.—Dr. Thomas D. Coleman of Augusta, Ga., read this paper. He did not wish to discourage the use of the blood pressure apparatus; it was a very valuable instrument. No instrument could take the place of the finger, nor could any instrument teach as much about the pulse as could be learned by palpation. Daland had shown that the mere application of the cuff in certain neurotic subjects often increased the blood pressure as much as 30 to 40 mm. The widest field for good lay in the prevention rather than the cure of arteriosclerosis. All causes which they knew operated to produce the condition should be curtailed or eliminated as far as possible. There were two parties to this problem: the physician as the educator, and the individual who was willing to profit by his advice. Excesses of all kinds, mental as well as physical, should be shunned. Alcohol, coffee, tea, and tobacco should be used in moderation, if at all. The treatment of arteriosclerosis might conveniently be divided into hygienic, dietetic, and medicinal. Every healthy individual required a certain amount of exercise and the kind and amount should be adjusted to meet the demands of the individual. The mental and physical activities of the individual must be carefully directed. It was a fact that the majority of persons ate too much and nearly all ate too rapidly. In

general meat should be indulged in sparingly. In advanced cases, a rigidly restricted diet was at times imperative. Nitroglycerin acted quickly and might be employed for a long time; its chief drawback, however, was its evanescence. It rapidly caused dilatation of the peripheral vessels, and if pushed sufficiently far would cause flushing of the face, headache, etc. The more lasting effects of the nitrites made them more preferable.

Dr. James M. Anders of Philadelphia, Pa., said he agreed with Dr. Coleman that the instrumental measure of blood pressure was after all less valuable than careful palpation; palpation enabled them to estimate the degree of tension by distinguishing between actual arteriosclerosis and high tension, and this was a very important matter from the standpoint of treatment. The successful treatment of arteriosclerosis was the treatment of the cause. The strenuous life of the day was among the chief causes of this condition. In many cases due to this cause the rest treatment, together with vasodilators was highly successful. At the same time they should give a general diet that would replenish the patient's energy. The prolonged use of sodium nitrite would benefit these patients; it seemed to soften the vascular walls and to reduce the viscosity of the blood. If this agent disagreed with the stomach function it might do more harm than good. The benefits derived from sodium nitrite were more lasting than those obtained from nitroglycerin.

Dr. I. Jacobi of New York said that the only preventive of arteriosclerosis was to diet in time. Arteriosclerosis began at about the thirty-fifth year and it appeared in almost everyone, whether the individual realized it or not. If the person was unconscious of having the condition it was because it was less generally disseminated and more localized in certain spots. So far as the treatment was concerned they had been told to avoid large meals and to eat slowly. Few American knew how to eat, especially doctors. One should eat slowly and not drink too much. Dr. Jacobi said he told his patients to take a glass of water and divide it into six parts and then to drink one part every ten minutes. The speaker said he had taken iodine for six months in succession; he could not take iodide of potassium and he had seen many patients who could not take it. He had also found that the alkaline salts of sodium in small quantities were valuable. He had seen men seventy or seventy-five years of age with intense symptoms of arteriosclerosis living a comfortable life and attending to their business while taking this preparation. The attacks of arteriosclerosis caused by deposits in the coronary arteries leading to angina might be relieved by doses of nitrites with morphine. He gave one-quarter of a grain of morphine and 1/100 to 1/50 of a grain of atropine, having the patient place it on the tongue and suck it down slowly. He allowed his patients to have a dozen tablets and to use one when the attack came on.

Dr. Charles L. Minor of Asheville, N. C., said that people led such foolish lives in this country that it was useless to speak of prophylaxis. He had found that iodide of potassium in three-grain doses was of considerable value, but that the combination of dietetic and psychical treatment was of greater value. If they followed the English way of living there would be less arteriosclerosis. The physician should tell his patients how to live; sometimes the advice would be followed, ofttimes it would not. Two meals instead of three should be taken, heating foods and cocktails should be avoided, and the patient should be careful not to overeat.

Dr. Thomas Darlington of New York, said he had been interested in the question of longevity and had questioned the members of a family many of whom were very long lived. Three of these were 100, 101, and 103 years, respectively, while four were over 90 years of age, and five others over 86. They all gave practically the same experience and their advice was to eat slowly and sparingly and to keep the bowels open.

Dr. Edward R. Baldwin of Saranac Lake, N. Y., said that in institutions the inmates were very prone to overeat and he had observed that this was an important factor in the production of arteriosclerosis.

Dr. Guy Hinsdale of Hot Springs, Va., said that anyone who practised medicine at a health resort saw many of these cases of arteriosclerosis. A large number came to these resorts for hydrotherapy. Dr. Swan had told him of his experience with the carbonated baths and they did not seem to affect the blood pressure one way or the other. The relation between these baths and blood pressure seemed to be very hazy. It would be desirable to arrive at some definite conclusion regarding their effects.

Dr. J. H. Pratt of Boston, Mass., said he had made many observations on the blood pressure before and after giving the carbonated baths and he was sure that a course of baths had no permanent effect on the blood pressure of any therapeutic value. The immediate effect of the baths was striking. If the patient had a normal heart and was given a full strength bath at a temperature of 93° F. there would be a rise in blood pressure; if the heart was weak the full strength bath would be followed by a fall in the blood pressure. It had been shown that the temperature had a marked effect on the blood pressure, as much so as the carbon dioxide gas.

(To be continued.)

Books Received.

The Medical Record *is pleased to receive all new publications which may be sent to it, and an acknowledgment will promptly be made of their receipt under this heading, but it must be with the distinct understanding that it is under no obligation to notice or review any publication received by it which in the judgment of its editor will not be of interest to its readers.*

International Clinics. Vol. III. 22nd Series. Edited by Henry W. Cattell, A.M., M.D. 306 pages; illustrated; cloth; price $2.00 net. J. B. Lippincott Company, Publishers, Philadelphia.

Ein Weiterer Beitrag zur Glaukom-Frage. By Dr. W. Wagner. 45 pages; paper; price 1.50 M. S. Karger, Publisher, Berlin.

Elementary Bacteriology and Protozoology. By Herbert Fox, M.D. 237 pages; illustrated with 67 engravings and 5 colored plates; cloth. Lea & Febiger, Publishers, Philadelphia and New York.

Principles of Human Physiology. By Ernest H. Starling, M.D., F.R.C.P., F.R.S., Hon. M.D. 1,423 pages; illustrated; cloth. Lea & Febiger, Publishers, Philadelphia and New York.

Autointoxication and Disintoxication. By Dr. G. Guelpa. 152 pages; cloth; price $1.25 net. Rebman Company, Publishers, New York.

The Therapy of Syphilis. By Dr. Paul Mulzer. 248 pages; cloth; price $1.50 net. Rebman Company, Publishers, New York.

Hypnosis and Suggestion. By H. Hilger, M.D. 233 pages; cloth; price $2.50 net. Rebman Company, Publishers, New York.

Surgery of the Brain and Spinal Cord. By Prof. Fedor Krause, M.D. Vol. II. 819 pages; illustrated; cloth; price $7.00 net. Rebman Company, Publishers, New York.

Pathology and Treatment of Diseases of Women. Fourth Edition. By Henry Schmitz, M.D. Rewritten by A. Martin and Ph. Jung. 475 pages; illustrated; cloth; price $5.00 net. Rebman Company, Publishers, New York.

Medical and Surgical Report of Bellevue and Allied Hospitals in the City of New York. Vol. IV. 1909-1910. Edited by Van Horne Norrie, M.D., John A. Hartwell, M.D., A. Alexander Smith, M.D., and Charles E. Nammack, M.D. 339 pages; illustrated; paper.

A Treatise on Diseases of the Hair. By George Thomas Jackson, M.D., and Charles Wood McMurtry, M.D. 366 pages; illustrated with 109 engravings and 10 colored plates; cloth. Lea & Febiger, Publishers, Philadelphia and New York.

American Labor Legislation Review. Vol. II, No. 2. 417 pages; illustrated; paper; price $1.00. American Association for Labor Legislation, Publishers, New York.

Progressive Medicine. Vol. XIV, No. 3. Edited by Hobart Amory Hare, M.D., and Leighton F. Appleman, M.D. 353 pages; illustrated; paper; price $6.00 per annum. Lea & Febiger, Publishers, Philadelphia and New York.

A Manual of Pharmacy for Physicians. By M. F. DeLorme, M.D., Ph.G. Third Edition. 221 pages, with 19 illustrations; cloth; price $1.25 net. P. Blakiston's Son & Co., Publishers, Philadelphia.

The Practice of Medicine. By Hughes Dayton, M.D. Second Edition. 326 pages; cloth; price $1.00 net. Lea & Febiger, Publishers, Philadelphia.

Burdett's Hospitals and Charities, 1912. The Year-Book of Philanthropy and Hospital Annual. By Sir Henry Burdett, K.C.B., K.C.V.O. 1,027 pages; cloth; price 10/6 net. The Scientific Press, Ltd., Publishers, London.

Principles of Microbiology. By Veranus Alva Moore, B.S., M.D., V.M.D. 506 pages; with 101 illustrations; cloth. Carpenter & Company, Publishers, Ithaca, N. Y.

Miscellany.

Bergson on the Interpretation of Life.—The discussion recently held before the British Association for the Advancement of Science, served at least to bring out one important fact, namely, that notwithstanding the increasing knowledge of biological phenomena, the question of the origin of life is still enshrouded in mystery. The limitations of the human mind apparently decree that this question will ever be an elusive one. An admirable discussion of this phase of the subject is presented by Henri Bergson in his "Creative Evolution." He notes that "the human intellect feels at home among inanimate objects, more especially among solids, where our action finds its fulcrum and our industry its tools; that our logic is, preeminently, the logic of solids; that, consequently, our intellect triumphs in geometry, wherein is revealed the kinship of logical thought with unorganized matter, and where the intellect has only to follow its natural movement, after the lightest possible contact with experience, in order to go from discovery to discovery, sure that experience is following behind it and will justify it invariably. But from this it must also follow that our thought, in its purely logical form, is incapable of presenting the true nature of life, the full meaning of the evolutionary movement. Created by life, in definite circumstance, to act on definite things, how can it embrace life, of which it is only an emanation or an aspect? Deposited by the evolutionary movement in the course of its way, how can it be applied to the evolutionary movement itself? As well contend that the part is equal to the whole, that the effect can absorb its cause, or that the pebble left on the beach displays the form of the wave that brought it there. In fact, we do indeed feel that not one of the categories of our thought —unity, multiplicity, mechanical causality, intelligent finality, etc.—applies exactly to the things of life: who can say where individuality begins and ends, whether the living being is one or many, whether it is the cells which associate themselves into the organism or the organism which dissociates itself into cells? In vain we force the living into this or that one of our moulds. All the moulds crack. They are too narrow, above all too rigid, for what we try to put into them. Our reasoning, so sure of itself among things inert, feels ill at ease on this new ground. It would be difficult to cite a biological discovery due to pure reasoning. And most often, when experience has finally shown us how life goes to work to obtain a certain result, we find its way of working is just that of which we should never have thought."

Classical Training and the Physician.—H. D. Rolleston ventures the opinion that, valuable as a really good classical training is in some respects and attractive as its advantages are in brilliant exceptions, the bulk of medical men pay somewhat dearly for the luxury of any aroma of classical culture which still clings to them in late middle life to compensate for the years spent at school and sometimes at the University on the dead and difficult languages. A large proportion of medical men have almost entirely forgotten the Greek they once knew, or at most can recall just enough to understand and spell the never-ending flow of new and often unnecessary medical words, some of which bear witness to their inventors' originality in being composed of the Greek termination *itis* appended to a Latin noun or even a comparatively modern name; such are Bartholinitis and Wirsungitis. Latin is more familiar, but largely because prescriptions are still supposed to be concealed from the public by the garb of Latin words often discreetly and somewhat illegibly abbreviated. It may safely be concluded that to the ordinary medical man the direct or marketable advantage of a classical training is entirely out of proportion to the amount of time commonly devoted to it. But it is often urged that, apart from any intrinsic use, the classical languages, in virtue of their peculiar structure, give a mental training and discipline which cannot be obtained from the study of French and German. This statement is difficult to prove, and we have the high authority of Sir Clifford Allbutt for the dicta that "it is not so much *what* a man is taught as *how* he is taught it," and that "the current teaching of Greek and Latin is a parody of education; not only does it restrict the range of the teacher and pupil, but the imaginations of both are stunted." After nearly 20 years' experience as a master at Eton, A. C. Benson frankly characterizes the results of the classical routine as "intellectual starvation." In spite of what has been said about the drawbacks of a prolonged and exclusively classical education, this decision is probably beneficial as regards the elementary education of future medical students, for there is much to be said in favor of retaining the classical languages so long as the teaching of French and German and science is not interfered with or delayed.—*The Lancet*, October 5, 1912.

Doctor and Patient.—Dr. James G. Mumford, in the latest product of his versatile pen, entitled "A Doctor's Table Talk," notes that "the physician at a patient's house, on the one hand, or in his own office on the other, occupies somewhat different rôles; not that in the one case he is guest and in the other case host, though in some slight measure that is the fact, but because the doctor has far better control of his patient and of his own time at her house than in his office. Observe the 'her.' The majority of calls are from women. When at her house you ask your questions, make your examinations, give your directions and go. Prompt, kindly expedition gives a sense of your efficiency and dignity. Rarely is it necessary to stop for gossip. In your office, on the other hand, you may be at the mercy of a heedless or selfish patient. A very busy consultant, with a trained office attendant, can have patients shown in and out rapidly at the touch of a bell; but the average practitioner, with his small and irregular office practice, must suffer the whims of the heathen. Don't hurt their feelings unless they be mere humbugs and bores. Bear with them as long as you think proper, then rise and get rid of them by the plain statement that you are busy, or that patients by appointment are awaiting you—as the case may be, and you will see them again that day week. Some day I must write a book on the misery of a doctor's consulting room from the doctor's point of view. In these days of trained nurses and social service workers it is comparatively easy to get your directions for treatment carried out in the case of bed patients and of serious illness; but in the case of office patients you are never sure. Write out full and explicit directions for every patient, whether he has a nurse or not. Thus will you be sure of obedience. The *spoken* word is as snow in the desert."

Medical Record

A Weekly Journal of Medicine and Surgery

Vol. 82, No. 18.
Whole No. 2191.

NEW YORK, NOVEMBER 2, 1912.

$5.00 Per Annum.
Single Copies, 15c.

Original Articles.

THE DIAGNOSIS OF MENTAL CONDITIONS.

By HENRY M. FRIEDMAN, M.D., LL.B.,

NEW YORK.

ACTING ASSISTANT SURGEON, U. S. PUBLIC HEALTH SERVICE.

In the diagnosis of mental conditions, more than in any other pathological conditions, the individual himself must be the chief point of consideration. The long strides in the laboratory or scientific diagnosis of disease have brought about a tendency to forget the patient himself and to consider him only in the light of a "case" in the abstract. Thus far, however, the inroads of science have committed little, if any, depredations in the field of psychiatry, for with a few exceptions no one can say with what pathological conditions he is dealing, or even what the etiology of a given case is. Of necessity, therefore, the physician is brought face to face with the patient himself; that is, with his antecedents, environment, habits, education, etc.

Moreover, the many features that must be considered, and the frequent deprivation of liberty and property accompanying such a diagnosis make it imperative that a diagnosis of disease of the mind be made only by trained experts after due observation. "Snap diagnosis" must never be made. It is an unfortunate fact that even after the most careful observation by the best men mistakes are only too frequent. On the other hand, opinions of sanity or insanity given by lay people, whether they be physicians not trained in psychiatry or by judicial officers, juries, or the average citizen, have only too often been proven fallacious and productive of great harm to the public. Psychiatry is really a profession by itself. A physician is more fitted for this work only because his profession brings him into closer relations with his patient than any other person. He is the only one who has learned to view mental and physical ills with an analytical eye. Here, more than in any other branch of the medical sciences, is experience so essential to success. For in spite of the many vagaries, mental disease follows certain lines, and while no two manifestations are exactly alike—a condition also true of the physical ills—yet alienists who are familiar with these lines are better able to ferret out the disease than those who have not had similar training and experience. In psychiatry specialization should be aimed at just as specialization and not versatility is required in almost every walk of life. Each branch of science is so vast, each new discovery opening the door to trackless fields of research, that no one can hope to be proficient in even one of its branches without endeavoring to master many. The vanity of laymen, therefore, which permits them to pass opinions on topics on which men have spent lifetimes without venturing such definite opinions, is, to say the least, inconsistent with enlightenment. "Fools rush in where wise men fear to tread."

In the consideration of this subject the various insane, dementive, and maniacal manifestations, as well as idiocy and imbecility, can be left out of the discussion; likewise the differential diagnosis between the various clinical forms of mental derangement. Society is only interested in knowing whether an individual is sane or insane and not in the clinical variety. When the disease is in a state of dementia or maniacal excitation it is a physical manifestation rather than a mental one, though the underlying cause is mental. The differential diagnosis can be made only after long observation and is merely of scientific or prognostic value. The various mental conditions manifested by delusions and feeble-mindedness and backward or retarded mentality give the greatest difficulty in diagnosis. In mental disease it is a composite picture with which we are dealing. No one symptom is diagnostic of the disease—there are few, if any, pathognomonic signs. The points to be considered, and from which the composite picture of mental disorder is drawn, are heredity, race, environment, temperament and habits, education, and physical condition. Not one of these items alone is of value in making a diagnosis; only the combined results of investigations along these lines are of service in arriving at a diagnosis.

Heredity especially plays an important part in diseases of the mind. In no other condition has the hereditary transmission of disease received so many practical demonstrations. A number of writers have demonstrated this fact, and only recently Goddard succeeded in tracing the genealogy of feeble-minded children to their insane or defective ancestors a number of generations back.[2] It is now universally conceded that deficient mental make-up is very likely to beget a similar life, and that, too, whether the deficiency is prenatal in origin or acquired through disease, or alcoholic or other indulgence. Yet it is an inexplicable fact that many great men have had mentally defective antecedents or collateral relations. And, indeed, some of the greatest men themselves have been considered mental defectives. The question that is so difficult to decide is whether, in a given individual, a family history of mental disease should determine in him a diagnosis of mental disorder, where otherwise it would be in doubt or not made at all. Shall such a history be a clinching point in an otherwise doubtful case? The whole subject of heredity is still so veiled in mystery that positive opinions cannot be ventured. However, from practical demonstrations along these lines the preponderance of evidence lies with those who lay great weight on heredity in the etiology and diagnosis of diseases of the mind.

Habit, temperament, and racial and environmental

characteristics are important factors in diagnosis. Unless we know the normal we cannot distinguish the abnormal. An abnormality in one individual might be a normality in another. Insanity is really a straying from one's own normal. There is no normal that applies to every individual; that is, there is no standard, even in people of the same race or type. If one were always a "dreamer" only a radical variation from the "dreams" would be abnormal. The same "dreams," however, in some other individual not similarly constituted would spell a disordered condition of the mind. Some races of people are extremely emotional and excitable; others very dull and phlegmatic. The emotionality of the Hebrew or southern Italian is too well known to need elaboration. It is not uncommon to excite in them an action almost maniacal in nature on the slightest provocation. On the other hand, emotional excitations in the more phlegmatic races should always arouse suspicion of mental aberration. In this work the need of knowing the people with whom one is dealing cannot be too greatly emphasized.

The main symptom, generally speaking, upon which the diagnosis of mental disorder is made is the delusion. A delusion is a fixed idea not based on fact, which cannot be righted by reason. The insane, in other words, are not amenable to reason. Usually the most difficult cases are those in which there is a delusion on one subject only—paranoid types—while otherwise the patient appears rational. Why a person should have a delusion on one subject only or on one train of thought and be rational on all others is not quite clear. However, the mind is undoubtedly made up of a great many mental organs, so to speak—perceptive and receptive faculties—and it is reasonable to conceive of disorder in any one of these organs which does not apparently affect the others. The single delusion corresponds to the single mental organ which controls the particular receptive or perceptive faculty involved. In the body, likewise, a single organ may be disordered while the other organs are not directly affected, and indirectly so slightly that symptoms are not apparent. Still, while there may be but one delusion, and the individual may appear otherwise normal, there can be no doubt that, owing to the close association of all the mental faculties, an affection of one will have a deleterious influence on the whole mental apparatus. The individual, therefore, with but a single delusion should nevertheless be considered entirely disordered and not merely partially. At any time the obsession of one part of the mind may spread to others, just as inflammations in one part of the body have a tendency to spread to other parts either by continuity or by sympathy. Acts committed having no direct connection with the delusion are undoubtedly influenced by the pathological condition causing that delusion.

In establishing that a certain idea of the patient is a delusion or a certain act irrational, it is of course first necessary to establish the falsity or irrationality of the idea or act. Delusions are either possible or impossible ideas. In the latter there is little doubt, on hearing the idea expressed, in relegating the individual to the class of the mentally deranged. The former, however, because in the abstract they are perfectly possible ideas, are the ones that give the greatest trouble; these are the instances that are so hard to prove to outsiders. Many a delusional or irrational action is but an exaggeration of a normal or possible idea or act. A perfectly normal idea may be exaggerated yet not so unreasonably so as to constitute a psychosis. But if this idea is very greatly exaggerated it may then bear little or no resemblance to the original idea and be then really irrational or delusional. In many individuals who are constitutionally inferior, who have a weak mental organization, that is, those who are weak-willed and easily influenced, those who have the so-called psychopathic tendencies, this is particularly liable to occur, especially under conditions of mental or physical stress. In these individuals the imagination is heightened, exaggeration is easily stimulated, and finally, possibly from the frequency of such stimulations, they are unable to distinguish between the imagined idea and the fact; that is, they become obsessed with the imagined idea—the delusion.

While the establishment of the delusional nature of an idea or the irrationality of an action usually decides the question of insanity, yet in most instances the difficulty lies in finding the delusion. An insane person of previous average intelligence is usually well orientated on all subjects. He very soon learns which of his beliefs are considered delusional and are liable to get him into trouble. These he endeavors to hide just as a criminal tries to conceal the facts or evidence tending to betray him. Their cunning is ofttimes extreme and must be matched by that of the examiner if the former is to be caught. The patient is able to detect that others are gunning for his delusions, and he only too frequently manages to evade his "pursuers." At other times, while the patient is not attempting to conceal his delusions or does not suspect the purpose of the interrogation, the examiner may be unfortunate in not striking a line of questioning which would elicit the delusion. This the examiner may not be able to do because he is not familiar with the habits or customs around which that particular patient's delusion is woven. The delusion may be centered around a peculiar and possibly insignificant religious or race custom, of which the examiner could not possibly be informed and could not, therefore, direct his efforts in that direction.

A phase in the diagnosis of mental conditions, which usually arises in the probate of wills, is the determination of the actual mental condition of the so-called eccentric. To distinguish between eccentricity and insanity is at times well nigh impossible, for the reason that such individuals rarely commit acts that conflict directly with anyone, and their condition thus rarely becomes the subject of scrutiny. At times the eccentric will do things far more unreasonable than the admittedly irrational. Whether an eccentric action or idea is not such an action or idea as cannot be altered by reason is not easy to decide. There can be no doubt that in the broad treatment of this subject all persons who are "queer," "peculiar" or "eccentric" are such persons as have to a greater or lesser extent lost the mental equilibrium which goes to make up the normal clearsighted individual, but not such a disorganization as to lose entire control of any mental faculty or faculties. In will cases the contestants try to prove, by a plainly irrational act, that the deceased's eccentricity was tantamount to insanity. In deciding the mental status of the eccentric, however, it is safest to err on the side of the suspected individual, because of the indefinitiveness of the whole subject of insanity, especially if he does not act in conflict with the public.

In considering the diagnosis of the actual mental defectives—the idiots, the imbeciles, and the feeble-

minded—the first two give little difficulty. Besides the lack of any, or in the case of imbeciles very little, mental development they usually present definite physical or facial characteristics which leave little or no room to doubt the nature of their condition. The difficulty lies in making the distinction between the feeble-minded, who have just overstepped the line to the side of the defective, and the backward, who are still on the normal side of the line. The dividing line between the two is sometimes very fine. In enfeeblement there is a mental development but limited in amount. In backwardness or retarded mental development, the mental development is not limited, only it is a few years short of the average or normal. Feeble-mindedness is a limited mental development; backwardness is tardiness in mental development. Practically speaking, feeble-mindedness and backwardness are relative conditions. The mental condition of a child brought up in a sphere of education and culture might be so poor, by comparison at least, as to amount to a positive enfeeblement. Yet the same degree of mental development in a peasant type of child, brought up in its own sphere of ignorance, would be very good indeed. Ultimately, of course, the latter child, assuming that it has a normal mind, would develop almost indefinitely, while the former would not. The difficulty lies, therefore, in distinguishing between a positive enfeeblement and mere retardation to a certain degree. The detection of mentally defective children in early life is almost impossible; in all likelihood it cannot be done before the age of three or four, though the deficiency exist from birth. In early life two apparently equally dull children react differently to educative influences. The one may brighten up remarkably and become an average, and frequently above the average, individual. The other, who can later be identified among the feeble, remains in the original condition in spite of the educational efforts. At the present time, and as illustrative of the difficulty of determining the feeble-minded, they are being educated sufficiently to be self-supporting. Such individuals might baffle diagnosis and would even compare favorably with normal, but ignorant children. It is almost an easier task to educate children who are inherently backward, in an environment of culture, than normal children in an environment of ignorance.

In feeble-mindedness, as distinguished from backwardness, the brain contains, so to speak, only a limited amount of raw material from which the mental faculties can be developed. Such individuals' maximum mental development is reached very early, and no amount of education can stimulate very much further development. Backward children, however, merely start with a *minus* in their mentality, which may or may not increase as the child grows older, and continue in early life at least in this condition. In most instances they can catch up with the normal child, especially with the aid of specially devised educational methods. The backward child develops on the application of a little more mental stimulus; the feeble-minded will not. Backward children need more education and a little more trouble in the application of it. Still, even if the child does not catch up and goes through life with a few years of retardation in its mental development, this is not of much moment, for the possibilities of mental development are almost infinite. Besides, in the face of the profoundly intellectual we are all more or less backward!

In endeavoring to determine the mental condition of a child, the first essential is to determine how much a child of similar age, environment, mental education—and especially opportunity—knows before one can determine the condition of the child in question. Comparison of the child with children of the same family furnishes, when possible, an excellent basis for comparison. A marked difference is very significant of defect. Yet, many children who, during school life, were considered defective, or who compared very unfavorably with their mates, succeeded in later life even from the standpoint of mental accomplishments. Realizing the difficulty of determining the mental defectives by the present indefinite means of diagnosis, Binet, in conjunction with Simon, devised a system whereby they hoped to determine from a standard, which they established in accordance with the age of a normal child, the degree of mental development of the child under test.[1] For the purposes of these tests Binet divides his subjects into three classes: Those in whom there is a general retardation both mental and physical; those in whom there is a retardation in one mental faculty more than in others, and those in whom all the mental faculties show retardation. He makes another classification—those whose intelligence is retarded; those who are unruly, inattentive or mischievous, and those who represent combinations of both types. The mentally defective of the retarded-intelligence type are more numerous as the children are older, and vice versa for the unruly ones, or, as Binet calls them, "the instabiles." The retarded-intelligence type, though attentive, learn less than other children under the same instruction. Concerning these children the teachers usually give good reports as regards their attentiveness, willingness, and behavior. "The instabiles" do not learn, for the apparent reason at least that they do not apply themselves to study, though they sometimes appear brighter than normal children.

After establishing the standard with normal children of successive ages, Binet shows the child to be tested a picture of familiar objects, and after a lapse of a definite time—thirty seconds—asks the child to repeat to him from memory what he saw thereon. The degree of retardation depends on the number of objects he can remember, as compared with the number a normal child can remember. If an eight-year-old child can remember only as much as a normal five-year-old child, the former is retarded three years. A retardation of ten years is considered a permanent defect or enfeeblement. The picture test is supplemented by having the child repeat spoken or written words; the number of words that can be repeated from memory, as compared with the standard child, determines the degree of retardation. These tests are elaborated, standardized, and tabulated up to the age of sixteen, and can thus be applied by anyone. Goddard, with his own modification, has these tests applied by girls specially trained for this work, but having neither medical nor psychiatric training.[3,4] Following out the scheme they are able to tabulate very rapidly the degree of mental efficiency of a great number of children. This method might be used to advantage in the school system in keeping a record of the mental development of each child, just as is now done with the physical development. The whole scheme of these tests is the ascertainment of the approximate mental age of the child by comparing its attainments with those of a normal child

used as a control. The tests are especially of value in the separation at school of the mentally defective from the normal, in order that the former may not impede the educational progress of the rest of the children.

But the principle in the application of the Binet system in ascertaining mental acuity is not entirely new. It is applied every day in the competitive tests of our educational system, as exemplified in periodic ratings. The various civil competitive examinations also aim to pick out the better mentally from the poorer and economically to use the services of the better. As an actual scientific determination of the mental development of the child the Binet system still fails because it is too arbitrary for so elastic and complex an organization as the mind. Its use can only be restricted, as indeed Binet intended it to be, to the approximate determination of the child's mental acuity. The diagnosis of the mentally defective cannot be made from one examination. Only after watching the educational progress, under reinforced educational methods, can a determination be arrived at.

Coming to another phase in the diagnosis of mental conditions, namely, their detection by mere inspection of a great number of people as they pass in review before the examiner, it might be well to note that in the diagnosis of diseases of the body the recent scientific developments have had a tendency to defer the making of a diagnosis or even an attempt at one until the reports on the various laboratory or mechanical examinations have been made. And very recently a number of writers have called attention, in spite of these developments, to the value and good results obtained from inspection of the patient himself.[5] Furthermore, in the need for the detection and exclusion of physically, and especially mentally defective aliens—but owing to the impossibility of actually examining each individual because of the vast number entering—the method of the detection of disease or defect by mere inspection has been developed on a large scale. The great number of abnormal conditions thus detected is the best testimonial of the value of this method.

In detecting mental conditions almost as much can be learned from inspection, before the subject's attention has been attracted and while he is still at ease, as from prolonged examination. In the delusional types of insanity, where the patient usually realizes the purpose of the interrogation, prolonged examinations tend to increase his suspicions and often result in the successful concealment of the delusions. The detection of mental conditions among aliens requires special training in racial types and characteristics, even more than psychiatric training. Even with this training the difficulty of detection is very great when we consider that the physician of an institution or the alienist makes his diagnoses from persons sent to him because of some irrational action or speech. Furthermore, he works with a suspect and usually has a definite personal and family history with which to work. Yet, even under these conditions diagnoses are difficult to make and mistakes are very possible.

One of the most important signs, if not the most important index, of the state of the mind is the facial expression. Normally the face expresses, in a degree at least, the state or condition of the mind; in other words, the degree of intelligence. We even speak of reading the thoughts of an individual from the expression on the face. We have depicted on the face expressions of fear, anger, exultation, depression, etc. If, therefore, we determine what the normal condition of the mind should be under the conditions holding at the time, the facial expression will indicate variation and become a valuable clue to follow for further investigation. For example, the normal expression of apprehension and alertness of a Hebrew should be looked for; an indifference to surroundings and conditions should excite suspicion in the mind of the examiner. Similarly apprehension or alertness in a Greek or Macedonian is unusual, because his normal expression is rather dull or phlegmatic. Individuals exhibiting expressions of unusual excitation or depression should always be given a complete mental examination. Familiarity with the type or race under consideration is therefore absolutely essential. It is almost out of the question for an examiner not familiar, say with a Syrian peasant type, to form any opinion of the mental caliber of such an individual from his appearance or attitude.

The mental reaction or reaction time is another important consideration in the detection of the mentally unfit. The reaction time is the small, but still appreciable, period elapsing between the putting of a question and its comprehension and answer. In estimating the reaction time of an individual, his race and temperament must again be taken into consideration. The reaction time of a backwoods peasant is of necessity much slower than even that of a much duller individual from the city. Still, even an apparently dull person should, if mentally normal, brighten up appreciably on comprehending the question asked; a distinct "lightening up" of the face should then become apparent. An unusually long reaction time should be sufficient cause for a further and complete mental examination. Conversation, no matter how short, is extremely important in ferreting out mental conditions. It is, of course, the *sine qua non* of psychiatric examinations. Especially is this important in detecting dementive or enfeebled mental conditions, for here the lack or deficiency of the mind can thus be brought out. In diseases of the body diagnoses are usually made with the body at rest. In diseases of the mind, on the contrary, the diagnosis is best made with the mind in action. And speech is, of course, the mind's principal manifestation or translation of that action. In the very nature of the thing communion with the subject is absolutely essential. The difficulty in carrying out this essential lies in the many and diverse languages spoken by the people to be examined, and the necessity, therefore, for employing intermediaries, *i.e.* interpreters. This is far from satisfactory. As a matter of fact, no one can convey to another a thought as accurately through an interpreter as by personal conversation. Part of the thought or question is lost in its passage from the examiner to the subject through the interpreter. Similarly the answer loses in its travel. Very often it is the important thought, that for which the examiner is seeking, and which the interpreter considers too unimportant to transmit. Ability to speak the language of the subject is very desirable if for no other reason than that it gains his confidence, without which, when the subject examined is in a state of apprehension, little can be accomplished. Interpreters who are not familiar, from experience at least, with the trend of mental examinations are

of little help, if not a positive hindrance. Most of the makeshift interpreters will rarely interpret what the examiner says, and still less frequently what the subject says *as he says it*. They make their own interpretations of what is said, instead of transmitting exactly what is spoken. If the individual does not make what to them is a satisfactory answer, they will prompt and dicker with him until such an answer is made. Untrained interpreters fail altogether to realize that it is entirely the unsatisfactory and not-to-the-point answer that is desired. Moreover, the dickering breaks the trend of the subject's thought, and thereafter further examination at that sitting is of no avail. It is always desirable to let the individual have his say without interruption, since it is not a rational or coherent answer that is sought, but only his own answer, whatever that be. It is, so to speak, well to let him "incriminate" himself before commencing "cross-examination." Through conversation it is hoped to detect a rent in the train of thought or reasoning power. A break, no matter how small, denotes a weakness in the mental organization, and further examination along proper lines will usually reveal the disorganization. The line of conversation should be gauged strictly along topics with which the individual is familiar. A normal individual, no matter how ignorant, is orientated on the circumstances immediately surrounding his present status, while the disordered will display disorganization or disorientation of one form or another. When an individual shows some incoherence or hesitation in the primary questioning it should be followed up by a more thorough secondary examination. In this examination it is well to lead to, and follow up, circumstances immediately preceding present conditions and to determine the orientation on those matters. The primary questioning can be carried out in almost a few seconds; the secondary should be a lengthy one. An individual who is orientated on present—that is, more recent—circumstances, is not likely to falter on preceding conditions with which he is more familiar. At all events it is impracticable, though theoretically essential, to consider every alien a possible mental case and to subject him primarily to a complete mental examination unless on primary examination there were some signs of mental disorder.

In the detection of enfeebled mental conditions, appearance and attitude help somewhat, but in the high grade of enfeeblement it is a negligible quantity. An expressionless face reflecting no cognizance of surroundings or circumstances is always significant of mental deficiency. But conversation is here also an all-important factor in determining mental acuity. Here, especially, must the mental attainments of a normal child, with like mental education and opportunity, be borne in mind before we can judge how much lower the subject is in the mental scale. There is no definite method of determining this; it remains a matter of judgment and experience with the examiner after all the factors of race, previous environment, and education have been considered. Peasant children, for example, are not to be expected to show up as well as city children. If these reservations were not made the number of suspected cases would be very large, but the number of errors would be very great indeed. In short, in detecting mental conditions by inspection the first essential is to determine the race or type of the individual and his particular characteristics. Then note the facial expression and attitude, which would convey the impression of cognizance of environment and circumstances—an expression of "understanding." A few questions will determine the reaction time and orientation. If from these points nothing abnormal is noted the individual is allowed to pass, otherwise a further and complete mental examination is made.

The utilization of the Binet system on those who have been turned aside for a further mental examination is not as practicable as with school children. The Binet system was originally devised for school purposes in sifting and segregating the defective or retarded from the normal. School children are usually of the same type, either from similarity of race or environmental influences, and—what is especially significant—speak the same language. In the work of sifting aliens, one sees a kaleidoscopic array of people to whom one standard, or in fact any standard, cannot be applied. Were it possible to devise a Binet system standardized for each race or type, it would then be of great value. For, in principle the Binet system strives only to ascertain the comparative mental acuity of the child when compared with a normal standard *of its own sphere*. There is no standard normal child, i.e. one that is standard for all children. Many children make a poor showing under these tests because unable to understand what is wanted of them. Natural fear in their new surroundings militates against them. Even the most intelligent—and they especially—in fear of what they believe would be the consequences of a wrong answer, become too "nervous" to make a creditable showing. All of us who have taken examinations know how flighty our knowledge becomes at the examination door. The ability to repeat from memory, in the alloted time, would depend largely on the familiarity of the individual with the test objects. Indeed, ignorance of the peasantry from some places is extreme and this test would not be likely to elicit their real reaction time.

When the last word is said on the Binet system, as an aid in determining mental efficiency, it will be found that not the ability to remember words, pictures, numbers, etc., is an index of mental development, but only the ability to reason out simple mental problems. Some very bright minds are unable to do simple arithmetical sums without the use of pencil and paper. Reasoning power is the ability to place together abstract and previously separated but known facts, and to form from them the concrete thought; that is, it is the individual's power of association, and is equivalent to his degree of intelligence. This power is of gradual development in the human being. As the child grows older it should be able to reason out more difficult problems, those bearing a relation to its particular cycle of life. And the determination of this power lies almost entirely in the ability and judgment of the examiner, and not yet in any fixed scheme or system devised for application by anyone.

Conclusion.—The matter of the diagnosis of mental conditions, whether in institutions after prolonged observation or by the method of inspection, is difficult and often unsatisfactory. If it is difficult, even with the modern scientific aids, to diagnose present and patent diseases of the body, how hard must it be to detect intangible

mental disease without laboratory or scientific helps. Most physical ills give premonitory symptoms. In mental diseases, if there are such symptoms the patient is little likely to complain of them or seek advice on account of them, as he is so apt to do in the somatic ills. Moreover, he is more often against the physician than with him. Likewise, the detection of mental disease among aliens offers the same difficulties only in an infinitely larger degree. The goal in this work is to be able to detect from the panorama of people those who have remote or even latently present mental abnormalities. There are no signs by which an examiner can say in any given instance that an individual will develop a mental disease. The terms, mental instability, constitutional inferiority and psychopathic tendencies, as forerunners of insanity, refer to individuals whose mental organization is of the weakest; who, while they show no present symptoms of mental disorder, or who could go on mentally normal, for them at least, in primitive surroundings, yet on slight stress, such as they meet on encountering the hardships, and the increasing demands on their mental vitality, of settlement, become mentally disordered. But even in them the mental disorganization is gradual in development and spread over a longer or shorter period, and appears sometimes a very long interval after settlement. But no one can forecast in advance of the happening that an individual with a low mental vitality will, on meeting hardship and adversity, of necessity become mentally deranged.

However, until definite diagnostic signs or methods be found for the detection of mental conditions, psychiatrists will continue to be at loggerheads, and many mentally defective persons will pass inspection without detection. Says a New York Supreme Court Justice: "We know that insanity is a mysterious disease, that it may exist without indications, is often cunningly concealed so as almost or altogether to baffle detection even by a specialist, or to be so occult as to cause most eminent alienists to clash as to its existence in a given instance."[6]

REFERENCES.

1. Binet, A., and Simon, T.: "Les Enfants Anormeaux," 1907.

2. Goddard, H. H.: "Heredity of Feeble-mindedness," *American Breeders' Magazine*, Washington, D. C., 1910, pp. 165-178, v. 1.

3. *Ibid.*: "Binet-Simon Measuring Scale for Intelligence," *Training School*, Vineland, N. J., Jan., 1910.

4. Sullivan, W. C.: "Feeble-mindedness and the Binet-Simon System," *Lancet*, March 23, 1912.

5. Wilson, J. G.: "Diagnosis by Inspection," *New York Medical Journal*, July 8, 1911.

6. Friedman, H. M.: "Legal Aspects of Medicine," *New York Medical Journal*, Oct. 14, 1911.

Acetonuria in Childhood.—R. S. Frew notes that the examination of the urine from 662 children, varying in ages from a few days to 12 years, showed acetonuria in 408—*i.e.* in 61.6 per cent. Further investigation of those 408 cases brought out the following interesting facts: (1) In the great majority of the cases a specimen obtained during the first twelve hours following admission rarely showed the presence of acetone; it usually first appeared about that time, attained its maximum about thirty-six hours after admission, and then gradually diminished, all trace being gone by the fourth day, usually. (2) The disease from which the child was suffering appeared to have little, if anything, to do with its causation. (3) Its incidence was greater the younger the child, the percentage affected showing a steady decline from the youngest to the oldest child. (4) On the administration of dextrose it rapidly disappeared, and was completely gone within twelve hours.—*Proceedings of the Royal Society of Medicine.*

CALORIC FEEDING IN TUBERCULOSIS.

A STUDY OF THE EFFICIENCY OF THE DIETARY AT THE BOAT CAMP "WESTFIELD."

By N. GILBERT SEYMOUR, A.B., M.D.,

NEW YORK.

ATTENDING PHYSICIAN GOUVERNEUR HOSPITAL TUBERCULOSIS CLINIC AND ST. GEORGE'S CHURCH TUBERCULOSIS CLASS.

THE therapeutic agencies for the treatment of tuberculosis at the command of a city dispensary have notably grown in variety and effectiveness during the past few years. The hospital and sanatorium facilities for the treatment of all stages of the disease, while still desperately inadequate to the problem in the larger cities, have been greatly increased, and more provision for the care of the consumptive poor is constantly being planned. Despite this progress, we are still confronted with the necessity of treating the great majority of our dispensary patients in their homes, and in New York—with its congested tenement districts and large foreign population—this means the attempt to treat tuberculosis in an environment totally unsuitable, in most instances, to the application of the cardinal principles of treatment—rest, fresh air, and proper food.

Until the sanatoria and hospitals are equal to the demand—an ideal which may not be realized in many years—the tuberculosis dispensaries must meet the problem of home treatment as best they can. One of the most successful experiments in this home treatment, as applied in New York City, has been the employment of day and night camps for the treatment of ambulant cases. I have elsewhere reported on the general effectiveness of this method of treatment, and the routine established in the several camps now conducted by different organizations.*

The most practical means yet devised of establishing day and night camps in connection with our city hospital clinics has been through the employment of old ferry-boats condemned for active service and renovated for this new use. Three such floating camps are now in service.

The present study, prepared in connection with a report on the work of the Gouverneur Hospital Tuberculosis Clinic, is concerned solely with one feature of the day camp problem as it has arisen on our own Boat Camp, the "Westfield." This feature is the question of diet, and it is one of the most practical problems which has confronted us in connection with the maintenance of our day and night camp.

In a camp with a capacity of one hundred or more patients by day and forty at night, exclusive of nurses and helpers, the food problem is not only of importance from the financial standpoint, but is also a matter of great interest and value in the scientific care of our cases.

During the five months in which the Boat Camp was wholly in charge of the Auxiliary†—that is from July to November, 1908—no attempt was made to provide regular meals for the patients in attendance. The Night Camp had not then been established.‡ The average daily attendance was twenty-

*"The Use of Day Camps and Night Camps in the Home Treatment of Tuberculosis in New York City," MEDICAL RECORD, Sept. 3, 1910.

†The Women's Auxiliary to Gouverneur Tuberculosis Clinic.

‡The first attempt at a night camp was initiated during this first season, nine of the men patients being provided by the auxiliary with cots and bedding and allowed to sleep on the boat.

five patients. A nurse from the Department of Health was in charge. The food supplied consisted of milk and eggs; bread and butter; coffee, cocoa, or tea occasionally; and a considerable quantity of fruit donated at intervals. An average of 30 quarts of milk and 8¾ dozen eggs a day was used. As there was no kitchen equipment at that time, no attempt to serve cooked meals could be made. The very irregular attendance of some of the earliest patients, and our inadequate facilities for detailed records, make it impossible to estimate, even approximately, the average food consumption of individual cases. Two quarts of milk and four eggs were provided daily for each patient, but the patients were supposed to be getting the bulk of their feeding in their own homes.

With the assumption of the control of the boat by the hospital authorities, it became possible to build and equip a model kitchen and to maintain a sufficient staff of helpers to prepare and serve at least one adequate cooked meal for the day patients. The provisions supplied for this purpose were sufficient to provide additional lighter meals for the patients attending Night Camp and for those spending both day and night upon the boat.

It was our intention, from the first, to make these meals and additional feedings conform, so far as possible, with the best and most recent work on the caloric value of the diet in the treatment of tuberculosis; but we were at once confronted with two difficulties, the economic and the racial. Most of the foods of high caloric value which are usually counted upon to raise the fuel coefficient of the diet —such foods as cream, butter, bacon, oil, and eggs —are too expensive for frequent or prolonged use in a city institution deriving its support from public funds. Furthermore, our patients are chiefly Jewish, and their religious prejudice prevents the use of bacon in any form, butter at the same meal with meat, and certain other foods of high caloric efficiency. Unlike the Italians, they are not fond of salads nor of oil, and they eat macaroni sparingly. With limited funds available for the purpose, and dealing with a class of patients trained to definite and rigid habits in their choice of food, we have not been able, as yet, to devise a dietary satisfactorily adapted to the treatment of tuberculosis; but a study of the actual food values of the present dietary is not without interest, and we aim to increase its caloric efficiency to the highest possible point under existing conditions.

TABLE I.

TOTAL EXPENDITURE IN CALORIES OF AVERAGE MAN AT REST.*

	Calories
Radiation from the body of an average man, clothed	1,536
Latent heat due to evaporation of about 1,100 gm. water from the skin and lungs	611
Heating of the expired air	80
Heating of food and drinking water taken cold and raised to body temperature: heat lost by urine and feces, total	53
Work performed by heart and respiratory muscles, plus other internal and exterior actions necessary to the maintenance of the organism, even at rest	150
Total expenditure of heat and energy—calories	2,430

*Gautier: "Diet and Dietetics." Rice-Oxley translation.

It has been estimated that a normal (healthy) man requires, while at rest, about 33 calories per kilo of body weight each day (Krohl: "Principles of Clinical Pathology." Howlett translation.) For a man of average weight (say 70 kilos, or approximately, 150 pounds) this represents a daily requirement, in food value, of 2,310 calories; and this not to increase his weight, but merely to maintain an equilibrium between food intake and bodily waste. To express it in terms of expenditure of heat and bodily energy, it has been estimated that the number of calories lost directly, or corresponding to a slight expenditure in the form of work (energy), of a man at rest, is as shown in Table I.

This total (2,430 calories) expenditure approximately balances the required value of food consumed (2,310 calories) in order to maintain the body equilibrium, or in other words, to prevent loss of flesh. It must be remembered, however, that these figures represent a man of average weight, at rest and in health. In dealing with disease, especially with febrile or wasting diseases like typhoid or tuberculosis, a certain additional percentage of fuel is necessary in order to meet the febrile increase in heat production. In typhoid fever, this necessary increase has been estimated at 25 per cent. for the average patient; that is, 41 calories per kilo of body weight per day, or approximately 3,000 calories a day, as the minimum requirement for a man weighing 150 pounds. (Coleman: "Diet in Typhoid Fever." *Journal A. M. A.*, October 9, 1909.) This is estimated to be the minimum requirement, and typhoid dietaries representing 4,000 to 6,000 calories and over have been used with excellent results.

The problem of increasing the caloric value of the food in the treatment of tuberculosis has been the subject of much study and experimentation within the past few years. Careful investigation of the effect of special dietaries based upon the principles of high caloric efficiency have been made in selected cases, or groups of cases, in many of the sanatoria; and elaborate diet lists and tables of results have been published. These investigations and their accompanying results have led no less an authority than Professor Irving Fisher to conclude that excessive diets are not necessary for satisfactory gains in weight with tuberculosis patients. He states: "Given proper foods and proper proportions of food elements, the average tuberculosis patient can be successfully nourished on 3,000 calories per day. In other words, on no more than is usually consumed by the ordinary sedentary man. . . . Weight-gaining which is purchased at the cost of strain on the physiological machinery does not mean permanent benefit." (Fisher: "Diet in Tuberculosis." Proc. Sixth Internat. Cong. Vol. I, Pt. 2.)

In an institution as small, relatively, as our Boat Camp, and so entirely under control, it seemed at first thought a comparatively simple matter to arrange a dietary upon the caloric basis or, at least, to estimate the exact caloric value of the food used. The latter investigation is logically the first to be undertaken, as it is evident that only after an estimate of the value of the existing dietary had been made could modifications be rationally introduced. Such an estimate was therefore undertaken, but it soon became apparent that no average diet could be estimated for the individual patients, both because of racial differences, with corresponding variations in diet, and because of irregularity of attendance. Furthermore, it proved to be very difficult to estimate accurately the daily consumption of all kinds of food. For example, the suet used for puddings is of the highest caloric value, but it was not used daily and the quantity used on different days varied in accordance with the number of patients in attendance on each occasion. A practical plan for a reasonably accurate estimate of the existing

dietary was finally suggested in the course of discussion at staff meeting.* This plan consisted in selecting one month, of fair average attendance, and having all provisions carefully estimated at the beginning and end of that period. As all supplies and provisions are sent to the camp in quantity on requisition from Bellevue, the difference between the amount on hand the first day of the month plus all food requisitions during the month, and the amount on hand the first day of the month following, obviously represents the total quantity of food used during the stated period. We selected the month of July, 1910, for the estimate, and the list of foods used during that period, with the exact quantities, was prepared by the senior boat nurse. By reference to standard tables of calories, the total value of these foods in the quantities used was next estimated. This is shown in the following table:

TABLE II.

FOOD USED ON BOAT CAMP "WESTFIELD" DURING THE MONTH OF JULY, 1910, WITH ESTIMATION OF THE CALORIC VALUES.*

	Pounds	Calories Per Pound	Total Calories
Milk (whole), 2,790 quarts	5,580	325	1,813,500
Eggs (raw), 930 dozens	1,511.25	720	1,088,100
Beef	865	1,460	1,262,900
Bread	496	1,395	691,920
Sugar (cane)	350	1,820	637,000
Potatoes	1,260	375	472,500
Soup meat (average beef)	390	982	382,980
Butter	77	3,615	278,355
Chopped meat (average beef)	135	982	132,570
Veal	150	580	87,000
Prunes	56	1,400	78,400
Fish (general average fresh fish)	250	300	75,000
Fat for puddings	20	3,770	71,400
Carrots (like parsnips)	210	230	48,300
Rice	21	1,630	34,230
Onions	140	225	31,500
Macaroni	16	1,665	26,640
Cabbage	170	155	26,350
Barley	11	1,800	19,800
Beets	100	185	18,500
Apples, dried (edible portion)	54	290	15,660
Hominy (like barley)	8	1,800	14,400
Beans	38	360	13,680
Farina	7	1,700	11,900
Peaches (canned)	58.5	190	11,115
Oatmeal	5.5	1,860	10,230
Peas	40	255	10,200
Apricots (canned)	12.5	460	5,750
Tomatoes (canned)	64	80	5,120
Raisins	4	440	1,760
Total calories in food used (31 days)			7,376,760

*Chittenden:—"Physiological Economy in Nutrition," 1904. "The Nutrition of Man," 1907.
Hutchison:—"Food and the Principles of Dietetics." 1908.
Woodruff:—Bulletin 28 U. S. Dept. Agriculture.
Friedenwald and Ruhrah:—"Diet in Health and Disease."
Lusk:—"Elements of the Science of Nutrition," 1909.
Thompson:—"Dietetics." Last Edition
In the foregoing table, the foods are arranged in the order of the number of calories contributed to the total diet for the month; but it is at once apparent that this is not the order of greatest caloric efficiency. For example, the fat (suet or lard) used in the puddings has the highest food value (in calories) of any in the list (3,570 C. per pound), yet it does not head the diet because of the comparatively small amount (20 pounds) used. A more striking example—since pure fat can be used in any diet only in limited quantities—is furnished by the cereals. Thus, oatmeal has a caloric value (1,860 per pound), greater than cane sugar (1,820 C. per pound), yet it contributed but little to our totals because the amount used (5½ pounds) was so insignificant.* Macaroni is another example of a food of high value relatively little used. Oil and bacon are altogether absent from our list of available foods.
*There might have been some difference in the totals if a winter month had been selected; but, on the other hand, the average attendance is greater in July than, for instance, in January, and the variety of foods supplied is about the same.

Since the total amount of food used at the Boat Camp during July (1910) represented a fuel value of 7,376,760 calories for 31 days—or 237,960 calories per day—it remains to estimate the average caloric value of this diet for the individual patient.

*This very practical suggestion was made by the chairman of the Women's Auxiliary, Mrs. Mandel, who has taken the keenest interest in the preparation of this report.

The total attendance at the camp during the month selected was 2,456. The average daily attendance was 81. There were 24 patients at the Night Camp. It should be remembered that the food was served as a noon meal to all patients attending Day Camp, with extra nourishment—consisting of bread and butter, milk, and two eggs for each patient—at 11 A.M. and 4 P.M. A breakfast of cocoa or coffee, bread and butter, eggs, milk, and cereal was provided for the Night Camp patients or those in attendance both day and night. Bread and milk was also given out in the evening when there was any surplus. It is apparent that these morning and evening meals must be deducted from the general estimate, since the Night Camp patients received the greater part of their food elsewhere. The breakfast, estimated approximately at 672 calories, and the evening nourishment 272 calories (see Tables III and IV), together represent 944 calories used for each Night Camp patient, or a total of 22,656 calories per day. This reduces the total estimate to 215,304 calories per day; and this, among 81 patients (the average daily attendance), represents an average per patient of 2,658 calories per day. If this average were accurate in the individual case it would satisfy the dietetic requirements at the camp, we think, since these patients were getting two meals a day in their own homes and in the majority of instances two home meals would certainly suffice to raise the total calories to 3,000 per day, or over; but the estimate is necessarily only approximate, and certain inaccuracies are apparent. Thus, while the average daily attendance was 81, yet the individuals counted were not always the same patients, some dropping out or attending irregularly and others taking their place. Again, while the average value of the food used daily is easily estimated, not all the patients were eating the same quantities or the same variety. Because of individual variations in appetite and personal idiosyncrasy, as well as for the foregoing reasons, some patients were doubtless getting more than the necessary amount of food (or the estimated caloric requirement), and others less. Furthermore, children were estimated with the adults, although they had more milk, proportionately, and less of other foods.

An effort to make the individual estimate more exact by working out the caloric value of separate meals was rendered difficult by the necessary variation in the principal (noon) meal from day to day. The following tables are therefore approximate only:

TABLE III.

CALORIC VALUE OF AVERAGE DAILY DIET ESTIMATED FOR INDIVIDUAL PATIENT.*

BREAKFAST	Calories
Coffee or cocoa, 1 cup (value of the contained milk and sugar only)	50
Bread, 2 slices	132
Eggs, 2	150
Milk, 1 cup (7 ounces)	140
Cereal, 1 standard portion	100
Butter, 1 standard portion	100
Total, calories	672

A.M. NOURISHMENT—11 A.M.	Calories
Bread, 2 slices	132
Butter, standard portion	100
Milk, 7 ounces	140
Eggs, 2	150
Total, calories	522

*These estimates are based upon a table of the approximate caloric values of "standard portions" (equal to 100 calories each) which was worked out by a New York Hospital nurse, Miss F. M. Johnson, and quoted in the *American Journal of Nursing*, Vol. X. No. 7 (April, 1910).

NOON MEAL

	Calories
Soup (vegetable), estimated	50
Meat (or fish), one portion	100
Potatoes (1), baked or boiled	100
Parsnips or carrots	50
Bread, 2 slices	132
Stewed fruit, one portion	100
Tea (with sugar)	33
(Or milk, 7 ounces, for the children—140 calories)	
Total, calories*	565
Total (children), calories	672

P.M. NOURISHMENT—4 P.M.

	Calories
Same as A.M. nourishment	522

*The total calories used in the noon meal is obviously underestimated in this table, as will be seen by a comparison with the table of total quantities of foods used during the month. The majority of the different foods there listed were used at the noon meal, and the meal estimated above represents a minimum both in variety and in caloric value. To this fact is due the apparent discrepancy between the estimate of the diet by daily average and by average meals. The former (2,658 calories per patient per day) is more accurate than the latter (1,609 calories—as above).

TABLE IV.

TOTALS—ESTIMATED BY MEALS.

	Adults (Day) Calories	Adults (Night) Calories	Adults (D. & N.) Calories	Children Calories
Breakfast	...	672	672	...
A.M. nourishment	522	...	522	522
Noon meal	565	...	565	672
P.M. nourishment	522	...	522	522
Night lunch	...	272	272	...
Milk ....140 C.	...	...	.....	.....
Bread ...132	...	...	.....	.....
272	...	...	.....	.....
Total Calories	1,609 Plus 2 home meals	944 Plus 2 home meals	2,553 Plus 1 home meal	1,716 Plus 2 home meals

In these estimates, also, no account could be taken of individual variations in diet, and the children were estimated with the adults although their diet was higher in food values and lower in quantity. It should be noted again that no cream, bacon, or salad oil was used in this dietary, and that butter could not be used at the same meal with meat.

From the foregoing study of the dietary at our Boat Camp it may be concluded that with a fair variety of ordinary foods, and with no attempt to employ special diets or forced feeding—other than the extra nourishments morning and afternoon, and an abundant supply of milk and eggs—a fairly high average of caloric value has been attained. But considering the average home conditions of our patients, most of whom come to us ill-nourished, we believe that this dietary could be raised to 3,000 calories or more daily with advantage to the majority of those attending the camp regularly or living there. To accomplish this would require not so much a change of foods as the more frequent use of those of higher value—such as cereals, macaroni, prunes, bread, and certain stewed fruits—in place of bulkier foods of fewer calories, as potatoes, tomatoes, onions, cabbage, etc. It might be possible also to encourage a more liberal use of butter at all meals except dinner, and to introduce lactose in place of cane sugar.

To estimate the diet of the individual patient with absolute accuracy, or to adapt the diet exactly to the needs of the individual—a procedure which involves the exact measurement of all foods consumed daily by each patient—has been impossible heretofore because of the inadequate number of assistants trained for such work and because of the lack of patients with sufficient intelligence to cooperate in such an undertaking. It is our purpose, however, to work gradually toward that ideal by the selection at first of a few of the more intelligent and trustworthy of our patients—such as those already selected for the "intensive" or "class" treatment—for special diets which they will be taught to estimate with accuracy and enter for us upon their daily records. With such a beginning, a gradual modification of the entire dietary can be effected in time, and the individual patient receive that personal attention, adapted to his individual needs, which is the ideal of all treatment.

129 East Seventeenth Street.

TUBERCULOSIS OF THE BRAIN;

REPORT OF A CASE OF TUBERCLE OF THE LEFT OPTIC THALAMUS.

By J. L. POMEROY, M.D.,

MONROVIA, CAL.

The following case of a solitary tubercle of the optic thalamus deserves to be recorded, not only because of the rarity of such a lesion, but also because of the peculiar symptoms. The patient was under my observation and exclusive care, hence the records throughout are the results of daily notes. It is regretted that the tests for sensory changes and for hemianopsia were inconclusive owing to the mental symptoms. The patient fell under my care while resident physician at Riverside Hospital Sanatorium, New York City, during the fall of 1908.

A. F.—Father is alive, 64 years old, in good health; not alcoholic; occupation, laborer; mother died thirteen years ago, cause unknown. There is no history of cancer or insanity. There are four brothers and two sisters living; all are well. One brother died of typhoid fever. One sister died of tuberculosis at the age of 21.

Nothing is known of the patient's early childhood. He is the fourth child; was born in Faversham, England, and his mother used to fear that his lungs were weak. The patient is 30 years of age; has had no serious illness, and received little schooling. He left home at the age of twelve and did odd jobs in London until eighteen. At the age of 18 years he was a fireman. His early habits were good. He denies the excessive use of alcohol and contracted no venereal diseases. He married at twenty; was earning thirty-six shillings a week. His disposition was somewhat stubborn, but usually quiet and self-controlled. His habits were regular; he was always at work. He never received any injuries, but had two operations for varicose veins of the leg when about twenty-three.

He came to the United States six years ago; worked as a motorman four months, when he went back and got his wife, and returned with her. There are two healthy children; one seven years old, the other four, both girls. The wife seems healthy. She has been working as a janitress since the husband became ill. There is no history of miscarriages. The patient has life insurance in the "Prudential." Pays fifteen cents a week; has had it for three years.

Four years ago patient had a severe hemorrhage (hemoptysis) and was compelled to give up his work as motorman. He attended the Post-Graduate Clinic, realized what his disease was, but gradually lost weight and strength. He finally became so weak that he was taken to Bellevue Hospital and transferred here (Riverside Hospital) August 11. In July he suffered severely from diarrhea; also he went to the Harlem Hospital to have his

right ear examined on account of buzzing. The doctor could not do anything for him. There was no discharge nor symptoms of inflammation. Shortly afterward he complained of dizziness and his wife noticed that he showed slight mistakes in memory. He would tell the children to be quiet; then in a few minutes would ask them why they were so quiet. There is no history of swelling of the feet, no headache, no convulsions, or eye trouble of a serious nature. Once an electric fuse blew out and scorched his eyes, but it was not serious.

No particular symptoms were noted until August 26, when he was found in bed suffering from vertigo; his temperature was 99° F, pulse 110, respiration 22, coughed badly, very emaciated, gait unsteady, expression staring and blank; his skin shows no scars. There was a marked Romberg's sign; his reflexes were all normal, the knee jerks perhaps a little lively but equal; the right pupil was a little larger than the left and did not react as well

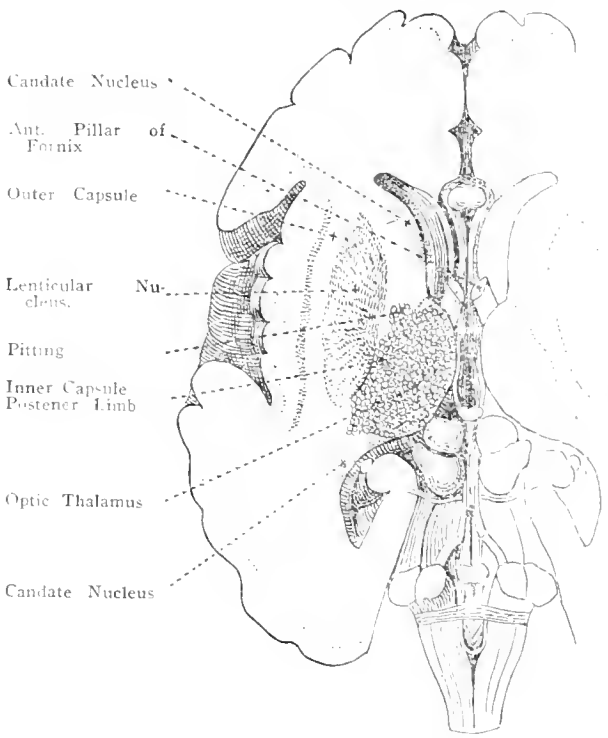


Fig. 1.—Location of the tumor in a case of tubercle of the brain; left optic thalamus (schematic).

for light. His left nasolabial furrow was a little deeper than the right. There was no tremor of tongue or face; his hands were slightly tremulous; there were no changes in sensation. At times one noticed a little nystagmus.

Ears.—Hearing normal; watch heard at thirty inches; drum membranes normal.

Eyes.—The opthalmoscope shows reddening of both discs, and a little blurring of the outlines.

Lungs.—Marked infiltration through both upper lobes; scattered râles at the bases. Signs of cavity formation at right apex.

Heart sounds feeble, apex in sixth interspace; no murmur.

Urine.—Specific gravity, 1015; reaction, acid; color, cloudy straw; amount in twenty-four hours, 32 oz.; sugar, negative. There was a very large amount of albumin and microscopic examination showed many hyaline and granular casts, no pus cells.

Abdomen.—Slight tenderness over the epigastrium; liver dullness extends about 4 inches below the midsternal edge.

Extremities.—The muscles of the calves are much emaciated, but there is fair muscular power.

Mental Condition.—The patient goes to his meals regularly and shows nothing queer in his actions in the ward. His movements are a little slow and uncertain. He sleeps well and he does not show much confusion as to his surroundings.

Orientation.—What month is this? I don't know. I feel a little upset, perhaps *personally* I could tell you right away you know it is not; isn't." He gives the time of day, but calls it correctly at one time; then incorrectly at another. He knows he is in a hospital, but cannot name it; thinks he can get away by train; New York City is about two miles away. He recognizes doctors and nurses, but does not remember their names.

Memory.—This was gone over with his wife, who was able to point out deficiencies. He cannot remember how long he has been in the hospital, says three weeks (two weeks); states that he went to a hospital three weeks ago to have his ears examined, but wife says it was in June. Gave his age correctly (30 years), where he was born, and the date, August 12, and yet he could not tell when his last birthday was, and could not give the month of the year (which was August). He could not tell his occupation, his wife's name, nor his children's names, but he recognized them when they were given him. He could not give either his father's or mother's name, nor could he remember his sister' or brothers' names until his wife prompted him. Also he failed to give any connected history of his life; could not remember what steamboat he came over on; knew that he came over here six years ago; that he worked for the Met. R.R.

He would hesitate a long time over a question, often expressed feeling of inadequacy, and occasionally showed perseveration. Called wife "Sis," which was not habitual. Is your appetite good? "My appetite has been good; once or twice it has been rather *dizzy*, you know." Which child were you? "That was the fourth child born." Which child? "That child." What do you mean? "Why, the fourth, Fred, Alf, George—that's all." That's only three. "That's what I'm saying." What hospital is this? "This is a funny; I can't never think of the hospital. It's St. Luke's." Where is St. Luke's? "Up to the Union." What do you mean? "Why, up to the Union." I don't understand. "It ain't no funny kind of a place. It's just an ordinary place like any other hospital." You mean it belongs to the Union? "Yes, but it may not now; you have got it under another name. It doesn't amount to the same name." How do you get there? "I'm saying Union; it ain't the Union at all; it's up to the Grove." Where? "The Railway Grove up Waller Row." What do you mean? "The place they call it I don't know anything else."

He named and picked out a number of articles readily. Knew their uses; understood mewing of a cat, barking of a dog, watch tick, whistling, intonation of voice, scolding, etc.

Alphabet? A, B, C, D, E, F, G, H, I—L, K, that's all. Numerals? Counts from 1 to 20 correctly. Lord's prayer? Can't remember. Months of the year? Correct up to August. Knew Christmas was in December, but did not know what month Thanksgiving Day was in.

Adding.—8 and 11=don't know; 3 and 5=8; 12 and 6=don't know.

Spelling.—New York City, O. K. Brooklyn, O. K. Cincinnati, Cin-cin-cin-nat-nat—. Buffalo, Buf-buf—.

Named days of the week correctly. Named colors correctly. Called meaning of Y. M. C. A., U. S. A., O. K. Identified sweet, sour, salt, and bitter. Gave number of syllables in hospital, dog, but stumbled on Brooklyn.

Emotional Tone.—Generally quiet in his reactions. No inadequate reactions. Cries a little while being examined with wife by his side, and could not explain it. No bizarre reactions.

No Hallucinations but Peculiar Distortions of Vision.—States that when he is lying down the clock on the wall seems to project from the wall about six inches. This disappears when he gets up. He can read well from print, but it takes time and he stumbles a little. He is right handed. He makes no use of gestures, occasionally shows impatience, has good insight. He expresses his difficulty in this way: "I'm all mixed up. I can't think of it. I've got it on my tongue (beats with hand on chair). Oh, dear, dear. I'm all right in my head, I can tell you everything only I get mixed up. I'm just getting forgetful. I can think of everything but I can't spit it out." His speech is clear, he gives the test phrases well. There is no scanning. No repetitions. There is nothing particular in his handwriting.

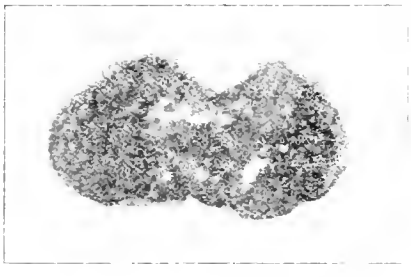


Fig. 2—Solitary tubercle of the brain.

The patient copied drawings fairly well. In writing to his wife his efforts were only partly successful. He addressed her as "Dear Sis," and frequently omitted words and wrote the wrong address. Patient could walk fairly well, but was awkward.

The diagnosis of brain tumor, tuberculous in nature, seemed certain. The exact location was uncertain, in closely reviewing the symptoms, the lack of facial expression, with marked emotional disturbance, the rather smooth right face, the awkward movements, tremulous hands, together with the negative data for other lesions of the brain suggested a thalamus lesion. The classical symptoms (if there are any) on account of his mental condition could not be demonstrated. (Sensory changes and homonymous hemianopia.) Therefore the diagnosis as to exact localization was somewhat uncertain.

The bedside notes of this case showed that on August 30 there was no Balbinski, the cremaster and abdominal reflexes were good, elbow jerks normal. No changes so far as could be determined in sensation. Patient continued unduly emotional, crying a great deal without apparent cause. On being questioned couldn't explain this. There was never any motor aphasia. He never showed any spontaneous speech, and sank gradually into a semi-comatose condition. Never showed any hallucinations or delusions. He gradually sank into coma and died about three months from onset of his first symptoms. Permission for postmortem was obtained only for the brain. Autopsy report follows, with photograph of the tumor and schematic drawing of its localization.

Postmortem Report.—On opening skull there was some thickening of dura. The pia was adherent over both lateral surfaces, over the Rolandic area especially there were white plaques and dense adhesions. The left side of the brain seemed a little fuller than the right. Edema was marked. On opening the lateral ventricles a tumor mass presented itself, in the left optic thalamus. The tip was somewhat translucent, the choroid plexus adherent. Slightly anterior was a pitting and depression. The tumor arises from the region of the optic thalamus, projects internally and a little over the median line. It is a grayish white with dark areas over the surface, at the top in the median line is a semi-translucent area, where the choroid was adherent. A circular pitting about two cm. in diameter and deep lies to the interior outer margin, toward the caudate nucleus. The opposite thalamus is normal. The mass contains hard nodules, though soft in spots. It is embedded in the thalamus. Histological and biological examination showed this tumor to be tuberculous.

In general one can say that organic lesions in the central nervous system occur in pulmonary tuberculosis rather seldom. In some instances there seems to be a locus minoris resistentiæ for brain infection. In other instances actual entrance of large quantities of infectious material is the determining factor, whilst trauma, mental fatigue or mental stress, alcohol, and syphilis all play an etiological rôle.

Solitary tubercle deposits in the brain substance are also rare in phthisis. Kamboseff found in 900 autopsies only twice tuberculous plaques in the temporal lobes, and once a solitary tubercle in left corpus striatum. Greiwe describes a case of a solitary tubercle in the right tegmentum, in a phthisical patient, with paralysis of the left arm and leg. Microscopical examination showed tubercle bacilli in the wall on an artery which ran to the tumor, with degeneration in the tegmentum, the corpora quadrigemina, and the fillet. Putawski reports an almost similar case. Solitary tubercle in the brain may be almost symptomless.

Schlesinger describes a case of central cord tuberculosis in the upper cervical region in a severely diseased tubercular individual. The nerve nuclei and connected nerve fibers were normal. On the side of the lesion, however, from the cervical segment involved in the middle dorsal segment there was descending degeneration. Clinically, there was marked unilateral muscular atrophy of the upper extremity, then rapidly paralysis appeared on the other side with disturbance of sensation, temperature sense and pain sensibility becoming obliterated. The patient died from paralysis of the diaphragm. Bristowe reports a case in which at autopsy there was a recent tubercle in the pons, and an old fibroid encapsulated mass in the cerebellum which was entirely symptomless.

A peculiar form of irritation of the spinal cord is described by Levy and Follet; in lung tuberculosis with cavity formation, in 50 cases they found marked ankle clonus nine times. These patients were neurotic individuals, and the authors thought

that the toxin caused some irritation of the pyramidal tracts of the cord. Leimbach reports a case of tubercle of the cerebellum (Wurm). Tuberculous tumors in the cord are seldom found and may be entirely symptomless. They occur mainly in generalized tuberculosis. As a rule localizing symptoms soon develop one-sided weakness and paralysis. Secondary degeneration is not common, as the condition usually terminates in a short time. Sudeck describes the case of a man 34 years of age who had suffered for two years with tuberculosis of the larynx and lung, began to have pain in left leg, later paralysis of both legs, cystitis, and decubitis. The section showed in the lumbar and lower dorsal area tubercle with typical ascending degeneration. Von Le Boeuf describes a tubercle of the medulla oblongata about the size of a small nut with right sided pain and paralysis of the body but no secondary degeneration in the nervous systems. Sachs describes a case in which clinically symptoms of spinal cord tubercle appeared first before the lung symptoms. At autopsy, however, it seems that the lung tuberculosis was only latent, as there was an old cavity and fibrous thickenings of not recent development. P. Foa found in a child who had died of nephritis, an old tubercle in the cerebellum which was practically healed. Some years prior to death, he had at one time had symptoms of meningeal irritation. Gierlich reports a case of tubercle of the brain substance.

In conclusion it may be stated that solitary tubercle of the brain substance, uncomplicated by meningitis is a rarity in pulmonary tuberculosis. In nearly all cases the tumors are multiple or show also meningeal infection. In the case here reported there were no evidences of meningeal involvement nor any tubercles in the other parts of the brain. It is further noteworthy that the lesion in the optic thalamus gave rise mainly to mental symptoms, emotional disturbances, certain aphasic difficulties and few classical symptoms of the "syndrome thalamique." Further there was never any vomiting, headache, convulsions, paralysis or other marked motor symptoms.

BIBLIOGRAPHY.

Bristowe: "Recent Tubercle of the Pons Varolii and Old Congested Tubercular Mass in the Cerebellum," *Brain*, 1891.

Gierlich: "Tuberkulose in Zentral-nervensystem," *Zeitschr.-ärzt Fortbild.*, Nr. 19, 1910.

u. Hirsch, M.: "Tuberkel im Hernstamm," *Deutsche med. Wochenschr.*, Nr. 35, 1910.

Greiwe: "Ein solitarer Tuberkel im rechten Grobhirnschenkel, bezw. in der Haube mit Degeneration in der Schleife," *Neur. Zentralbl.*, 1894.

Foa, P.: "Heilung eines Klein hirntuberkels," *Riforma Med.*, 1911, Nr. 1.

Kamboseff: "Klinisch statistische Untersuchungen über Lungenschwindsucht," Jnaug.-Dissert., Zurich, 1894.

Levy und Follet: "Über den Fussklonus bei Lungentuberkulose," Soc. de neur., 1901, *Ref. Neur. Zentralbl.*, 1901.

Leimbach: "Ein symptomlos verlaufener Fall von Kleinhirn tumor (Tuberkel im Oberwurm)," *Deutsche Zeitschr. f. Nervenheilkunde*, 1891.

Putawski: "Ein Fall von Tuberculum solitare im rechten Grobhirnschenkel," *Ref. Neur. Zentralbl.*, 1895.

Schlesinger: "Über zentrale Tuberkulose des Ruckenmarks," *Deutsche Zeitschr. f. Nervenheilkunde*, 1806.

Sudeck: "Ein Fall von Tuberkelbildung im Ruckenmark," "Jahrb. d. Hamburger Staatskrankenanstalten," 1806.

Sachs: "Kurze Mitteilung über einen Fall von solitarem Tuberkel des Halsruckenmarks," *Neur. Zentralbl.*, 1887.

Von Le Boeuf: Quoted by Jessen, page 33, "Lungenschwindsucht und Nervensystem," Jena, 1905.

SAFETY AND SCIENCE IN NITROUS OXIDE ADMINISTRATION.

By RAYMOND C. COBURN, M.A., M.D.,

NEW YORK.

In the MEDICAL RECORD, May 4, 1912, I outlined "A Scientific System of Administering Ether." This is intended as a companion article, dealing with the same phase of nitrous oxide administration. As will be subsequently shown some of the principles involved in the administration of nitrous oxide and of ether are identical and include a separate and pliable control of oxygen and of rebreathing, sterilization of all parts contaminated by rebreathing, and locating the rebreathing bag close to the patient's face. Constant and even flow of gases, pressure-reducing valves, percentages gauges, positive pressure, etc., which at present are being so highly lauded, especially by those interested in the manufacture and sale of these expensive appliances, are not only unnecessary, but may be productive of actual harm, as will be later shown.

As is the case with ether, nitrous oxide is administered through inhalation by one of two general systems: (1) without rebreathing; (2) with rebreathing, or by various modifications of these two systems.* With rebreathing the flow of gases may be constant or intermittent, while without rebreathing the flow should be constant.

In the administration of nitrous oxide one of the first questions to decide is whether it shall be administered with or without rebreathing. Is it scientific to administer it with rebreathing or is rebreathing used simply to lessen the cost? After an extensive experience with both systems of administering nitrous oxide in major surgery it is the firm belief of the writer that rebreathing nitrous oxide is scientific and adds an element of safety to this form of anesthesia. Henderson, with his remarkable work on carbon dioxide, has practically revolutionized the science of administering anesthetics, and no longer can rebreathing be considered a mere matter of dollars and cents.

In normal life the amount of air respired is usually placed at 500 c.c., which at 18 respirations per minute gives a total of about 140 gallons of air respired per hour. In physiological amounts nitrous oxide exerts a "respiratory stimulant" action. In its prolonged administration without rebreathing the amount of respired gases averages 250 gallons per hour. Teter places it at 270 gallons per hour. With a respiration nearly double the normal it is evident that this pronounced overventilation of the lungs markedly lowers the carbon dioxide content of the blood. If Henderson's theory of acapnia being one of the causative factors of shock is correct, and it seems to me that no one who has had experience with both systems of administration, using the proper technic in rebreathing, can doubt it, then there is an absolute and scientific demand for rebreathing in the prolonged administration of nitrous oxide in order to avoid the production of acapnia. Of course, it is recognized that rebreathing is not the only source of the requisite carbon dioxide, as this gas can be administered pure and the same beneficial results follow.

*With ether the names usually given to these systems are the open and the closed, meaning thereby without rebreathing and with rebreathing. In a forthcoming article in the Reference Handbook of the Medical Sciences, Vol. I, I show that the semi-open system, as defined by Hewitt, is impossible of attainment, and that the so-called semi-open system is a modification of the closed system.

but this unnecessarily complicates the administration, and, generally speaking, it is not so practical. In this article, then, the term rebreathing is used in the broader significance of furnishing carbon dioxide.

Henderson[1] says: "Ether in quantities short of profound anesthesia exerts a 'respiratory stimulant' influence which lowers the threshold for carbon dioxide and thus tends to induce acapnia." Nitrous oxide apparently acts in the same manner, only in a more pronounced degree, as the pulmonary ventilation under this agent is about double the normal. This excessive pulmonary ventilation under nitrous oxide is not a theory; it is a fact. The exact amount of nitrous oxide and oxygen used can be easily and accurately determined, and while this amount varies in individual cases it always greatly exceeds the normal amount of air respired. If the acapnial theory is correct the demand for rebreathing in the administration of nitrous oxide is positive and unequivocal, and clinical results clearly support this contention.

Some affirm that before the prevalence of rebreathing in the administration of nitrous oxide there were many reports that there was less shock with this agent than with the other anesthetics, and this is undoubtedly true. This is due to the fact that nitrous oxide, regardless of the method of administration, causes less shock than the other anesthetics. Crile[2] says that under nitrous oxide trauma causes only one-fourth the pathological lesions of the brain cells that occur under ether. In other words, aside from hemorrhage, surgical shock, as to cause and prevention, is chiefly anesthetic, local, and general. Since, then, in the administration of nitrous oxide it is necessary to employ rebreathing to prevent acapnia, the rebreathing itself must be under pliable control so as to fulfill adequately the constantly varying requirements. It is not sufficient that there be simply rebreathing; it must be possible to increase or decrease the amount of rebreathing according to the indications. Where the flow of the gases is continuous it is impossible to increase the rebreathing beyond a certain low limit. After considerable experience with an apparatus that provided for a constant flow, I found it required an average of 125 gallons of nitrous oxide and oxygen per hour, and the rebreathing could not be practically increased beyond this amount, and that, especially in abdominal operations lasting from two to three hours, the blood pressure would become quite low and respiration shallow. Since the advent of rebreathing in nitrous oxide, which is based upon Henderson's nitrous oxide administration, which is based upon Henderson's theory of the physiological action of carbon dioxide, I have used an apparatus in which the flow is intermittent and the rebreathing bag is close to the patient's face. I am now able to increase or decrease the rebreathing at will, and in this manner quite effectually control respiration and blood pressure, except in cases of low resistance or hemorrhage, and in these cases, after the normal saline infusion is given intravenously, the blood pressure does not usually fall again as it does when the carbon dioxide retention is not properly controlled. The explanation of this difference is easily given: in acapnia the fall in blood pressure is due to a dilatation of the venous system, and when the saline infusion is given the blood pressure is usually soon markedly increased and falls again as the venous system further dilates, whereas with a proper retention of carbon dioxide the fall in the blood pressure is due chiefly to a loss in the volume of the blood, and when the saline infusion is given, the volume of the circulating fluid being restored, the blood pressure is likewise improved, and, as the carbon dioxide retention maintains venous tonus, it thereby maintains the increased blood pressure. In other words, in cases of carbon dioxide retention the beneficial effects of the saline infusion are much more permanent than in cases of acapnia.

Another practical point I have learned in the administration of nitrous oxide with rebreathing under pliable control; in abdominal operations, with the peritoneum open, the patient will tolerate to good advantage double the amount of rebreathing that the same patient will tolerate when the peritoneum is closed and there is little exposure of the capillaries. This I believe is due to the fact that carbon dioxide, being a diffusible gas, rapidly transpires through the thin walls of the capillaries into the air whenever there is considerable exposure of these vessels.

The death reported by Boys[3] is highly instructive in this connection. In addition to the report (q.v.) Boys kindly furnished me the following additional information in answer to my questions: "(1) The patient was frightened before and especially as the gas was turned on. He struggled so that it took the orderly and nurse to keep him on the table. It was with difficulty that the doctor finally got him under, taking perhaps fifteen minutes. (2) No preliminary hypodermic medication was used. (3) The anesthetic was administered with rebreathing. This was not begun till he was under, after which time he rebreathed the mixed gases until he showed slight cyanosis. This was not to exceed two or three minutes, after which the gases were changed and used directly for two or three minutes and the rebreathing resumed as before." Everything just mentioned in this case tended to produce acapnia: preanesthetic fear and no preliminary hypodermic; great fright "as gas was turned on"; fright and struggling during a prolonged induction; no rebreathing during the induction, or until after most, if not all, of the damage had been done. When rebreathing was used the type employed would tend to augment the acapnia already existing—two or three minutes of rebreathing, then two or three minutes without rebreathing. This intermittent rebreathing would have the same effect upon the carbon dioxide content of the blood as intermittent light and deep ether anesthesia by the open method. This death was clearly one of acapnia, and these same circumstances and conditions often cause sudden fatalities under ether as clearly shown by Henderson.[4]

The alleviation and prevention of shock is not the only benefit of rebreathing. Nitrous oxide produces a light anesthesia. The retained carbon dioxide increases the respiratory movement and thereby causes the absorption of a greater amount of the anesthetic. In this manner rebreathing deepens the anesthesia. Besides, the regularity of respiration thus secured is a great element of safety in this form of anesthesia, as it tends to prevent periods of apnea so often seen under this anesthetic. While this apnea is usually not serious it may under certain circumstances be the exciting cause of a fatality.[5] It might be interesting to state in this connection that the method of rebreathing with an intermittent flow requires, for major anesthesia, an average of 45 gallons of nitrous oxide and oxygen

per hour, and for hospitals the cost of this anesthesia, therefore, is considerably less than one dollar per hour.

The location of the rebreathing bag is an important matter: it should be close to the patient's face, just as it has always been for ether. However, on most of the specially designed apparatus for the administration of nitrous oxide the rebreathing bag is placed upon the cylinder stand, several feet from the patient. Before the development of the rebreathing method this location was proper, for then the movement was only in one direction—towards the patient's face—and the pressure in the bag relieved the patient of any respiratory work. Rebreathing has entirely changed the conditions; the movement now is in both directions. It wastes the patient's energy to breathe back and forth through a tube three or four feet long. Besides, this long tube causes an unnecessarily rapid accumulation of carbon dioxide and thereby shortens the periods of rebreathing.[6] In addition, the patient is often forced to breathe back and forth through a part of a large cylinder stand that cannot be cleansed or sterilized. This does not even fulfill the requirements of ordinary cleanliness. Sterilization is essential in the rebreathing method.

Pressure-reducing valves to insure a constant and even flow of the gases are without usefulness where the flow is intermittent, for, to fill the bag quickly, the pressure in the cylinder should not be greatly reduced. If there is a constant flow the rebreathing is not under pliable control.

Percentage gauges, giving definite mixtures of nitrous oxide and oxygen, is another favorite theme of manufacturers. The object sought is that the anesthetist may know the percentage of oxygen which the patient inhales. Do surgeons measure their incisions or anesthetists weigh their chloroform? Who knows the percentage of his ether vapor? Oxygen is used simply to maintain the proper degree of oxygenation, the indications for its use are clear, and the amount used is always "q.s," just as it is with ether, chloroform, and the surgeon's knife. Simplify and "scientificize" your apparatus; heavy and cumbersome cylinder stands are an unnecessary inconvenience; throw away your pressure-reducing valves and percentage gauges; save only one rubber bag and place it in its proper location; then administer nitrous oxide and oxygen just as you do any other anesthetic, and cease to expect the apparatus to administer this anesthetic for you!

Positive pressure, for other than thoracic surgery, is another method which is mentioned frequently, the benefit claimed is that a larger amount of nitrous oxide is thereby forced into the blood stream, and this increased amount of the anesthetic absorbed deepens the anesthesia. But does the end justify the means? Here again experience with other general anesthetics sheds considerable light upon this phase of nitrous oxide administration. At the German Hospital, New York City, there has been considerable experience in thoracic surgery with the administration of all the general anesthetics in the positive differential cabinet, as well as in the universal differential pressure chamber with negative pressure. At first, under continuous positive pressure, patients suffered from what seemed to be shock. To prevent this the pressure was released frequently so that the lungs might collapse at frequent intervals, and it was found that patients then withstood the operative procedure better. In operations under negative pressure these undesirable conditions were not experienced. In the intratracheal insufflation method of administering ether it is also considered a matter of safety to release the continuous pressure frequently, and some apparatus have automatic devices for this special purpose. In the light of this experience and practice, then, it may be said without qualification that, as advocated and practised by some anesthetists, the administration of nitrous oxide with continuous positive pressure is productive of positive harm.

A preliminary hypodermic of morphine and atropine is an essential element of safety in this form of anesthesia. Morphine, on account of its depressing effect upon respiration, should always be guarded with atropine. Apnea is much more likely to follow where morphine alone is used. The case reported by Olow[5] is instructive on this point. This case also emphasizes the practical importance of always maintaining a free and unobstructed air way. Means for securing this have been previously discussed.[7] Another important element of safety is the addition of a small amount of ether when indicated, the blood always being kept well oxygenated. Selected cases may be carried through prolonged operations without the need of any ether whatever, but to exclude ether altogether in routine cases in major anesthesia, except when supplemented by local anesthesia, is to court danger. A claim to a few hundred cases of this character,[3] without any ether or other adjuvant anesthetic whatever, adds no assurance that the procedure is safe. A "play to the gallery," whether by anesthetist or surgeon, endangers the patient.

Some critics claim that the after effect of nitrous dioxide with "just a little ether," as far as nausea and vomiting are concerned, are quite as pronounced as those following straight ether. Allen[9] cites one such case and thereby disproves his own contention, for the "exception proves the rule."

Summary.—The essentials are: preliminary hypodermic medication of morphine and atropine; pliable control of rebreathing and of oxygen throughout the administration; blood always well oxygenated; rebreathing bag close to the patient's face; sterilization of all parts contaminated by breathing; and small amounts of ether as an adjuvant anesthetic whenever indicated, or infiltration of the field with a local anesthetic. Pressure-reducing valves and percentage gauges are unnecessary. Constant flow of gases prevents pliable control of rebreathing. Continuous positive pressure is harmful.

REFERENCES.

1. Henderson, Y.: "Acapnia as a Factor in the Dangers of Anesthesia," *American Journal of Physiology*, June 1, 1910, p. 260.

2. Crile, G. W.: "Newer Methods for Further Increasing the Safety of Surgical Operations," *Journal of the American Medical Association*, December 2, 1911, p. 1811.

3. Boys: "Death from Nitrous Oxide and Oxygen Anesthesia," *Surgery, Gynecology, and Obstetrics*, April, 1912, p. 388.

4. Henderson, Y.: "Primary Heart Failure in Normal Subjects under Ether," *Surgery, Gynecology, and Obstetrics*, August, 1911, p. 161.

5. "A Case of Death under Nitrous Oxide-Oxygen Anesthesia," *Surgery, Gynecology, and Obstetrics*, April, 1912, p. 386.

6. "A New Apparatus for Administering and Warming General Anesthetics and New Methods of Administration," *Journal of the American Medical Association*, March 23, 1912, p. 833.

7. "An Improved Breathing Tube," *New York Medical Journal*, August 17, 1912, p. 357.

8. "Gas—Oxygen Anesthesia," *Journal of the American Medical Association,*" May 4, 1912, p. 1342.
9. Allen: "Nitrous Oxide and Oxygen Anesthesia in Major Surgery," *Journal of the American Medical Association,* February 10, 1912, p. 395.

Hotel Bretton Hall, Eighty-sixth Street and Broadway.

A THERAPEUTIC RESOURCE IN HERNIA AND OTHER BOWEL OBSTRUCTIONS.

By WILLIAM FRANCIS WAUGH, A.M., M.D.,
CHICAGO.
PROFESSOR OF THERAPEUTICS, BENNETT MEDICAL COLLEGE.

The basis of the old therapeutics was exclusively empirical. We had no better reason for administering drugs than the whilom favorable results following them, and whether these were *post hoc* or *propter hoc* was generally a question, decided by the optimism or pessimism of the doctor. Our study of drugs in the scientific sense commenced when we secured pure and uniform drugs to study; for naught but uncertain and varying effects were obtainable from uncertain and varying agencies. The utilization of single remedies, chemical salts and active principles in absolute purity, with a definite knowledge of the powers of the remedy and the results following its exhibition in doses pushed to exact effect desired, has given us an armamentarium of limited extent but of priceless value. This "definite knowledge" of the remedy, like the definite knowledge of pathology afforded by the modern laboratory, enables the therapeutist to apply his drugs with an accuracy that approaches the mathematic, instead of the old methods of more or less successful guessing, approximation, measuring of possibilities, timorous "trying," and general inefficiency that so disgusted the practitioner of the past quarter century.

Familiarity with these agents inevitably breeds a confidence in their powers that can not but appear unjustifiable to the man who has not enjoyed such an experience. He who has become accustomed to the quick and radical results of mechanical methods, surgical and others, must be impatient with the slower processes of the drug user, as viewed in the light afforded by his own experience with the crude and doubtful preparations of the past. With this section of the profession the knowledge of the newer therapeutics and the brilliant achievements it makes attainable must come slowly, by demonstration and reasoning that appeals to that element, which, conservative in accepting claims, nevertheless does not wish to lose any real advance in the means of treating the sick.

About twenty years ago the European medical journals, especially those of France, recorded a number of cases in which hyoscyamine was employed to facilitate the reduction of hernias. These reports were quite favorable. A full dose of the alkaloid was administered, and the patient left in quiet until the full action of the remedy was demonstrated by dryness of the mouth, flushing of the face, dilatation of the pupils, and especially by muscular relaxation and subsidence of the tension and tenderness that offered the greatest obstacle to successful taxis. When this condition had been established and the patient was fully under the influence of the drug the hernial protrusion either was restored spontaneously or yielded to the slightest painless manipulation.

This method has been employed in America with similar success, by many practitioners. The preparation found most satisfactory was that known as amorphous hyoscyamine, the combined alkaloids of hyoscyamus. It consists of hyoscine with hyoscyamine, the former usually but not always in predominant proportions. Cushny and Peebles found that hyoscyamine differed from atropine in acting more strongly as a sedative to the vagus, and in the influence over the salivary secretion. Most of the reports upon this alkaloid are useless because the specimens employed contained a proportion of hyoscine. In practice it is not easy if possible to differentiate between atropine and hyoscyamine. I have administered many doses of each, and studied the cases clinically, without being able to detect any appreciable difference, such as would enable me to recognize which of the two might have been employed.

The effects of hyoscine are quite different. They may be readily distinguished from those of atropine, except in those cases in which the body fluids seem to possess the faculty of converting hyoscine into atropine. Then we see typical atropine symptoms follow the administration of hyoscine of known purity. These cases are not so rare as those in which the body fluids possess the property of reducing iodoform and other iodic combinations, and traces of these applied locally induce acute iodine intoxication.

At present we face a difficulty under the administration of the Pure Food and Drug Act. The Pharmacopœia does not recognize the combined or amorphous alkaloids; and the officials entrusted with the enforcement of this law object to the use of the word "hyoscyamine" except for the pure crystallized form. Amorphous hyoscyamine must be crystalline hyoscyamine—which it is not—or the seller may be liable to prosecution. The term "combined alkaloids" may be objected to, because to combine is to unite things previously separate. Some such clumsy term as "total alkaloids derived from hyoscyamus" is required; or a fanciful name devised which renders it proprietary. Otherwise the use of this remedy is illegal!

Frankly, I believe this is for the best; since the quantities and proportions of the two alkaloids vary in different specimens of the plant, and the boasted uniformity of the active principles is lost. It is better to prepare a definite mixture of the two, which may be varied as occasion demands. Experience favors the amorphous alkaloid; in which, as said, hyoscine predominates, but not always and never very decidedly. Since the relative strength of the two is about the same, I would suggest a mixture of three parts hyoscine and two parts atropine. The adult male dose of the combination should be placed at 1/100 grain. The variation in individual susceptibility to these alkaloids is very great. One of my patients is strongly affected by 1/2500 grain of hyoscine, and another exhibited toxic symptoms after taking only 1/1500 grain of atropine. The dose of 1/100 grain should therefore be divided into ten, and one part administered every five to twenty minutes until the desirable effect has been induced. The hernia may then be reduced with little if any difficulty, or pain. If, however, it is an old affair and adhesions confine the sac in its place, it is idle to suppose that any drug can succeed, and operation is to be considered.

Many of those who have thus utilized amorphous hyoscyamine have found it advisable to add strychnine. Hyoscyamine relaxes the circular fibers of the gut, while strychnine energizes the longitudinal

fibers. Waiving all *a priori* discussion of the possibility of such simultaneous antagonistic activities, clinical experience has been distinctly and uniformly favorable to the measure. About 1/250 grain of strychnine may be given with each 1/1000-grain dose of the combined atropine and hyoscine.

The man who denounces any other than surgical treatment for hernia will not favor this suggestion; but what is he to do if the patient absolutely refuses to permit operation? At all events the success of the hyoscyamine method has been so pronounced as to justify its recommendation in suitable cases.

The therapeutic dogma established, of the use of strychnine to stimulate the longitudinal or expulsive fibers of the bowel, and hyoscyamine to relax the circular fibers, its possible applications extend far beyond hernias. In fecal impactions, and the various forms of intestinal obstruction, paresis of the expulsive fibers and spasm of the circular form a factor far more frequent and important than most practitioners suppose. Many a time the use of this combination has deprived the surgeon of a fee for doing an appendectomy or other intestinal operation. In torsion this method is almost invariably successful. In obstipation it is *the* treatment, aided by enemas.

The remedies must be pushed to full effect. When one has witnessed active delirium following 1/1000 grain of atropine he learns caution. When he has pushed his strychnine dosage up to near a grain a day before getting decided evidences of its activity he learns what wide variations dosing to effect requires. Some weaken before reaching the point of effectiveness—imperfect knowledge of the drug induces timidity—the water is fearsome to him who can not swim. But when one finds that excessive doses are requisite he had better begin lower down when he renews his stock. The supply houses still partake of the human fallibility.

1358 Fulton Street.

TWO CASES OF TUMOR OF THE SPINAL CORD.*

By THOMAS A. CLAYTOR, M.D.,

WASHINGTON, D. C.

While reports of tumor of the spinal cord are much more frequently seen now than they were a few years ago they are still of sufficient rarity to justify their publication.

The following cases which have come under my observation have served to arouse my interest in a condition which, if unrecognized, is almost sure to be fatal, and yet one, which if diagnosed early enough, may many times be relieved, at least for a time, and in a few instances, completely cured.

Tumors of the spinal cord may be divided into two classes, the intra- and the extramedullary, according as they are within or without the cord substance. The more usual intramedullary growths are gummata, gliomata, sarcomata, and tuberculamata. Of these the gumma is probably the most common, while the tubercular growth is the most rare.

Tumors found outside the cord substance are again divided into the intra- and the extradural. Those most usually observed are gummata sarcomata, carcinomata, psammomata, lipomata, fibromata, and hydatids. Ostiomata and chondromata have at times also pressed upon the cord from the surrounding bony tissue.

*Read by title before the Association of American Physicians, May 14, 1912.

Case I.—G. H. R., aged forty-eight years, German, married, a printer by occupation. Was admitted to Garfield Hospital February 21, 1910.

Previous History.—Had always been healthy, one attack of gonorrhea when young, no lues.

History of Present Illness.—Four years ago began to have dull aching pain in the left shoulder, which, until July, 1909 (seven months ago), was the only symptom.

About this time the pain spread to the other shoulder and to the spine. In the fall of 1909 the pains became sharp and spasmodic; occurring when he sat in one position for any length of time or turned his body suddenly, also when at stool, or when he coughed or sneezed, and even sometimes upon swallowing. The spasms of pain gradually increased in frequency so that he was obliged to hold his head in a certain position, *i. e.* when lying down the head was inclined forward with the chin, approaching the chest. Turning the head too far to either side produced a spasm of pain which continued until the head was returned to the above described position. When standing he had more freedom of motion, but was apt to have a sharp, steady pain when the head was turned to either side rather than the spasmodic variety. It was an effort to hold the head erect, the shoulders also fell forward, especially the left. Emotion or change of temperature might bring on pain.

In October, 1909, he had entered an institution for treatment after consulting numerous physicians. Here he received electricity and various forms of baths and packs. While taking this treatment he became quite ill with fever and delirium. Strange to say, the pains subsided and did not reappear for three weeks thereafter.

In December, 1909, he was referred to an orthopedic surgeon who put him in various forms of casts which gave considerable relief, probably by limiting motion. About February 14, 1910, the legs and feet began to swell and he began to become quite weak in the lower extremities. Up to this time the symptoms had been sensory. From now on the motor disability advanced rapidly. On February 21 he had to be catheterized for the first time, though for several weeks there had been at times trouble in starting the urinary flow. About February 10 he began to notice that the rectal control was not good, *i.e.*, he was obliged to respond immediately to the desire to defecate to avoid an accident. There had been no loss of weight.

Result of Examination of the Nervous System, February 22, 1910.—Reflexes. Radial and olecranon exaggerated; abdominal absent; cremasteric weak on right, absent on left side; knee jerks exaggerated on both sides, as were the ankle jerks; toe extension more marked on the left.

Sensation.—No loss of sensation to wool anywhere. On the left anteriorly pin pricks were felt over C 8 (the eighth cervical segment of the cord) though there was hypoesthesia over this area. Loss of sensation to pin pricks from D 1 downward (the first dorsal segment of the cord). Posteriorly from D 4 downward. On the right side anteriorly, lost from D 4 and posteriorly from D 5 downward. Relative hypoesthesia to coldness over same segments. The eighth cervical area was not affected on the right side. No loss of sensation to warmth on the left side. Delayed and diminished sensation to ice over D 1 and D 2.

Vibration test.—Definite diminution in sense of vibration in D 1 as against C 7. Could feel sense of

vibration over the spinous process of the seventh cervical which could not be felt in the dorsal region. Diminution of the spacing sense in the third and fifth fingers of the left hand.

Motor symptoms.—Lower extremities quite weak, walked with difficulty. Left arm somewhat weaker than the right. Adduction of the fingers much weaker than abduction on the left, this included the thumb and little finger. Movements of all the small muscles of the left hand much weaker than normal except the abductor of the thumb and the abductor of the fifth finger. Flexion of the thumb was weak.

The more important points were as follows: The long duration of pain, the fact that it might be produced by sneezing or coughing, the attitude of spinal flexion, rigidity, with the suddenness of onset of motor symptoms seemed to indicate root pressure (tumor of the meninges). Pyramidal pressure was shown by loss of cutaneous and exaggeration of deep reflexes. Babinski's sign being more marked on the left, together with other more marked signs of left-sided involvement, suggested that the tumor was on the left side of the cord. Escape of the touch sense shows how hard it is to interrupt conductivity.

Localizing Symptoms.—Sensation: The higher level of the loss of sensation to pin pricks on the left in the absence of the Brown-Séeard syndrome, indicated that the lesion might be higher on the left side. That the lesion was as high as D 1 was indicated by complete loss of pain sense over that segment, and that it projected to C 8 was indicated by diminution of pain sense over that segment. Diminution to the sense of vibration indicated the same level, as did the hypoesthesia along the ulnar border of the left arm, and disturbance of spacing sense of the left hand.

Motility.—The same segment was indicated by the weakness of the small hand muscles and relative strength of the abductors of the thumb. The Wassermann reaction was negative. The leucocyte count ranged from 9,000 to 13,800.

Operation.—Performed by Dr. L. H. Reichelderfer, February 23, 1910. The cord was exposed by removal of the laminæ of seventh C and first D. The tumor was seen lying upon the left lateral aspect of the cord, after opening the dura, to which it was attached. It was also adherent to the pia, but could be separated from the latter without injuring it. The operation was done rapidly and skillfully, and the shock was apparently not very great. The pain was not relieved, however, nor were the nervous symptoms, except that the reflexes were no longer exaggerated. Death occurred seven days later. The temperature reached 107.2° F. shortly before death. Microscopic examination showed the tumor to be a fibrosarcoma.

Case II.—J. D., white, male, aged forty-five years. Stone-cutter by occupation. Was admitted to Garfield Hospital, January 16, 1912.

Complaint.—Pain and stiffness of the neck. His family history was negative. He stated that he had suffered from typhoid fever and malaria, and from an attack of inflammatory rheumatism which began a year before his admission and lasted more than six months. (It seems quite possible that the pain experienced in this attack was really due to the spinal tumor rather than to rheumatism.) He denied any venereal disease.

Present Illness.—Four weeks ago he began to have pain in the neck. The onset was gradual. The pain was constant and more severe when he attempted to lie down. He soon was obliged to spend his time sitting in a chair with the head forward and the chin resting on his chest. Any attempt to hold the head erect or turn it to either side caused severe pain in the cervical and uper dorsal region. The pain which at first was confined to a small area on either side of the upper dorsal region became severe in the cervical region and ran down the arms into all the fingers. About February 1 urinary incontinence developed.

Physical Examination.—A thick-set, well-nourished man, five feet seven inches in height, and weighing about 190 pounds. The head was held in the median line, well forward by anterior flexion of the upper dorsal and cervical spine, the chin resting on the chest. The neck, which was very short and thick, was buried between the elevated shoulders. The feet and ankles were swollen and edematous. The knee and ankle jerks were greatly exaggerated, ankle clonus was present on both sides; there was some doubt as to the dorsal toe flexion on the left, but it was distinct on the right. The cremasteric and abdominal reflexes were absent on both sides. The wrist jerks were bilaterally absent, the elbow jerks present. The lower right scapular reflex was feeble, hyperactive on the left. Deltoid reflex feebly present on the right side.

Motor Signs.—Gait slow and unsteady. Muscles of the lower extremities weak.

Upper Extremities.—Unable to oppose thumb and little finger of left hand. Movements slow and weak. Apposition imperfect over third finger. Flexion of left thumb weak. Apposition weaker of the right than of the left thumb. Other movements of the right side all stronger. Flexion, extension, abduction, and adduction of left wrist weaker than of the right, but feeble on both sides. Flexion of both forearms very weak. Extension stronger on the right.

Shoulders.—Abduction of both shoulders weak, as was elevation of the arms. Adduction a little stronger. Propulsion also weak. Retropulsion much weaker on the left side. Elevation very strong. Depression very weak on the left. Stronger on the right. Adduction of shoulder-blades quite strong. Contraction of the diaphragm seemed strong.

Neck—On passive motion pain was felt in the upper dorsal region of spine opposite the spines of the scapulæ, especially on the right. (A few days later the pain was felt more in the mid-cervical region.) Over the upper portion of the neck there was a decided dark red congestion of the skin, suggesting a deep-seated inflammatory condition. Percussion over the spinous processes caused pain in the lower cervical and upper dorsal regions. (Later the greatest pain was noted in the mid-cervical region.)

Sensation.—No loss of tactile sense anywhere. Some anesthesia over dorsum of right foot. Pain sense apparently lessened as far up as the umbilical region. (Later this could not be satisfactorily demonstrated.) There was no altered sensation anywhere in the upper extremities. No abnormal response to the hot and cold test anywhere, or to vibration. No abnormal condition could be demonstrated about head or neck. There was urinary incontinence.

The points worthy of consideration were the following:* The marked weakness of the flexors of

*It seems as well to leave out of account the motor findings in the hands and forearms which were rather confused.

the forearm and of the deltoids suggested that the lesion was at least as high as C 5 or C 6. The only shoulder movements retained in any considerable degree were elevation and adduction of the shoulder-blades. The former performed by the trapezius (supply derived from C 2, 3, and 4) and the elevator of the angle of the scapula (supply derived from C 3, 4, and 5). The latter is performed by the rhomboids (supply derived from C 4 and 5) and the trapezius. The apparent atrophy of the infraspinatus and supraspinatus also suggested that the lesion involved C 5 or C 6. The apparent competency of the diaphragm (C 3, 4, and 5) seemed to indicate that one or more of these segments was functionating.

Taking the above motor data—there were no sensory to guide us—it seemed probable that the lesion would be found between C 3 and C 6. The *x*-rays showed nothing abnormal in the vertebræ. The Wassermann and tuberculin tests were negative. The leucocyte count was 7,000. The lymphocytes were perhaps slightly relatively increased, being 26 per cent. to 61 per cent. of the polymorphonuclear.

Spinal Fluid.—Cell average about 1 to the cubic millimeter. Protein content much increased (strongly positive butyric-acid reaction). The temperature was somewhat irregular, ranging between 98° and 100° F., occasionally reaching 101° F. The pulse ranged from 80 to 100. The respiration from 18 to 24 to the minute. The operation, which was performed by Dr. A. A. Snyder, February 15, 1912, was extremely difficult because of the great size of the neck. The spinal cord was exposed opposite to the fifth and sixth cervical vertebræ, but apeared to be normal, and as the localization was not positive and as the anesthesia had already lasted more than two hours, it was deemed best not to go further. The patient never rallied, though he lived for five days, in great pain, except when under morphine. The temperature reached 106° F. just before death.

Autopsy—A flat tumor was found pressing upon the anterior surface of the cord opposite the third cervical vertebræ. It seemed to take its origin from the dura, and was firmly attached to the body of the vertebræ, which had the appearance of being eroded. It would appear that the cord had been exposed about an inch too low, but careful study of the specimen shows that the needle holes made in the dura for its closure during the operation began on a level with the lower border of the tumor (possibly due to shrinkage of the tissues). Had a probe been passed upward in the spinal canal the tumor must have been felt. Its removal, however, would have been practically impossible without great injury to the cord or nerve roots.

Microscopic examination showed the growth to be gumma of the dura (pachymeningitis cervicatis hypertrophica).

I may have erred in not trying an antiluetic treatment in spite of two negative Wassermann reactions (one of the spinal fluid and one of the blood), but the man's condition was so critical and he was growing worse so rapidly that I dared not wait longer before attempting operative relief, thinking that even if the suspected growth should prove to be syphilitic it might be removed and then treatment instituted.

I wish to acknowledge my indebtedness to Drs. J. B. Nichols, W. W. Wilkinson, and LaFora for laboratory work on these cases, and to Dr. T. A. Williams for his skillful aid in their clinical study.

The radicular innervation of the muscles was taken from Villger's latest classification as given by Bing in the Compendium of Regional Diagnosis, 1909.

1826 R Street, N. W.

A SIMPLE, EFFICIENT, AND ELASTIC SYSTEM FOR INDEXING CASE HISTORIES AND FILING CURRENT LITERATURE AND REFERENCES.

By E. MacD. STAUNTON, M.D.,

Schenectady, N. Y.

Several years ago the writer devised a system for filing case histories so that the histories of any given class of cases would be available for immediate reference without the necessity of an elaborate system of cross indexing. A little later this same system was applied to the filing of reprints and current medical literature. The system, which is based on the principles of the Dewey library filing system, has proven so simple and efficient in our own work that I believe it worthy of reporting in detail.

One of the secrets of the success of the Dewey system in library work is the substitution of generic numerals for specific titles in the classification of books. By adapting this same principle to the classification of diseases we are at once able to eliminate the confusion arising from differences in nomenclature and, as far as necessary for filing purposes, we can eliminate the confusion arising from uncertainties or even differences in diagnosis.

The following outline shows the divisions used in our work which is limited to a general surgical practice. Those specializing in other lines of work may easily add the necessary detail to the subjects they are especially interested in. The first eleven chief divisions have to do with clinical subjects, the last three are added to show the ease with which the system may be extended to cover other subjects.

OUTLINE FOR INDEXING CASE HISTORIES AND REPRINTS.

I. *Nervous System:*
- 11.—Hysteria.
- 12.—Neurasthenia, hypochondria.
- 13.—Insanity.
- 14.—Meninges (Diseases and injuries of).
- 15.—Spinal cord (Diseases and injuries of).
- 16.—Brain (Diseases and injuries of).
- 17.—Nerves (Diseases and injuries of).
- 18.—Migraine, epilepsy.

II. *Circulatory System:*
- 21.—Heart and pericardium (All diseases).
- 22.—Thrombosis and embolism (including gangrene).
- 23.—Varicose veins, varicocele, arteriosclerosis, aneurysms.
- 24.—Blood diseases (Anemia, leukemia).
- 25.—Blood vessel surgery.

III. *Respiratory System:*
- 31.—Nose and nasal cavities.
- 32.—Antrum, frontal and ethmoidal sinuses.
- 33.—Larynx and trachea.
- 34.—Lungs (Pneumonia, bronchitis).
- 35.—Pleura (Pleurisy, empyema).

IV. *Alimentary System:*
- 41.—Hare lip and cleft palate.
- 42.—Tongue and salivary glands, esophagus.
- 43.1.—Appendicitis, acute.
- 43.2.—Appendicitis, chronic.

44.1.—Stomach—Surgical diseases.
44.2.—Stomach—Medical diseases.
45.—Liver and gall bladder.
46.—Pancreas.
47.—Small and large intestines.
48.—Rectum and anal region (Fissure and fistula in ano—hemorrhoids).
49.—Enteroptosis.

V. *Genitourinary System and Gynecological:*
51.—Kidneys and ureters.
52.—Bladder.
53.—Prostate.
54.—Urethra and penis.
55.—Testicles, epididymis, vas, and seminal vesicles.
56.—Uterus and endometrium, obstetrics.
57.—Malpositions of the uterus.
58.—Cervix and perineum, vagina.
59.—Tubes and ovaries.

VI. *Hematopoietic System and Unclassified Glands:*
61.—Lymph nodes; spleen—nontuberculous diseases.
62.—Lymph nodes—tuberculous.
63.—Thyroid (Goiter).
64.—Tonsils and adenoids.
65.—Skene's glands, Bartholin's glands.
66.—Mammary glands.
67.—Adrenals, pituitary, thymus.

VII. *Osseous and Muscular System:*
71.—Bones—nontuberculous affections.
72.—Bones—tuberculous.
73.—Joint affections—nontuberculous, also bursitis—synovitis.
74.—Joint affections—tuberculous.
75.—Flat foot.
76.—Spinal curvature, ligament strains, contractures.
77.—Myalgia.
78.—Club foot—congenital malformations.

VIII. *Special Senses. Skin and Derivatives:*
81.—Eye.
82.—Ear.
83.—Mastoid.
84.—Skin, hair, nails, and teeth.

IX. *Tumors:*
91.—Benign tumors (except myoma), cysts.
92.—Myoma uteri.
93.—Carcinoma, hypernephroma.
94.—Sarcoma.

X. *Infections:*
101.—Septic infections. Infections of extremities—abscesses.
102.—Peritonitis, adhesions. (See also under special organs.)
103.—Gonorrhea.
104.—Syphilis—chancroid.
105.—Infectious diseases—influenza, typhoid, etc.
106.—Tuberculosis. (See also under special organs.)

XI. *Traumatisms:*
111.—Fractures.
112.—Lacerations, stab and gunshot wounds, foreign bodies.
113.—Sprains, dislocations.
114.—Contusions.
115.—Hernia.
116.—Burns.
117.—Shock and hemorrhage.
118.—Electric shock.

XII. *Therapeutics and Pathology:*
121.—Medicines and drugs.
122.—Poisons.
123.—Diet lists.
124.—Anesthesia.
125.—General pathology.
126.—Pathological technique, laboratory methods, etc.
127.—Theoretical immunity, anaphylaxis, etc.
128.—Opsonins and vaccines.
129.—Antiserums, hemolysins, and allied sera.

XIII. *Technique, Hospital Problems, Nurses:*
131.—Surgical technique—operating room.
132.—Surgical technique—preparation of patient and after treatment.
133.—Surgical technique—suture materials, instruments, etc.
134.—Hospital construction, furnishings.
135.—Hospital management.
136.—Nursing.
137.—Nurses' lectures and addresses.
138.—Medical society.
139.—Medical education.

XIV. *Catalogues, Etc.:*
141.—Drug lists.
142.—Catalogues—laboratory supplies.
143.—Catalogues—operating room fixtures.
144.—Catalogues—instruments.
145.—Catalogues—orthopedic apparatus.
146.—Catalogues—hospital beds and fixtures.
147.—Hospital reports.

The system is applied to the cross indexing of case histories as follows: Mrs. B., seen in consultation, presents an old perineal tear with cystocele, fairly marked bladder symptoms, an umbilical hernia and a reasonably clear history of gallstones. When her history is filed it is given the numbers 58 (perineum), 52 (bladder), 115 (hernia), 45 (gall bladder). If the physician himself has not time to add the numbers any interne, or assistant, or an experienced history clerk can add the numbers with all the accuracy that is really necessary.

No further cross indexing is necessary, for whenever it is desired to review the histories of any given class all that is necessary is to go through the alphabetically filed histories and take out those with a number corresponding to the subject under investigation. It is then an easy matter to select the cases desired for study and if necessary have these transferred to an appropriately systematized card.

The original case histories are kept in suitable sized envelopes and filed alphabetically under the patient's name. In this way all data concerning a given patient, such as special laboratory reports, correspondence, etc., reaches a final resting place in the same envelope.

In applying the same system to the filing of reprints it is only necessary to have a series of linen bound pasteboard boxes such as will fit like books on a shelf, assigning to each box a number corresponding to each separate subject. I use cloth covered pasteboard boxes, ten inches long, one and one-half inches wide, and ten inches deep. Such boxes can be obtained from any paper box company for about ten cents apiece. Each piece of literature relating to diseases of the gall bladder is given the number 45 and filed in box 45; likewise goiter literature is filed in box 63, and kidney literature in box 51.

If as a result of special work along any one line the papers on this subject become too numerous to file in one box it is only necessary to add additional boxes with the same number, or the subject may

be further subdivided to suit the individual requirements of the user. Take for instance the kidney (No. 51). My literature on this subject is filed as follows:

51.1.—Acute and chronic nephritis.
51.2.—General articles on kidney surgery.
51.3.—Renal and ureteral calculi.
51.4.—Hydronephrosis—pyogenic infections.
51.5.—Tuberculosis.
51.6.—Movable kidney—traumatisms.
51.7.—Renal tumors—cystic kidney.
51.8.—Diseases and surgery of the ureter.
51.9.—X-ray—cystoscopy—functional tests.

When the clinical histories are carefully studied in the course of some special investigations it may be advisable to classify them into sub groups, which can be done by adding decimals the same as in the case of the reprints and references, but as a general rule I have found it advisable not to attempt too rigid a classification of the histories, and certainly this should never be done except as a result of an especially careful study of the cases.

At first the boxes were used only for reprints and references to important articles, but it was found so much easier to refer to papers filed in this way than to hunt them up in bound periodicals that for some time past all important papers appearing in the current journals have been cut out, the pages fastened together with a Hotchkiss stapler, and the article filed the same as a reprint. Occasionally two important articles will overlap on a page in the same journal, which necessitates noting that the missing page will be found attached to an article filed in another box.

Since instituting the above filing system our histories have always been ready for immediate use, and I have been able to keep several assistants occupied a good share of the time analyzing the material from various viewpoints and comparing our experiences and results with those reported by other workers in similar fields. I believe that this is the only way in which one can keep a true perspective of the knowledge gained by his own experience and yet most men, even those who keep accurate histories, neglect this chiefly because their histories are not so filed as to be easily available for reference.

The advantages of a simple, workable system for filing current literature are so obvious as to need no further comment.

613 State Street.

True and False Intestinal Flatulence.—D. Roberts concludes that gas varying in amount with the diet is normally generated in the human intestine. Normally it is absorbed, or if convenient, passed when it gives rise to a feeling of slight pressure. The hypochondriac may be apprehensive over just this normal condition. Abnormal flatulence depends on an excessive fermentation or the abnormal accumulation of a normal flatus or a combination of the two conditions. Too much reliance is placed on antifermentative drugs and digestive ferments to relieve the complaint of flatulence. Too little attention is given to benefits to be derived from proper regulation of the bowels through whatever measures may be necessary for the particular case. Attacks of abdominal tympany should be regarded with suspicion and search made for mechanical obstruction or local peritonitis. In a large majority of instances the complaint of gas in the bowels means merely that there is an abdominal discomfort and without sufficient reason it is attributed to gas. Too much stress cannot be laid on the importance of recognizing cases of false flatulence due to anatomical lesions in the abdomen or to disturbances of intestinal peristalsis.—*Long Island Medical Journal.*

Medicolegal Notes.

Basis of Opinion Evidence.—In an action for injuries a physician testified to an examination he made of the plaintiff approximately a month after the accident, and to his finding at that time a bruised place on her hip about three inches square, and that her right ovary was very sensitive and tender, and her womb considerably enlarged and inflamed. He further testified that such a bruise in that region would, as a natural result, produce the condition he found in the womb and ovaries. It was held that such opinion was admissible, being based on objective conditions, and not entirely on subjective conditions. The fact that he was originally called to treat the plaintiff for the purpose of testifying as a witness in her behalf did not render his evidence inadmissibility. Any contention against the evidence could only relate to the credibility of the witness.—St. Louis Southwestern Ry. Co. v. Borne, Texas Supreme Court, 145 S. W. 1186.

Practising Without Authority—Evidence.—An information charged that the defendant, without having been granted a certificate to practise medicine in the State of Montana, "did prescribe and direct for the use of one Emma Van Orsdel, a person then and there afflicted with a certain physical ailment of the body, to wit, sickness resulting from pregnancy, a certain appliance or apparatus, to wit, a certain surgical instrument, commonly known as and called forceps." The Montana Rev. Code, § 1591, 8544, is directed against the offense of practising medicine or surgery without having first obtained a certificate from the State Board of Medical Examiners. The information, however, having charged that the accused's offense consisted in the giving of a particular prescription, the conviction could only be sustained by proof of that particular act. This being awaiting, the judgment of conviction was reversed.—State v. Morris, Montana Supreme Court, 122 Pac. 917.

Regulation of Practice—Discretionary Power of State Board of Examiners.—In an action for a writ of mandate against the State Board of Medical Examiners of the State of Idaho, the question presented was: Can the medical board require an applicant to pass an examination where he holds a license from a medical board of another State where the board of such other State required an examination on all the subjects required by the board of the State of Idaho, and the applicant was awarded an average grade of not less than 80 per cent. and has in all respects complied with the requirements of the statute. The question was answered in the affirmative, the Idaho statute regulating the practice of medicine and surgery within the State being held to confer a discretionary power upon the board. Under the provision of Section 1342 of the Idaho Revised Codes the Legislature grants power to the board of examiners to determine the qualification of applicants to practise medicine: First, by examination; second, without examination upon the applicant presenting to the board satisfactory proof of the existence of certain facts with reference to the applicant's qualification. When application is made for license without examination certain questions of fact are to be determined: First, that the applicant has been licensed to practise medicine by a similar board of another State; that is, whether the applicant has been licensed, and whether it was by a board similar to the examining board of the State of Idaho. Second, that the applicant holds a certificate of registration showing that an examination has been made by the proper board of any State in which an average grade of not less than 80 per cent. was awarded to the holder thereof. Third, that the applicant was the legal possessor of a diploma from a medical college in good standing in any such State, which said diploma may be accepted in lieu of an examination as evidence of qualification. Fourth, that the scope of the examination was not less than prescribed in the State of Idaho.

In determining these questions of fact it was held that the board is not required to accept the statement of the applicant or his affidavit as conclusive proof that the board of any other State was in fact a similar board to the board of examiners of the State of Idaho, or that the applicant holds a certificate of registration of the kind required by the statute or as to any other of the matters required by the statute to be established. The statute does not limit the board in determining the qualification of an applicant to any particular kind of proof, and the board are possessed of power to determine these questions upon such evidence as will satisfy their minds as to whether or not the applicant is qualified as required by the law and the rules of the board. The court will not interfere with the discretionary power conferred upon the State board. The write was denied.—Barton v. Schmershall, Idaho Supreme Court, 122 Pac. 385.

MEDICAL RECORD.

A Weekly Journal of Medicine and Surgery.

THOMAS L. STEDMAN, A.M., M.D., EDITOR.

PUBLISHERS

WM. WOOD & CO., 51 FIFTH AVENUE.

See fourth page following reading matter for Rates of Subscription information for Contributors and Subscribers.

New York, November 2, 1912.

THE BIOLOGICAL ASPECTS OF PRIMOGENITURE.

FROM the dawn of history the firstborn have enjoyed a peculiar distinction, and in many ways have been granted certain privileges over other children in the same family. Popular tradition and biblical history furnish many illustrations of the prestige of the eldest member of the family. The laws of succession in monarchies have been based upon the recognition of the supposed superiority of the firstborn son. The instinctive bond so closely knitting the parents to their first child finds its social expression in the priority which the latter enjoys in social and ceremonial functions. The laws of primogeniture which establish the right of the firstborn to take by descent the real property of a deceased ancestor were based upon the feudal customs of medieval times, though ancient Hebrew and Hindu traditions also recognized this right. This mode of inheritance has been generally abandoned, but it still survives as an outworn relic in conservative England. The injustice which in many instances has deprived the younger children of a deserved patrimony has furnished a valid basis for the abolition of these laws. Nevertheless even in countries in which the latter are not operative one may readily recall instances in which the bulk of large estates is left to the eldest male heir, presumably for the purpose of keeping these estates intact. The precious heirlooms in many families are still carried from generation to generation through the eldest in the line.

Is there any biological basis for the laws of primogeniture apart from the instinctive regard for the firstborn? Does the oldest child possess any advantage over the other children in its bodily and mental vigor? Overwhelming evidence enables one to answer these questions in the negative; indeed recent investigations have shown that the firstborn labors under certain disadvantages so far as the susceptibility to disease is concerned. The study of this subject leads to the larger one of the relation between the numerical position of an individual in a family and his susceptibility to disease.

The mathematical methods of the biometricians, led by Karl Pearson, have shown that among tuberculous patients the firstborn provide a larger number of subjects than any of the other children. This observation was first made by W. C. Rivers in looking over the records of the Crossley Sanatorium, England. Exact statistical methods applied to these cases by Pearson, as well as to larger series reported by Brehmer and Riffel in Germany, confirmed this observation. It is interesting to note that Brehmer provided part of the material which was destined to overthrow his own teaching that the latest born are the most susceptible to tuberculosis.

But this is not the only disease in which a preference is shown for the firstborn. Insanity and criminality show a preponderating incidence among the eldest children. Pearson has pointed out that "in certain cases at least of constitutional defects which are inherited, the earlier members of the family are more likely to suffer than the later." This fact may account for the degenerative manifestations in those social groups, such as the peerage, which are recruited largely from eldest sons. The decadence of not a few of the reigning houses of Europe may be attributed to the same cause. Recent events may be recalled in which the escapades of crown princes have played a conspicuous part.

The special morbidity of the firstborn may be due to other causes than an inherited susceptibility. A tendency to coddle, to pamper, and to indulge the first child may account for a part of its vulnerability to disease. An apparent contradiction to this phenomenon is afforded by the fact that the older members of a family live on an average four to five years longer than the younger ones. Among the lower classes inexperience in the care of the young may account for the greater morbidity of the first children. Another factor that must be borne in mind is the importance of the influence of immaturity in the parents in the production of handicapped children. In the first children that are born this influence is most apt to be operative.

On the other hand, it must be recognized that the reverse order of morbidity may occur. *A priori* it may be reasoned that with the rapid increase in the size of families among the poorer classes, the resulting overcrowding of the home and limitation of the means of subsistence work disastrously to the later born. Frequent gestation and parturition sap the strength of the mother and result in the birth of weaker and less resistant offspring. In the large families of the tenement population the chances of zymotic infection among the younger children are increased by the fact that the older children bring contagion into the home from the school and playground. It may be concluded that, other things being equal, as the size of the family becomes an inordinate one, particularly if the surrounding conditions are not of the best, the chances of disease increase with each new arrival in the family. It has been noted that frequent childbearing, particularly among the poor, is apt to favor the development of rachitis in the later children.

The above facts indicate that the subject of the pathological aspects of the order of birth is not an academic one. In these days when the problems of eugenics, limitation of offspring, maternity rewards, and maternity insurance are being so freely discussed, it is a matter of practical importance that definite information should be available on the numerical phases of family growth. Careful study

by Powys of Australian vital statistics has shown that a family of five or six children is correlated with a greater longevity in the parents than one in which the number of children is greater or less than this figure. Recognizing the reciprocal disadvantages of inordinately large families, disadvantages that are both fiscal and physiological, one may at least extenuate a certain degree of what has been aptly termed "reluctant parentage."

A plea should be made for the definite recording in all anamneses of the individual's ordinal position among the children of a family. It is unfortunate that this phase of history-taking has been almost wholly neglected. The life insurance companies have at their disposal a mass of figures pertaining to the order of birth and its relation to morbidity that cannot fail when properly collated and studied to be of value in throwing light upon this subject.

POLIOMYELITIS.

Perhaps the most important happening at the recent Congress on Hygiene and Demography, held in Washington, was the discussion on and announcements with regard to poliomyelitis by some of the best kown authorities on the subject of the world. In Sweden for some time past the State Medical Institute of Sweden in the persons of Professors Alfred Pettersson, Arnold Josefson, Carl Kling, and Wilhelm Wernstedt has been prosecuting careful and thorough investigations into all phases of the malady. A report of these investigations was given at the Congress, and Prof. Pettersson at the symposium on poliomyelitis dealt with its modes of infection and its prevention, its symptomatology and pathology in monkeys, and with the epidemic of poliomyelitis in Sweden in 1911-1912. It should be borne in mind that the Swedish investigators have had peculiarly favorable opportunities for studying the disease. The outbreak of poliomyelitis, which began in Sweden last year and which continued during the present year with increased severity, has exceeded already in wideness of scope and severity any other known epidemic. In the year 1911, 3,840 cases were recognized and from January to the middle of August of the present year no fewer than 1,458 additional cases have been reported.

The results of these investigations strongly uphold the theory of direct transmission of poliomyelitis from one person to another. Not only is the patient himself in the acute stage a potent source of infection but he remains so during the convalescent stage. Furthermore, for the first time, the existence of carriers has been established experimentally, and likewise that carriers and abortive cases are more numerous by far than the typically paralytic cases. The discovery of the existence of carriers is most important and from the fact that carriers receive the virus upon their nasopharyngeal mucous membranes from the external surroundings probably by means of infective secretions, it may be fairly presumed that affected persons have received the virus in a similar manner. Moreover, it would seem as if Pettersson's discovery confirmed the theory of Flexner that the disease is communicable from person to person through the upper respiratory passages or that the microorganisms may be conveyed by dust and wind.

Dr. M. J. Rosenau's announcement that he had found the stable fly responsible for the spread of poliomyelitis appears to clash with the findings of Pettersson. However, while attaching most importance to direct transmission and to the nasopharynx as the seat of entrance of the virus, Swedish expert opinion admits the possibility of indirect transmission by insects and inanimate objects. True it is that inoculation experiments with saline infusion of flies, caught by poliomyelitis patients in the epidemic wards, were negative, as also were those with fleas taken from houses in which dwelt patients acutely ill with poliomyelitis or collected after parasitic existence on an infected monkey, yet further demonstrations may show that the results of Rosenau's experiments were correct. It is instructive to note that Josefson produced experimental poliomyelitis with saline extracts of a handkerchief and embroidery work which had been used by patients acutely ill, even after the material had been allowed to dry for some days before making the extract. These facts, too, bear out previous observations by Neustaedter and other investigators that the virus could be found in dust and remain active for 31 days in sterile milk, its activity probably accounting to some extent for the frequency of the disease in infants who, crawling on the floor, would have the most favorable facilities for getting the infected dust on the nasopharynx. In short, the Swedish investigators conclude that fleas and other blood-sucking insects may be of importance in house epidemics, but play no great part in the production of extensive epidemics which are mainly due to direct transmission. As for the frequency of the virus in the intestine, it is largely owing to the swallowing of the infected nasopharyngeal secretion. Flexner again supports this view by proving the capacity of the virus to withstand the antiseptic action of the gastric juice.

Undoubtedly a very strong case for direct transmission has been made out and it follows that isolation will be generally accepted by the medical profession as the rational method of controlling the spread of poliomyelitis and in time of stamping it out. Enough is now known to insist that the disease everywhere be made notifiable.

FAILURE OF THE VOICE.

Persons who use the voice overmuch, as singers, public speakers, ministers, and lawyers, frequently suffer from a failure in its production. Clergyman's sore throat has become almost a synonym for one form of voice failure, and all great singers are compelled to use the most extraordinary precautions in order to retain the use of that gift or accident of nature by which they are enabled to reap a golden harvest.

Cyril Horsford in the *Practitioner* for October, 1912, suggests reasons why the voice fails. The failure of the voice must be dependent on either (1) faults in the method of use; (2) faults in the phys-

ical condition of the vocal instrument. The principal vocal fault encountered is throatiness, and Horsford refers to two important influences which bring about the condition—rigidity and force. Rigidity is one of the commonest of all bad influences and is the opposite to elasticity, which is essential for perfect vibration and muscular efficiency. It is not until all rigidities are removed that the vibrations can reach the ends of the resonating cavities such as the base of the skull above, the bridge of the nose, the lips, and the teeth in front. If the vibrations do not reach these parts, tone is obtained, partly, at any rate, by force, which means putting more pressure on the vocal cords than they have been trained to withstand. Although force is usually associated with vocal faults, it is not invariably so. As Horsford points out, it may be merely strain on the vocal cords when they are unfit temporarily, weak muscularly, or young and unresistant. In this connection a warning is given with regard to using the voice too much when young, for ambitious young singers should bear in mind that before displaying their vocal instrument, it is necessary to build it, for in the untrained voice the structural elements are, when used, jumbled together in an inartistic manner, and will eventually injure each other.

As for faults in the physical condition of the voice, the author insists upon the fact that the vocal instrument does not consist merely of the larynx or box, in which are situated the vocal cords, but of the whole body from the crown of the head to the soles of the feet. The cultivation of the brain or organ of the mind is an essential part of voice training, for artistic if not actual vocal failure is frequently attributed to deficiency in this department alone. Physical fitness of the body as a whole is essential for the preservation and perfect development of the voice, and anything which improves the bodily health will, as a rule, benefit materially the voice.

Finally, Horsford concludes that with all due respect to voice training as an art, and to the great skill frequently displayed by many gifted masters, the safe and effective training of the singer will be more certainly obtained by the cooperation of the singing master and laryngologist. Undoubtedly, many voices are injured and some spoiled by one not knowing how to use them. The remark applies to the public speaker as well as to the singer. It would be well, then, if budding Websters and embryo Pattis or Carusos took the advice of the writer in the *Practitioner* and instead of abusing their vocal organs, exercised discretion in their use and allowed themselves to be guided to the proper mode of singing and speaking by those possessing the requisite artistic and medical knowledge.

MEDICAL ASPECTS OF THE WAR IN THE EAST.

The problem of the care of the injured is one that surpasses in difficulty any other that arises in modern warfare. When the movement of armies and their engagement in battle have acquired the momentum so characteristic of the present hostilities in the Balkans, these difficulties are greatly magnified. The narrow theater of warfare so near to the capitals of the respective combatants may facilitate the less urgent treatment of the injured men, but this depends upon the presence of adequate hospital accommodations in these cities, and upon a good system of transportation. Although the allies have carefully planned their lightning-like campaign, they have failed to provide sufficient medical officers and suitable ambulance equipment to care for the large number of wounded that have fallen in the first days of the war. At Belgrade and at Athens there are large and up-to-date military and civil hospitals that are sufficiently equipped to deal with the major surgery of war. Bulgaria and Montenegro are not so well provided for. The Red Cross of the allies and the Red Crescent of the Turks, whose insignia is the red half-moon, are experiencing more than in any other recent war the intense strain upon their resources. The British Red Cross has already tendered its services and the cessation of the war in Tripoli has released a number of valuable ambulance units. According to the *Hospital* of London, "the erection of large emergency hospitals on the pavilion plan appears to be the best way out of the difficulty so far as accommodation is concerned, but the provision of suitable medical men and nurses will not be so easy."

The civilized world again stands aghast at the horrors of war. Hardly have the echoes subsided from the congress at which representatives from almost every nation met to discuss the conservation of human life than there begins anew the devastation of shell and shrapnel, the awful slaughter of saber and bayonet. Universal peace is still the idle dream of philanthropists and the professed goal of smiling statesmen. The war in the Balkans, which has so long hovered like a threatening cloud over the peace of Europe, has now descended like a thunderbolt. If it were a final struggle between Christendom and Islam, between civilization and barbarism, one might find some justification for this strife. But the secret designs of diplomacy hide behind the crescent and the star. In the meantime, weary eyes will keep a vigil over the groaning victims of the battlefield and skilled hands will bind the wounds and relieve the agony of those swept into the pitiless combat.

The "Penny Signs" in Pleurisy and Ascites.

Several years ago Professor Pitres of Bordeaux drew attention to a new sign in pleurisy with effusion, based upon the transmission of the sound obtained by tapping one coin on another which he termed the "signe du sou." In the *Medical Press and Circular,* October 9, 1912, it is stated that Pitres' sign may be of the greatest assistance in the diagnosis of pleural effusion, often a question of some delicacy. Janney, in a recent thesis, says the sign is also of value in ascites. In order to elicit Pitres' sign in a case of pleurisy, a coin is placed flat on the chest, in front, just below the nipple, and an assistant taps it with another coin, striking vertically. While this is being done the observer listens over the back and side of the thorax. If the interior of the thoracic cavity is occupied by a homogeneous medium, either solid or liquid, which

conducts sound more perfectly than normal pulmonary tissue, the percussion sound is audible as a clear ringing silvery vibration. Consequently the "penny sign" is not pathognomonic of pleural effusion, but as massive indurations of the pulmonary parenchyma are much more uncommon than pleural effusion, this sign, taken in conjunction with the more or less complete series of other signs and symptoms, will in most cases indicate the presence of a liquid effusion into the pleural cavity. As the laws of the transmission of sound are the same in the abdomen as in the thorax, Lesieur and Rebatta have extended its use to the diagnosis of the existence of ascitic fluid in the peritoneum. In a normal abdomen we never get a silvery clear sound. Although then the "penny sign" is not pathognomonic of ascites any more than it is of pleural effusion, yet it shows the presence in the abdomen of a homogeneous medium either liquid or solid in an uninterrupted layer. Therefore, when the sign is positive we still have to differentiate ascites from a fibroid tumor or pregnancy, and as a rule this can be done by noting that in the first case, in order to obtain the silvery tone we have to percuss in the lower parts of the abdomen, whereas in the case of a fibroid tumor or pregnancy the sign is perceived when percussing over the epigastrium.

The Toxicity of Potassic Chlorate.

When potassic chlorate gargles and troches first came into general use by the public fears were freely expressed that enough of the salts could be absorbed to cause poisoning. Patients were cautioned against swallowing the solutions and pellets. In bloody urine without apparent cause the informed physician used to direct inquiries to the possibility of chlorate of potassium ingestion in toxic amounts. But this overcaution, for such it seems to have been, died away to a large extent. The remedy had once been used internally in desperate maladies, both acute and chronic; and the frequent cases of poisoning must be attributed in part to the diminished powers of resistance of the gastroenteric mucosa and kidneys and of the erythrocytes. A study of the literature fails to show any considerable number of cases in which moderate doses have caused toxic symptoms in relatively sound subjects. Quite recently, however, the opinion has been expressed by one of the world's greatest toxicologists among others that the too free use of dentifrices which contain a large proportion of potassium chlorate is a menace to the community. So widespread has this belief become that Bachem, in a paper contributed to the *Muenchener medizinische Wochenschrift* for October 1, attempts to decide the question once and for all. He finds that in former years the drug was given in presumably therapeutic doses which equaled forty grams in 24 hours, and that even with such prodigious quantities toxic phenomena were not anticipated. A legend grew up, however, that the young child was not to be given this remedy, and it occurred to the writer to test it upon young puppies for a quick determination of its general toxic properties. The animals received 30 grams daily for six weeks and the excreta were controlled. The drug was readily eliminated, and there was no retention nor cumulation. The main prop of the poison dentifrice theory, that poisoning could result from continuous daily use through slow cumulation, was thus shattered. Moreover the animals showed normal growth rate. Eventually the animals were killed and no trace of renal lesions was found. The gastric mucosa showed no evidence of irritation (the drug had been administered well diluted in milk). Spectroscopic tests showed not the slightest evidence of methemoglobinemia. According to toxicologists dogs are more sensitive to the action of potassic chlorate than are other laboratory animals; hence they were chosen for this experiment instead of rabbits and guinea pigs.

The Results of the Pasteur Treatment of Rabies.

A year ago we called attention to the excellent record attained by the Pasteur Institute of Paris with their antirabic inoculations. Dr. Viala's report for 1911 (Annales de l'Institut Pasteur, vol. xxvi, p. 653) shows that this high standard has been maintained. During the year there have been treated 342 persons with no deaths. Of this number 76 were bitten by animals in whom the disease was proven by inoculation, 114 by animals declared rabid on veterinary examination, and the remaining 152 by animals suspected of rabies. Since its foundation in 1886 the institute has administered the treatment to 33,388 persons, of whom 128 (0.38 per cent.) have died; there have been no deaths during the past two years. These results are in the highest degree impressive and indicate the excellent quality of the work that is being done in the lines of preventive medicine. Perusal of the full report is recommended to those who can see no good in animal experimentation.

News of the Week.

Civil Service Examination.—The United States Civil Service Commission announces a competitive examination for men only, to be held on November 20, 1912, for the purpose of filling a vacancy in the position of mine surgeon in the Bureau of Mines, at a salary ranging from $2,000 to $3,000 per annum. The person appointed to this position will be expected to give instruction to the first-aid miners of the Bureau, and to supervise their work, and to observe and report on sanitary conditons in and about the mines, and be prepared and able to enter the mines with rescue forces immediately after accidents, etc. Applicants must be citizens of the United States, under forty years of age, and graduates of a reputable medical college, and must have had not less than three years' experience in medical and surgical practice about coal mines. Special credit will be given for experience in rendering first aid to the injured, etc. Persons meeting the requirements will be allowed to enter the examination on application to the United States Civil Service Commission, Washington, D. C.

Navy Medical Reserve Corps.—The organization of the medical reserve corps which was authorized in the Naval Appropriation Act of August 22, 1912, is now proceeding under the direction of Surgeon-General Stokes of the Navy, who is interesting physicians throughout the country in the naval service. Prior to the organization of this corps the Navy Department could not take advantage of the cooperation of surgeons outside the service, but will now have the benefit of their advice in many practical problems. The members of the corps will not be called upon for active duty except in time of war.

Child Hygiene.—The work of child hygiene in New York City has been further helped by the appointment by Mayor Gaynor of Dr. Ira S. Wile as a member of the Board of Education, the Mayor stating that his object in making the appointment is to have Dr. Wile enter systematically into the work of examining the health of all the children in the public schools and to take scientific means of prevention and cure. The Mayor also suggested the creation of a standing committee of the Board for carrying out these designs. At a subsequent meeting the Board showed its approval of the Mayor's plans for the improvement of physical conditions among the school children and provided for the appointment of two additional physicians for the examination of mentally deficient children, of an assistant inspector of ungraded classes, and for a social worker to visit the parents of children of this sort.

Fordham Clinic.—A certificate of incorporation was granted recently to the Fordham University Consultation Clinic, New York, which has for its object the erection, establishment, maintenance, and conduct of a dispensary to provide facilities for the instruction of physicians and students of medicine and pharmacy at the Fordham University School of Medicine. The directors are Dr. James J. Walsh, Dr. Thomas J. McCluskey, and Dr. Joseph J. Keating.

Gift to Johns Hopkins Hospital.—The Board of Trustees of the Johns Hopkins Hospital, Baltimore, recently received from Mr. J. B. Brady of New York, a gift of $200,000 to be used in founding the James Buchanan Brady Urological Institute as a separate unit of the hospital. In addition, Mr. Brady will, during his life, pay to the trustees the sum of $15,000 yearly for the maintenance of the institute, and will make ample provision for its continued support in his will. This will be the first institute of its sort in this country, although London and Paris already have such hospitals and Berlin is about to construct one. The Johns Hopkins Hospital plans to erect a six-story building with special laboratories for research, and accommodations for both public and private patients. The gift is made because of Mr. Brady's interest in the hospital following his recent stay there as a patient.

Dr. Wiley's Successor.—It is reported that President Taft has decided upon the appointment of Dr. Carl L. Alsberg as successor to Dr. Wiley, though no formal announcement has been made. Dr. Alsberg at present occupies the position of chemical biologist in the Bureau of Plant Industry of the Department of Agriculture at Washington. He is a graduate of Columbia College in 1896 and of the College of Physicians and Surgeons, New York, in 1900, and was formerly instructor in biological chemistry in the Harvard Medical School. He has also taken courses in chemistry and biological chemistry in some of the German universities. He is only thirty-five years old.

New Research Institute.—Reports have come from France of the establishment in Paris by a wealthy foreigner of a medical research institute similar in some respects to the Rockefeller Institute, New York. It is said that for the purposes of the institute a large hotel building has been purchased and that the installation of the necessary equipment can be accomplished in three months. No announcement has been made as to the scientific staff of the institute.

Smallpox in a School.—A small epidemic of smallpox has broken out among the students of the South Lancaster Academy, Clinton, Mass., and forty cases and one death have occurred. The Massachusetts State Board of Health is investigating the situation.

Village Typhoid Swept.—The epidemic of typhoid fever which started in Troy, Pa., recently, has continued to develop, and on October 26 172 cases were reported in a village of 1,500 inhabitants. The infection has also spread to several nearby towns.

Pittsburgh Smallpox Free.—The Health Department of Pittsburgh, Pa., reports that the city is now free from smallpox. The appearance of several cases of the disease some time ago caused some anxiety.

Disease Among Eskimos.—For the first time on record infantile paralysis has appeared among the Eskimos of Alaska. Reports have been made to Surgeon-General Blue of the Public Health Service in charge of the health of the Eskimos, of five cases of the disease and one death at St. Michael's and of ten cases and two deaths at Unkaleet, forty-five miles distant. Three cases have also been reported in Sitka.

Railroad Men's Hospital.—The Missouri-Pacific Railroad has made a transfer of its hospital funds and property to its employees, who have for many years contributed small sums out of their salaries toward the support of the hospital service. The railroad company turned over to a Board of Hospital Managers, elected by the employees, the sum of $193,767, and in addition the large hospital building in St. Louis with its equipment and furnishings, and the surrounding grounds, the total value being about $250,000. The railroad started its hospital service about thirty years ago and has handled the property and money received from its employees until recently, when it was determined that the control of the funds should be turned over to the men themselves.

Protest Against a Tuberculosis Hospital.—The City of New York has protested to the State Health Commissioner, Dr. Eugene H. Porter, against the proposed erection by Westchester County of a tuberculosis hospital at Croton Lake in the northern part of the county. The Water Supply Department of New York contends that the hospital at Croton Lake will be a menace to the water supply of Manhattan, because two streams which flow through the Griffen farm, which is the proposed site, empty into Croton Lake, not far from the intake of the new Catskill Aqueduct.

Centenarians Indeed.—Joe Manitou, an Indian chief of the Pottawattomie tribe, died on October 24, at his home in Traverse City, Mich., at the reputed age of 120 years. Until recently his memory, it is said, was clear and he could recall the details of the early Indian wars in which he had participated.

Mr. Macagor Wise of Beaver Brook, N. Y., celebrated his 109th year recently by paying a visit to New York City, where he noted many changes since his first recollections of it.

Clinical Lectures.—Dr. Frederic Bierhoff announces a series of clinical lectures and demonstrations upon genitourinary and venereal diseases, with particular reference to the more modern methods of diagnosis and treatment, at the West Side German Dispensary, 328 West 42d street, New York, on Monday evenings at 8:30, beginning on November 4. The course will cover a period of about

three months, and will be free to the medical profession and to advanced students in medicine.

Harvey Lecture.—The third of the present series of Harvey Lectures will be delivered by Prof. Joseph Erlanger of the Washington University Medical Department, St. Louis, at the New York Academy of Medicine on the evening of November 9, at 8:30. Prof. Erlanger's subject will be: "The Localization of Impulse Initiation and Conduction in the Heart." As heretofore the lectures are open to the public.

Boys Cleaner Than Girls?—The annual report on vacation playgrounds in New York City shows that during the year ending September, 1912, the free baths in the public schools throughout the city were well patronized. The attendance reached 603,328 boys and 213,325 girls, from which figures and from the fact that the girl bathers, as a rule, confined their ablutions to the afternoon hours, while the boys bathed at all times, the newspapers conclude that the boys of the city go in more for personal cleanliness than do the girls, which is somewhat doubtful logic.

Gifts to Charities.—The Eastern Maine General Hospital of Bangor, Me., receives a bequest of $4,000 by the will of the late Mrs. G. B. Perry of Middletown, R. I.

By the will of the late Mrs. Emily S. Hutchinson of Greenwich, Conn., the Helping Hand Association of Peekskill, N. Y., receives a bequest of $10,000 for the Peekskill Hospital.

The Summit Free Hospital and the Fresh Air and Convalescents' Home of Summit N. J., receive bequests of $1,000 and $500, respectively, by the will of the late Mr. William Z. Larned.

By the will of the late Sarah A. Anderson of Philadelphia, the sum of $500 is bequeathed to the Episcopal Hospital of that city.

By the will of the late Harriet C. L. Hopkins of Philadelphia, who died recently at Otsego, N. Y., an estate of $7,000 is to be equally divided between the Philadelphia Home for Incurables and the Protestant Episcopal Home for Consumptives.

Dr. H. T. Summersgill, superintendent of the New York Post-Graduate Medical School, has been offered by Mayor Hunt of Cincinnati the position of superintendent of the Cincinnati City Hospital.

Dr. William Seaman Bainbridge of this city has been appointed Consulting Gynecologist to the Ossining Hospital, Ossining, N. Y.

Mississippi Valley Medical Association.—At the annual meeting of this association, held in Chicago, October 22-24, the following officers were elected: *President,* A. E. Sterne, Indianapolis; *First Vice-President,* D'Orsay Hecht, Chicago; *Second Vice-President,* Hugh Cabot, Boston; *Secretary,* H. E. Tuley, Louisville; *Treasurer,* S. C. Stanton, Chicago. The next meeting will be held in New Orleans the last week in October, 1913.

East Tennessee Medical Association.—At the annual meeting held in Johnson City on October 10 and 11, the following officers were elected for the ensuing year: *President,* Dr. Henry M. Cass, Morristown; *Vice-Presidents,* Dr. James P. Randall, Johnson City, and Dr. James G. Eblen, Lenoir City; *Secretary-Treasurer,* Dr. H. P. Larimore, Chattanooga.

Railway Surgeons.—At the annual session of the Surgeons of the Atlantic Coast Line Railway, held in Richmond, Va., the following officers were elected: *President,* Dr. John S. McEwan, Ocala, Fla.; *Vice-Presidents* Dr. S. T. Nicholson, Washington, N. C.; Dr. C. E. Moore, Wilson, N. C., and Dr. H. B. Mahoon, Emporia, Va.; *Secretary-Treasurer,* Dr. C. P. Aimar, Charleston, S. C.

Southwestern Medical Association.—At a meeting of this association, which is composed of physicians of Arkansas, Texas, Oklahoma, Missouri, and Kansas, held in Hot Springs, Ark., on October 9 and 10, the following officers were elected: *President,* W. T. Wooten, Hot Springs; *First Vice-President,* W. B. Dorsett, St. Louis; *Second Vice-President,* E. H. Carry, Dallas; *Third Vice-President,* J. H. Barnes, Enid, Okla.; *Fourth Vice-President,* C. C. Nesselrode, Kansas City, Kans.; *Secretary-Treasurer,* F. C. Clark, El Reno, Okla. The convention then adjourned to meet next year in Kansas City, Kansas.

Nacogdoches County (Tex.) Medical Society.—At a meeting in Beaumont on October 9, the physicians of Nacogdoches County organized with the election of the following officers: *President,* Dr. J. H. Barham, *Vice-President,* Dr. R. S. Johnston; *Secretary,* Dr. T. J. Blackwell.

San Joaquin Valley (Cal.) Medical Association.—At the thirty-third annual meeting, held in Merced on October 8, the following officers were elected: *President,* Dr. Henry Hildreth, Delano; *First Vice-President,* Dr. O. W. Stienwand, Selma; *Second Vice-President,* Dr. A. R. Nichelson, Bakersfield; *Secretary,* Dr. R. C. Ross, Fresno; *Assistant Secretary,* Dr. D. H. Trowbridge, Fresno; *Treasurer,* Dr. T. M. Hayden, Fresno.

Obituary Notes.—Dr. William Frederick Dudley of Brooklyn, N. Y., a graduate of the Long Island College Hospital, Brooklyn, in 1886, a member of the American Medical Association, the New York State and Kings County Medical Societies, the American Laryngological, Rhinological, and Otological Society, the New York Academy of Medicine, and the Brooklyn Pathological Society, adjunct clinical professor of diseases of the throat and nose in the Long Island College Hospital, consulting laryngologist to the Norwegian, St. Christopher's, and the Swedish Hospitals, and laryngologist to the Brooklyn and St. John's Hospitals, died at his home on October 22, aged 50 years.

Dr. Arthur Ricketson of New Bedford, Mass., a graduate of Harvard Medical School in 1860, a member of the Massachusetts State and Bristol County Medical Societies, died at his home of paralysis on October 14, aged 77 years. During the Civil War Dr. Ricketson served as assistant surgeon on board the U.S.S. *Nightingale,* on which, while off Pensacola, there occurred an epidemic of yellow fever, resulting in the death of every officer and man, with the exception of Dr. Ricketson, on board.

Dr. Benjamin Ropes Symonds of Salem, Mass., a graduate of Harvard Medical School in 1883, a member of the Massachusetts State and Essex County Medical Societies, and formerly city physician of Salem and a member of the Board of Health, died at his home after a long illness on October 15, aged 55 years.

Dr. Frank R. Wilson of New London, Iowa, a graduate of the University of Michigan, Department of Medicine and Surgery, Ann Arbor, in 1873, president of the Henry County Medical Society, and a member of the American Medical Association and the Iowa State Medical Society, died at his home of Bright's disease on October 6, aged 60 years.

Dr. William Harmon Buchtel of Denver, Colo., a graduate of the Northwestern University

Medical School, Chicago, in 1866, and a member of the American Medical Association and the Colorado State and Denver County Medical Societies, died suddenly in his office, of heart disease, on October 14, aged 67 years.

Dr. Henry Chavanne of Salem, New Jersey, a graduate of the Jefferson Medical College, Philadelphia, in 1887, and a member of the New Jersey State and Salem County Medical Societies, died at his home on October 16, aged 65 years.

Dr. Hubbard Kavanaugh Adamson of Maysville, Kentucky, a graduate of the New York University Medical College in 1876, died at the Kentucky State Hospital, Lexington, after a long illness, on October 9, aged 59 years.

Dr. Joseph J. Jaches of Brooklyn, N. Y., a graduate of the University of Moscow in 1886, and visiting physician to the Jewish Maternity Hospital, died at his home on October 20, aged 52 years.

Dr. Sydney Howard Carney of Tompkinsville, N. Y., a graduate of the Harvard Medical School, Boston, in 1861, died at his home on October 22, aged 75 years.

Dr. Sidney Davis of Milton, Penn., a graduate of the Medical Department of the University of Pennsylvania in 1877, and a member of the Pennsylvania State and Northumberland County Medical Societies, died at his home on October 17, aged 60 years.

Dr. Francis T. Riley of Waterloo, Iowa, a graduate of the Drake University College of Medicine, Des Moines, in 1890, died at his home after a long illness on October 14, aged 47 years.

Dr. Charles S. Spitler of Mooreland, Indiana, a graduate of the Medical College of Ohio, Cincinnati, in 1892, and a member of the Indiana State and Henry County Medical Societies, died at his home suddenly on October 16, aged 45 years.

Dr. C. E. T. Casto of Parkersburg, W. Va., a graduate of Miami Medical College, Cincinnati, in 1875, and a member of the West Virginia State and Wood County Medical Societies, and the Ohio Valley Medical Association, died at his home on October 14, aged 58 years.

Obituary.

GEORGE MONTGOMERY TUTTLE, M.D.,

NEW YORK.

Dr. George M. Tuttle, who died of angina pectoris on Tuesday of this week, was a gynecologist of note and prominent among medical educators. He was born in Rochester, N. Y., in 1856, and was graduated in arts from Yale University in 1877 and in medicine from Columbia University in 1880. He served a term as interne in the New York Hospital and was then for two years physician in chief of the New York State Emigrant Hospital. He was attending physician at Bellevue Hospital from 1883 to 1889; attending gynecologist at Roosevelt Hospital from 1888 to the time of his death, and consulting physician to the New York Infirmary for Women and Children. From 1885 to 1903 he was professor of gynecology at Columbia University. He was a member of the New York Academy of Medicine, of the medical societies of the County and the State of New York, and of the Society of Alumni of the New York Hospital. Dr. Tuttle was one of the collaborators in the American Text-book of Gynecology, and was an occasional contributor of articles on gynecological subjects to the medical press.

Correspondence.

OUR LONDON LETTER.

(From Our Regular Correspondent.)

THE SOCIETIES—UNIVERSITIES IN RELATION TO MEDICAL EDUCATON—SANATORIUM QUESTIONS—INSURANCE; OPPOSITION OF TRADE UNIONS AND OTHERS—MEDICAL PAYMENT—OBITUARY.

London, October 11, 1912.

After the schools the societies open, and a number of them are now at work. The Royal Society of Medicine began on Tuesday with papers on injury to the semilunar cartilages, one referring to an experience of 449 cases. Yesterday this society had an exhibition of specimens and cases, and others are to be shown this evening. On Wednesday the Hunterian Society began, after a Council meeting, with a communication on "Sleepiness" by Dr. F. Taylor. The United Services Medical Society also began on Wednesday afternoon with a presidential address by Fleet Surgeon Bassett-Smith, C.B., after which Captain Sylvester-Bradley, R. A. M. C., considered the "Disposal of the Sick of a Territorial Force." The Polyclinic and the other post-graduate colleges have each had contributions, demonstrations, or lectures on every day throughout the week. You will see there is no dearth of practical discussion among us; nor is there likely to be.

The Victoria University (Manchester) has an external examiner in medicine on its staff. The present holder of this position is Dr. H. D. Rolleston, the senior physician to St. George's Hospital, London, and he delivered the introductory address at Manchester this year. He is a Cambridge man and took for his subject the relation of universities to medical education, which he dealt with in a broad-minded manner and in various aspects. A Royal Commission and a congress of fifty-three universities of the British Empire have lately devoted some attention to the subject, and many others engaged in education, general and technical, have discussed it. None the less Dr. Rolleston's opinions deserve attention, though I can only refer to some. He is not afraid to admit at the outset that the humanities are not essential to a medical man, although he also admits that in the past most of the eminent members of the profession passed through the classical mill. But he says it hardly follows that their early success was the cause of their later triumphs. On the other hand, some of our immortals owed little or nothing to its influence. Valuable as classical training is, the bulk of medical men pay dearly for the luxury. Most have forgotten their Greek in middle life, except perhaps enough to understand the never ending flow of new, often unnecessary, words ending in *itis* sometimes appended to a Latin noun or modern name. To the ordinary practitioner, then, the direct advantage of classical training is out of proportion to the time devoted to it. Of course, the talk of "the grand old fortifying classical education" is familiar enough to Dr. Rolleston, and he recognizes its value in its place, but he has to acknowledge its comparatively frequent failure to engender the power of writing clear and graceful English. So he says there can be no question that in medical science French and German are incomparably more useful. He suggests a compromise. He would include Latin and Greek in school subjects until about the age of 15½ years, the students to be tested by examination at that stage, the results counting at the

matriculation. Then 2½ years to be given to French, German, English composition, physics, and chemistry, with the necessary mathematics. By this time a pupil (17½ to 18 years old) should pass an examination in the foregoing subjects and begin biology.

I have no doubt the course thus suggested would produce many men of distinction after their further university and hospital careers. But how about the ordinary general practitioner who does not contemplate a university training? Dr. Rolleston did not overlook him altogether, although he was concerned mostly with university men, for whom his proposals are sound enough; but for my part I think these men are well able to indulge their own predilections. For the general practitioner he saw the advantage of a very definite curriculum under the control of the General Medical Council as representing the qualifying bodies, and perhaps the "one portal system" so long advocated. There should not be much difficulty in enforcing this, and the universities having representatives on the examining board, might fairly be asked to give up the right of licensing to practice, and so make their degrees in medicine honorary distinctions only, as in the other faculties.

The Sanatorium Benefit under the Insurance Act has been occupying the attention of many authorities. The Metropolitan Asylums Board has at its disposal 1,000 beds for the proper treatment of tuberculous cases. These beds are in a number of institutions, admirably officered, under the administration of experts who have for years devoted themselves to the best provision for infectious diseases. Yet it seems doubtful whether these beds can be utilized, for the act states that the authorities for carrying out the benefits must be "other than poor law authorities." This is another example of the evils that have already resulted from the haste with which the act was rushed through Parliament. The Asylums Board in its origin was of a poor law character, but it has developed into a joint board for providing hospital accommodation for the twenty-nine local authorities of London for infectious cases. It is obvious that an amendment must be passed to alter this, or the citizens of London might be asked to incur the expense of new machinery and a second 1,000 beds while the existing 1,000 stand available.

The Dublin committees for the city and county interpreted the act as providing for the treatment of consumptives whether in their homes or in sanatoria. They have, therefore, been distributing food as well as medicine. The Irish Local Government Board now object and say the act only provides for the supply of drugs. On Tuesday a deputation headed by Lady Aberdeen tried to persuade the board to interpret the act as the committees have been doing, but without success. The deputation were told the act did not authorize the giving of food to patients in their own homes, nor the giving of money to procure it. It was also doubtful if the fund available would suffice for so doing. Pending further inquiry, the committees have determined to administer the act as they have so far done. An Irish impasse, is it not?

Opposition to the Act is extending in unexpected directions, giving anxiety to Mr. Lloyd George, who is awakening to the fact that he in many cases miscalculated its effect on voters. Instead of gaining it seems certain the government will lose many votes on which they reckoned. The farmers and their laborers in some districts have formed anti-insurance leagues. Waiters are declaring they ought not to pay, as they get no wages, but only tips. Domestic servants are equally dissatisfied and being supported by ladies. Casual laborers are also protesting, while to the chagrin of the Chancellor trade unions and friendly societies are threatening to withdraw their votes.

The Belfast trade unions have represented to the Parliamentary Committee of the Congress sitting in London that Irish workers are excluded from medical benefits under the Act and asking help to reverse this. The committee not understanding why Ireland is not included determined to send a deputation to Mr. Redmond on the matter.

The Miners' Federation at first proposed to leave the care of the sick to the Friendly Societies, but has now changed its attitude and advises its districts to work the Act in their own interests; some have acted on this advice, and it is expected that eventually the Federation—some 600,000 strong—will make themselves into an "approved society." In the Chesterfield district there are very large collieries and some of the pledges to resign were made on conditions regarding them. Negotiations are going on. The Commissioners have been called upon to decide whether various ships' officers come under the Act. They have decided some cases and reserved others for further consideration—another illustration of the haste with which the Act was forced through Parliament. Traveling expenses are to be allowed to county insurance committees on a declaration that the amount has actually been paid by the member applying for it, who must apply personally—conditions which are exciting no little resentment.

As to the dispute with the profession rumors of a coming compromise have been floating about all the week. Many newspapers have given currency to a statement on the authority of the Press Association, that the Cabinet on Monday had practically agreed to increase the payment of the medical men on the panel to 7s. 6d. But this could only be a mere *ballon d'essai;* for the Chancellor, as I told you, had distinctly stated that he would not bring the matter before his colleagues until next week and then he would make known their decision.

Guy's Hospital new laboratories are well worth inspection by any one interested in the progress of research and the means of study. The lecture theater, which accommodates sixty students, is in the basement, where also are hot and cold rooms, a dark room for micrographic work, the store room, and the high-power electric centrifuge. On the ground floor lavatories and store rooms are located; above these the practical pathological and bacteriological laboratory. The floor above that is for general microscopical work, in which half a dozen research students are provided with places and the Gall student of pathology has a private room. Here the examinations of the clinical material for the wards are carried on. The third floor has a room for the lecturer on pathology and a large research laboratory. The fourth floor contains general laboratory, operating theater, and accommodation for animals being kept under close observation. Above this, on the roof of the building, is provision for other animals.

Sir Almroth Wright gave an address yesterday at the opening of the *x*-ray and bacteriological department of St. John's Hospital, Lewisham, erected as a memorial to King Edward.

The Lord Mayor (Sir T. Crosby, M.D.) yester-

day issued an appeal on behalf of the Hospital Saturday Fund, which he spoke of as well managed and doing excellent work.

Deputy Surgeon General T. J. Crowley died on October 5. He entered the naval service in 1883 and was rapidly promoted for exceptional ability, in every step receiving the greatest respect of his confrères.

Dr. E. M. Light, who held a conspicuous position in the insurance world, died on October 1 at the age of 52. He graduated at Cambridge in arts and medicine in 1887-8.

OUR BERLIN LETTER.

(From Our Regular Correspondent)

CHEMOTHERAPY OF SEPTIC CONDITIONS—ARGATOXYL—SANATORIA IN GERMANY—TUBERCULOSIS AMONG THE MIDDLE CLASSES—ISOLATION IN THE HOME—BACILLUS CARRIERS.

BERLIN, August 15, 1912.

THE chemotherapy of septic conditions was the subject of a paper read before the Society of Internal Medicine and Pediatrics by P. Rosenstein. The preparation used by the author is an acid compound of atoxyl and silver. This salt is dissolved only with great difficulty. Its action is a selective one. For this reason it is supposed to have very slight toxicity. Particularly good results were obtained in septic conditions in which other methods of treatment had failed. The above remedy was employed in cases of carbuncle, abscess, peritonitis, septic scarlet fever, puerperal septicemia, otitis media, and muscular rheumatism. There are three different modes of action: The fever may suddenly subside; it may fall gradually; or an abscess may be formed. The remedy may be injected intravenously or intramuscularly. In the discussion Zülzer reported that he had employed the remedy in twelve cases of sepsis, in four of which the result could not be attributed to the argatoxyl. In four other cases, however, the good and rapid outcome could undoubtedly be ascribed to the use of this drug.

A large number of interesting papers were presented before the sixteenth general meeting of the Central Committee for the Campaign Against Tuberculosis. According to the business report there are at present in Germany 138 sanatoria with provision for 14,079 beds. Regarding three months as the average period of treatment, as many as 56,000 patients can be provided for annually. In addition there are 21 children's sanatoria with 1,352 beds and also 100 institutions with 8,644 beds for scrofulous cases, and those suspected of having tuberculosis. There are as yet insufficient accommodations for the care of advanced cases.

The campaign against tuberculosis among the middle classes was the subject of a discourse by Dietz of Darmstadt. The Red Cross Society has established a special division, a sanatorium for persons of moderate means, in the maintenance of which the Central Committee has cooperated. The speaker included among the middle classes all those persons who are not subject to compulsory insurance and who have not the means to enter private sanatoria. There are, therefore, included merchants, officials, farmers, university men, and artisans with a moderate income. For artisans there are systems of private insurance, but these are not sufficiently utilized, so that compulsory insurance has been proposed for these individuals. In the German public sanatoria, according to the estimation of the speaker, there have been treated during 1911 as many as 6,600 of the middle class. It is now possible to decide the question whether it is desirable to treat in the same institution individuals belonging to the laboring and to the middle classes. The answer is, no. Diverging political and personal inclinations make this association irksome to both classes. There should be separate divisions in the same institution, or still better, separate institutions. At the present time more than ever the middle classes are availing themselves of the advantages of voluntary insurance and funds are being set aside for the establishing of beds for those of moderate means.

The isolation of the tuberculous individual in the home was the subject of an important paper by Ranke of Munich. The ideal solution of this problem would be the sanatorium treatment of all cases. Since this is impossible the next best step is efficient isolation in the home. But this is frequently not feasible, for there are 40,000 families in Berlin that each live in one room. If the tuberculous patient occupies his own room, but if he still mingles with the rest of the family, periodical disinfection of the dwelling should be carried out. Close scrutiny should be kept of all cases belonging to vocations, such as those of school teachers and those that are concerned in the handling of food. Of greatest importance are the training of children in habits of cleanliness, the establishment of compulsory notification of tuberculosis, and finally the unremitting campaign of education.

Bacteria carriers was the subject of a closely related theme discussed July 4 before the Medical Society by Sobernheim. That infectious agents are carried about by the healthy as well as by the sick is a fact that has been known for a long time. It might be concluded that this is of no great significance since the bacteria are so widespread. This attitude is a false one and leads to serious errors of omission. In Berlin there have been found among healthy children 7.6 per cent. of diphtheria bacillus carriers. Inoculation experiments on animals have shown that the organisms in the bacteria carrier are just as virulent as those present in the sick individual. Under suitable treatment the organisms in the former should disappear in from one to four weeks. The bacteriological rather than the clinical cure should be the aim both in private and in institutional practice.

OUR LETTER FROM THE PHILIPPINES.

(From Our Regular Correspondent.)

THE MODE OF DISSEMINATION OF AMEBIC DYSENTERY—THE RAT-CATCHING CAMPAIGN—THE PLAGUE.

MANILA, P. I., September 14, 1912.

THE regular monthly meeting of the Manila Medical Society was held in the amphitheater of the College of Medicine and Surgery, University of the Philippines, at 8:30 P.M., September 2, 1912. The first paper read was entitled: "An Experimental Investigation of the Parasitism and Pathogenicity of Species of Ameba and Entameba," by Dr. E. L. Walker. The author of this paper has been almost exclusively engaged in working upon this problem in Manila, for several years, and his conclusions are of the greatest importance in throwing additional light upon the pathogenicity of amebas in tropical countries. Dr. Walker stated that there are distinct biological differences between the

pathogenic and non-pathogenic amebas, especially in their size and the number and arrangement of their nucleoli. It will be remembered that all surface waters in the Philippine Islands that have been examined up to the present time, that are not thermal or strongly chemical, have been positive for amebas. In all of Dr. Walker's work, however, he did not find any pathogenic amebas in any of the waters which he examined. He is of the opinion that the disease is ordinarily transmitted through food handled by servants and others who have amebic dysentery and who work in kitchens, and perhaps, also, by the indirect method of using the stools of those who are sick with dysentery to fertilize vegetables, or, as is so frequent in the tropics, of using fecal matter as an insecticide. In the use of vegetables, like lettuce and cabbage, it will be apparent that if these are sprinkled from time to time with ameba-infected fecal matter, and such vegetables are eaten raw, there is considerable danger of conveying the disease. He thinks that the chronic cases, or perhaps they may be regarded as carriers, are also largely responsible in harboring the infection and distributing it to others by ways that will readily suggest themselves. He believes that the ordinary amebas in the water supplies of the Philippines may be safely disregarded. In the discussion which followed, Major Ashburn, of the Tropical Board, and Dr. Heiser, the Director of Health, requested the opinion of Dr. Walker as to whether his conception of the method of transmitting the disease would lead him to recommend any changes in the hygiene and prophylaxis in connection with drinking water, or the ordinary rules with regard to the eating of vegetables in the raw state. Dr. Walker replied that he could not recommend any change in the general public health measures. He thought, however, that considerable advance had been made in the study of this disease, and facts had been produced to enable the health officer to take steps to prevent the spread of dysentery.

The campaign of rat-catching which has been so persistently carried out by the Bureau of Health since the first case of human plague occurred, on June 17, has finally been rewarded by the detection of plague among rats. On August 31 the first plague infected rat was found at No. 351 Calle San Sebastian. This is in the same block in which the three cases in human beings occurred. On September 7 an infected rat was found at No. 104 Calle Santa Rosa, and another at No. 215 Calle Echague. These addresses are in adjoining blocks to the infected block mentioned above. All rat-catching efforts have now been concentrated upon this infected area. During the first week no general cleaning-up measures were undertaken; trapping and poisoning, and other methods of catching rats were alone carried out. This was done with the idea of not causing the infected rats to scatter to other portions of the city. Work has now been commenced at the outer borders of the infected territory and block after block is being cleansed. As soon as the cleaning measures at a given premise are completed, the owner is required to install the necessary metal garbage cans and to carry out such rat-proofing measures as may be deemed advisable by the sanitary engineer. This work is gradually proceeding inward toward the infected block, so that rats are literally being driven before the sanitary force, and when all of the workers meet at the center, the result should be a rat-clean district. It is also suspected that many of the rats are harbored in the closed storm-water drains, and efforts are now being made to fumigate these with sulphur.

The whole plan of campaign is now being based upon removing all available sources of food supply, so that the rats will be driven to the traps and to eat the poisoned bait which is set for them. This plan is very much handicapped by the fact that the infected area is in one of the large retail districts of Manila, and enormous quantities of food, such as corn, rice, potatoes, sugar, and other things of this kind are kept in baskets, and during the night hours rats have access to it.

There have been no cases of plague among human beings since August 22, and the total number of cases and deaths in Manila to date have been seven.

At Iloilo there have also been seven cases and seven deaths, the majority of which have occurred, at different times, in one house—this in spite of the fact that the house was thoroughly disinfected and sprayed with petroleum each time that a human case had occurred. The campaign against the plague is proceeding along the same lines at Iloilo as in Manila. So far, no plague infected rats have been found. The work is considerably handicapped by the lack of proper municipal ordinances to enforce sanitary measures, and the reluctance of the municipal council to grant the necessary legal authority.

In order to meet the requirements of the Philippines, enormous quantities of foodstuffs are imported from China and Japan. These consist largely of potatoes, onions, in open crates, and eggs, garlic, and foodstuffs peculiar to Chinese and Japanese, in baskets. Such cargo arrives in steamers almost daily from China and Japan, and as much of it is shipped from plague infected centers, the opportunity for plague infected rats to be introduced therewith is almost unlimited. On account of the great dependence of the Islands for their food supply upon these sources, it is, of course, impracticable to prohibit its importation, and in view of the enormous quantities of such cargo, it is impracticable to unpack it in order to free it from rats before it is introduced into the country, so that, in spite of the constant vigilance which is exercised, it is apparent that importations of plague rats in cargo may occur from time to time. It is indeed remarkable that the Philippines should have remained entirely free from plague for a period of over six years when the disease is present in epidemic form within a comparatively few days' steaming distance of the Islands. So far as known, no human cases have passed the maritime quarantine inspection at the ports of entry.

Progress of Medical Science.

Boston Medical and Surgical Journal.

October 17, 1912.

1. The Function of the Experimental Method in the Course in Pathology. H. T. Karsner.
2. Practical Points in the Treatment of Enlarged Cervical Glands in Children. J. S. Stone.
3. Midwives in Massachusetts. J. L. Huntington.
4. Chronic Invagination of the Ileum, Secondary to a Lipoma of the Intestinal Wall. H. W. Goodall.

2. Treatment of Enlarged Cervical Glands.—J. S. Stone emphasizes the following points: Cervical adenitis is always a secondary complication. Prompt removal of the primary cause, if this is possible, is by far the best method of cure of the adenitis. In those cases in which

the glands themselves have broken down hygienic and medical treatment cannot alter pathological facts. Surgical treatment determined by the existing conditions is of the utmost importance, while hygienic and medical treatment are useful aids which should not be neglected, but which should not assume undue importance.

4. Chronic Invagination of the Ileum.—H. W. Goodall notes that lipomata of the intestinal wall are rare. The clinical signs and symptoms arising therefrom are those of chronic invagination of the intestine. Dewis in 1906 reviewed the literature of intestinal lipomata and found but 44 cases reported. The situation of the tumors was recorded as follows: duodenum 6, jejunum 4, ileum 7, cecum and colon 5, sigmoid 5, rectum 6, small intestine 2, intestines 1, unknown 6. The rarity of intestinal lipomata was, however, of secondary importance in the case reported by the author as the symptoms were those of chronic invagination, the recognition of which led to the proper treatment and the final cure. It is of interest to note that 16 of these reported cases of lipomata caused an invagination of the intestine; whether or not the remaining cases presented symptoms of invagination one is unable to say. The author has brought out the following facts: A chronic intussusception may be (a) primary or (b) secondary to malignant or non-malignant disease. The clinical course regardless of the cause is often suggestive of malignant disease. The diagnosis is rarely made before operation or death, owing to the unfamiliarity with the clinical history and findings. The clinical history in the majority of cases is alone sufficient evidence for making a diagnosis. The history combined with typical tumor findings allows a positive diagnosis to be made. Resection of the bowel offers a cure and should be attended with a low mortality.

New York Medical Journal.

October 19, 1912.

1. The Treatment of Cancer on Biological Principles. J. Ewing.
2. Chronic Gonorrhea in the Male. V. C. Pedersen.
3. Blonds and Brunettes in the Tropics. C. E. Woodruff.
4. Constipation and Anemia. Beverley Robinson.
5. Diagnosis by Inspection. M. I. Knapp.
6. General Surgical Infection. C. A. Hull.
7. A Landmark; and Technique for Thyroid Measurement. M. S. Woolbury.
8. The Early Diagnosis of Laryngeal Tuberculosis. W. Lamberson.
9. Refraction with and without Cycloplegia. N. J. Weill.
10. The Surgical Treatment of Pest Bubo. C. G. Roehr.

1. The Treatment of Cancer on Biological Principles.—J. Ewing states that in attempting to build up a rational therapeutics of cancer, it is highly important to realize that the factors concerned with the incidence, growth, and constitutional effects of one type of cancer may be widely different from those concerned with other forms of the disease. Therefore, it is a common experience to find that one type of cancer responds to a serum or vaccine with encouraging results, while another behaves in exactly the opposite manner. Even in the same stages of the same variety of cancer, different individuals, as remarked by Vidal, seem to react in a different manner to the same agent. Hence there is need of much more comprehensive study of the effects of the disease before an efficient serum therapy can be properly controlled. Furthermore, the widely different etiology of many carcinomas, and the complex altruistic relations of the different tissues concerned, foreshadow serious obstacles in the way of a paninmune serum or a vaccine. If chorioma depends for its growth upon irregularities in lutein secretion (Pick), the proper point of attack is not the tumor itself but the lutein cell. There are interrelations between the sexual organs which may eventually demand attention in the attempt to control aberrant growths in these organs. The regeneration of squamous epithelium is markedly related to the activity of the thyroid gland, and several organs and tissues respond notably to variations in the activity of the hypophysis. Perhaps the study of internal secretions may open new avenues of approach for serum therapy in cancer. Thus, from a general survey of present conditions, the complexity of the problems seems to bar the hope that a specific treatment of cancer will shortly become of practical importance. Meantime, it may not be amiss to suggest that the combination of several methods, each ineffective alone, may increase the palliative effects and even lead in occasional instances to a virtual cure of inoperable cancer.

4. Constipation and Anemia.—Beverley Robinson asks, how may cases of anemia and constipation be cured? First, it is essential for the patient to go to the closet every day at a fixed time; usually, soon after breakfast is best. Again, it is necessary for the patient to have the diet properly regulated, not to overeat, to avoid foods that are known to be constipating, for a while or until immunity is established; to avoid excess of sweets and uncooked fruits or vegetables. Proper daily exercise in the open air, particularly walking, is obligatory. No fashionable observances or unwise advice should be permitted to interfere with the above régime. Of drugs, aloin in minute or small doses, given as granules or tablets, at dinner or at bedtime, is the most useful and least objectionable. Frequently it may be combined advantageously with belladonna, strychnine, and ipecac. When the daily evacuation has been delayed or prevented from some accidental cause, one or two glycerine suppositories will give a sufficient movement in a few minutes, and are preferable to other local means. Without strict attention being paid to the preceding instructions, it is frequently almost useless to insist upon iron or arsenic in any form, or combined.

8. Early Diagnosis of Laryngeal Tuberculosis.—W. Lamberson states that every tuberculous patient should have a laryngeal examination made when first seen, and frequently during treatment. Tuberculous involvement of the larynx is not proportionate to the extent of the disease in the lungs. Many cases of serious tuberculous laryngitis may be aborted by recognizing the importance of, and treating a slight or intermittent huskiness of voice at the proper time. One should not wait for the typical, pear-shaped swelling or anemia before making a diagnosis of laryngeal tuberculosis. The majority of cases start with hyperemia rather than anemia.

9. Refraction without Cycloplegia.—N. J. Weill notes that in competent hands under absolute cycloplegia skiascopy is mathematically more exact for refractive measurements than is the ophthalmoscope in equally competent hands, assisted with the ophthalmometer to estimate the corneal astigmatism and the trial lenses for the check subjective test. For practical, satisfactory results, for the patient, the latter method, without cycloplegia, is generally applicable, equally trustworthy, and preferable for the reason that the patient is not incapacitated, inconvenienced, or alarmed.

Journal of the American Medical Association.

October 19, 1912.

1. Some Causes of Sterility and Impotence in the Male. W. T. Bellfield.
2. Surgical Treatment of Prolapse of the Uterus and Walls of the Vagina. W. J. Mayo.
3. The Hygiene of Swimming Pools. M. P. Ravenel.
4. The Relation of Interstate Waters to the Spread of Typhoid. J. McLaughlin.
5. A Further Response to Some Criticisms of the Colloid-Chemical Theory of Water Absorption by Protoplasm. M. H. Fischer.
6. The Purpose and Limitations of Bio-Assay. H. C. Wood.
7. Chloroma: A Clinical Study of Two Cases. W. L. Bierring.
8. Reconstruction of Ball-and-Socket Joints. P. W. Roberts.
9. The Speech Relation of Cleft Palate Operation. G. V. I. Brown.
10. Pellagra: Observations on Some of Its Nervous Manifestations. D. E. Hoag.
11. A Case of Traumatic Psychosis Associated with an Old Depressed Fracture of the Skull. C. E. Atwood and A. S. Taylor.
12. Fracture of the Tuberosity of the Ischium Due to Muscular Action. J. M. Berry.
13. The Case for Pasteurization. E. O. Jordan.

1. Sterility and Impotence in the Male.—T. Belfield

points out that the essential value of the testis is shown by many observations not to be spermatogenesis only, but the transformation of overgrowth into energy. When spermatogenesis is prevented the testes invariably present one striking feature, namely, a pronounced increase in the number and size of the interstitial cells. There is a close relationship between the ductless glands and the testes. In a case of so-called "retrograde puberty," the administration of adrenal substance relieved the symptoms. The recognition of the excretory function of the testis throws light on its frequent invasion by mumps, typhoid fever, etc., and the infections of the epididymis, which is the modified kidney of cold-blooded vertebrates, may also frequently occur through the blood.

2. **Prolapse of Uterus and Vagina.**—W. J. Mayo classifies prolapse cases into three groups: First, those occurring during the child-bearing period, in which there is usually supervaginal hypertrophy of the cervix which may amount to from 4 to 7 inches. The resulting cystocele and rectocele are seldom extreme. In these cases the author has found that high amputation of the cervix, not closer than ½ inch to the internal os, in connection with the external Alexander operation on the round ligaments, will cure at least 96 per cent. of these cases, and with the elongated cervix, the anterior vaginal wall, carrying with it the bladder, can be transplanted upward several inches in the amputation, and occasionally the uterosacral ligaments have been shortened at the same time. The author objects to any general indiscriminate use of the Alexander operation, but it is valuable in these cases. As to the effect on future pregnancies, he says that round ligaments undergo hypertrophy and involution like the uterus, and he has not observed any bad influence in these cases. The second group of prolapse cases occur in middle-aged patients, and the operation used at Rochester in cases with marked cystocele and non-atrophic uterus is the Watkins-Wertheim operation, and this has been done more satisfactorily since they have used the Frankenthal technique. In the treatment of prolapse in elderly women they have found an operation that they have used for eighteen years, and which they call the "vagino-pelvic fixation operation," the most satisfactory. Its principles are simple: the vaginal wall with its attachments to the cervix lies outside the body. By removal of the uterus, and usually of the ovaries and tubes, the round and broad ligaments can be secured high in the pelvic cavity and that part of the vaginal wall which was attached to the cervix outside the body is fixed to the round and broad ligament stumps inside the pelvis.

3. **Hygiene of Swimming Pools.**—N. P. Ravenel states that it must be admitted that contagious diseases can be spread by means of artificial swimming-pools, and that if the water contains the germs of typhoid fever they can be taken into the body. With ordinary waters and with a pool of good capacity, the change once a week keeps the water in fairly good condition. The addition of hypochlorite of lime is a simple and cheap procedure which insures absolute safety.

7. **Chloroma.**—By W. L. Bierring. (See MEDICAL RECORD, Vol. 81, page 1115.)

8. **Reconstruction of Ball and Socket Joints.**—P. W. Roberts reports a case of tuberculous hip-joint disease in which the half-destroyed head of the femur was bound down by strong adhesions and was freed and removed, being sawed off in the middle of the neck. An ivory pin 1 inch long and three-sixteenths of an inch in diameter, threaded its whole length, was then screwed into the stump of the neck, and after the removal of a part of the body of the astragalus the remaining portion was screwed down hard on to the cut end of the femur, and, secured in this way, the parts held firmly. The newly formed head was replaced in the acetabulum, the wound was closed and the leg was put up in a long plaster spica. The subsequent history was uneventful. At the end of ten weeks the graft was found united with about 30 degrees of voluntary motion. The author believes that the same method might be employed in disease of the shoulder-joint, and that one may look for possibly a great reduction in the length of time of treatment of tuberculous hip-joint disease by the use of this method.

The Lancet.

October 12, 1912.

1. Ventral Hernia. W. H. Battle.
2. A Case of Septic Thrombosis of the Left Sigmoid, Left Cavernous, and Left Inferior Petrosal Sinuses, with a Suggestion for Treatment in Future Cases. C. A. Ballance.
3. The Prevention and Cure of Beriberi. H. Fraser and A. T. Stanton.
4. Temporary Partial Heart-block Occurring as a Sequel to Acute Pneumonia. A. L. Dykes.
5. Spinal Analgesia. Report on 400 Operations at the Military Hospital, Aldershot. J. W. H. Houghton.
6. Ovariotomy about Forty Years After a Discharge of Fetal Bones Through the Rectum; Recovery. Death a Year Later at the Age of 78 from Strictures of the Small Intestine and of the Common Bile-duct. J. D. Malcolm.
7. The Life Cycle of the Organism of Syphilis. J. E. R. McDonagh.

2. **Septic Thrombosis of the Sigmoid, Cavernous, and Petrosal Sinuses.**—C. A. Ballance reports a case of this condition occurring on the left side in a boy aged 12 years. In spite of prompt surgical intervention death occurred. Thrombosis of the cavernous sinus may occur from frontal sinus or sphenoidal sinus infection, from cellulitis of the face, carbuncle of the neck, meningitis, sarcoma of the base of the skull, marasmus, and traumatism, as well as from extension of septic processes from the sigmoid sinus or petrous bone. The following symptoms may appear: (1) *Those due to venous obstruction*, (a) Proptosis; (b) edema of eyelids and chemosis of the conjunctiva when the thrombosis extends into the ophthalmic vein; (c) edema of the face when the facial vein is thrombosed; (d) enlargement of the frontal veins, due to diversion of the circulation through the orbito-facial anastomosis; (e) venous hyperemia of the retina and choked disc are not symptoms of thrombosis of the sinus; such congestion depends upon the obstruction involving the ophthalmic and retinal veins. (2) *Symptoms due to interference with nerves.* (a) Supraorbital neuralgia, due to irritation of the first division of the fifth nerve. This division of the fifth nerve is generally the first to suffer. (b) More or less paralysis of the muscles of the eye, which may amount to complete ophthalmoplegia, due to affection of the third, fourth, and sixth nerves. The completeness of the ophthalmoplegia indicates a change in the wall of the sinus as well as in its contents—i.e., phlebitis as well as thrombosis.

3. **Prevention and Cure of Beriberi.**—H. Fraser and A. T. Stanton have noted beneficial effects produced in animals suffering from polyneuritis by the administration of extracts from rice polishings, and all the evidence has shown that the production of beriberi in man and of polyneuritis in fowls was not to be explained by any gross nutritive defect in the ordinary sense of the term, but rather by a deficiency of some substance of whose nature and action one was ignorant. Believing in the clinical and pathological identity of beriberi and polyneuritis gallinarum, it was decided by the authors, in the first instance, to test the value of the remedial agent on fowls suffering from polyneuritis. Experiments previously recorded have shown that the active substance is soluble in water and in 91 per cent. alcohol. In alcoholic solution it retains its activity unimpaired for months, and the first test was carried out with an alcoholic extract. Cases of polyneuritis were obtained in the ordinary way by feeding fowls on polished rice, and as soon as an animal showed distinct evidence of the disease it received the remedial agent; throughout the treatment the fowls were fed on the rice the consumption of which had given rise

to the disease. A cure resulted in most of the cases thus treated. The administration of the extract was also of prophylactic value. The remedy has not yet been tried in human cases of beriberi.

British Medical Journal.

October 12, 1912.

1. Some Cardiac Problems. T. W. Griffith.
2. The Length of Life of the Rat-flea Apart from Its Host. W. Nicoll.

2. The Rat-Flea Apart from Its Host.—W. Nicoll concludes from his investigation, that material infected with fleas and larvae may remain infected for as long as a year. This appears to be due to the fact that the larval and pupal stages in the development are greatly prolonged under the adverse conditions. Dampness, however, rapidly kills off both fleas and larvae. No direct evidence was obtained that the fleas bred under these conditions; but the appearance of larvae towards the end of some of the experiments suggests that they did breed to some extent. Fleas derived from the infected material readily attacked rats, and proceeded to multiply in the course of a short time.

Berliner klinische Wochenschrift.

September 30, *and October* 7, 1912.

Granuloma Telangiectaticum.—Hudda reports a case of this paradoxic lesion. The patient was a lad of 17, admitted to the clinic for a small ulcer on the palm of the hand. This had succeeded upon a traumatism two months before. A fold of skin had been pinched in a cleft in a wooden slab. A bluish red ecchymosis persisted for some days—in fact, it had not all vanished when a month later a tumor was evident *in situ* which gradually attained the size of a walnut, and bled freely when struck or squeezed. A physician applied a ligature to it, whereupon it fell off, but soon formed anew. The dressings could not be changed without the supervention of free hemorrhage. Patient had not come in contact with animals. When first inspected by Hudda the growth was dark red, the size of a large bean, and painless. The neighborhood was not infiltrated. A pedicle was hidden by the fungus-like character of the mass, which appeared on superficial inspection to be sessile. The entire surface was somewhat raw and covered by a deposit which was in part blackish and in part yellowish, the former hue due to dried blood and the latter to the natural discharge, which was of a penetrating fetid odor. The growth was radically extirpated, and the microscopic examination showed a connective tissue cell structure supporting numerous strongly dilated capillaries. There were but few of the conglomerations of cocci, once believed to be the active cause, but the Schridde formations were readily brought out by staining. Our knowledge has not been advanced by the report beyond the fact that cumulation of evidence continues to show conclusively that botryomyces are not responsible for these lesions.

Relationship Between the Nose and the Generative Organs.—Koblanck and Roeder have sought to extend our knowledge of this autogenetic relationship by experiments on immature female animals. If the nasal organ should be wholly or in part removed there should in theory be some influence exerted on the developing genitals. In the earliest experiments the intervention proved to be too severe, disturbing the course of the experiment. In dogs the inferior turbinal was removed. Those animals which did not react too strongly to the operation were followed up past the period of sexual development, then killed, and other genitals studied. It was found that loss of the turbinals had exerted no influence of any serious nature on the general development, but there was a remarkable arrest of development in the ovaries, uterus, and vagina, especially in the horns of the uterus. Sexual desire was also extinguished. The more probable explanation of this phenomenon is an original connection between the nasal organ and the hypophysis, as a result of which injury to the former reacts upon the latter inhibiting its normal influence on sexual development.

Atropine Poisoning.—Wolter, in reporting two cases of atropine poisoning, one fatal, quotes figures to show that a certain number of cases regularly occurs, illustrating the dependence of the incidence on fixed conditions, as is the case with many other poisons. The mortality is about 11 per cent. In the fatal case, aside from the ordinary symptoms of atropinism so commonly seen the patient had convulsions and trismus and was unconscious. The cat's eye was fully used as a biological test of the urine, vomited matter and the poisoned cordial which the patient had drunk. The temperature was high, pulse very rapid. The treatment was mostly directed to efforts at elimination. Morphine was used for the various motor symptoms which developed. Attempts were made to nourish with the sound, which made it necessary to overcome the trismus. Death which was evident from the first was preceded by cyanosis. In the second—recovered—case, the picture was similar but less severe. The various motor phenomena were controlled by chloroform inhalation. A good vitality enabled the patient to throw off the intoxication. The treatment was eliminative chiefly. The chloroform was used primarily because of the exisiting delirium.

Hemoglobinuria.—Miller writes exhaustively on this condition from the causal viewpoint. It can originate from the respiratory, digestive or cutaneous areas, from the uterus, from wound surfaces and from the blood itself. It may be due to burns, cold, overexertion, poisons, hemorrhage, pregnancy, and infections. The elimination of hemoglobin is effected by the convoluted tubes, not by the glomeruli. The lesions which appear in the kidneys are purely degenerative, not inflammatory. The jaundice which accompanies hemoglobinuria is an absorption-icterus. There is no hematogenous icterus.

Significance of Hemolytic and Anhemolytic Streptococci for the Pathology of the Tonsils.—Henke and Reiter state that the tonsils of perfectly healthy subjects may harbor both of these forms. They show the untenability of the view that anhemolytic cocci are not pathogenic. Both sorts occur alike in mild and fatal anginas. The authors seek to refute the view that anhemolytic and saprophytic cocci become hemolytic and pathogenic when raw surfaces are produced. Quinsy socalled is chiefly a streptococcus disease, and there is no difference whatever in its type as based upon the quality of the streptococci.

Postvariolous Osteomyelitis.—Batzdorff states that this lesion was first described by Chiari in 1892. Since that period remarkably few cases have been reported. It is therefore the more singular that two cases have been recorded within a few years at Breslau. The first was a symmetrical osteomyelitis of the acromion. The second was limited to one humerus, and developed very early in the course of the smallpox, in fact, rather as a complication than a sequela. The radiogram showed the presence of a large sequestrum by the seventh week of the infection. Of interest was the fact that seven years earlier the patient had had typhoid. While no Eberth's bacilli were found in the pus it is possible that the variola activated a latent typhoid osteomyelitis.

Arthritis Statica.—Strauss states that before the Röntgen era but little was known of non-inflammatory deforming affections of the joints. They were variously attributed to injury, senile or arteriosclerotic changes, trophic and metabolic anomalies, etc. Much credit is due to Preiser for light thrown upon this obscure subject. He has described some 2,000 cases of socalled static arthritis and elaborated a successful management for the

same. These cases are commonly mistaken for rheumatism, gout or sciatica. The term "static" signifies that the joint is imperfectly weighted, or, as might be said, its bearings are not right. This results from several different factors—improper balancing of the body, anomalous muscular pull, etc. Whatever the mechanism, a train of secondary phenomena is set up. The joints form an element of lessened resistance. They are readily injured, and also readily attacked in infectious processes like tuberculosis and gonorrhea. Preiser apparently ignores a dystrophic element due to anomalies of internal secretion. His management is purely orthopedic.

Deutsche medizinische Wochenschrift.

October 3 and 10, 1912.

Treatment of Circulatory Failure Especially in Acute Infectious Diseases.—Hoffmann states that this very aspect of therapeutics well indicates the progress medical science has undergone in recent years through improvements in diagnosis and experimental pharmacology. Once purely empirical the management of this condition has now developed into a true functional therapy. We have complete insight into the special action of individual remedies, and can sharply determine the indications. The introduction into therapeutics of hormones has brought about a notable transformation. We exert a favorable influence upon the circulation with adrenalin in infections, even if we cannot prove that the latter diminish the natural production of the substance. The therapeutic use of substances native to the body is surely a step in the evolution of a rational therapy. The symptoms of an acute failure of the circulation differ notably in respect to the particular source—whether the heart or blood vessels. The former is naturally expressed by dyspnea—cardiac asthma—followed by cyanosis and edema of the lungs. These attacks as a rule supervene after unusual exertion or the taking of a hearty meal. In most cases the patients survive the first attack. If the failure is vascular, we see a different train of symptoms—tachycardia, pallor, cold sweats, delirium, and unconsciousness. Ordinary swoon, on the other hand, represents a failure of the vagus nerve, especially its splanchnic branches, which recovers under posture only. In primary cardiac failure as described above we make free use of mustard paste and hot hand and foot baths or cut out the circulation temporarily from one of the lower extremities, this act replacing the ancient venesection which, however, is coming more and more into use. The aim of treatment is necessarily to unburden the weak heart. Various cardiac roborants are thrown directly into a vein, notably of late years digalen and strophanthin. When, on the other hand, the failure is peripheral caffein is rationally indicated, and especially in recent years adrenalin and pituitrin.

Potentia Generandi in Double Tuberculous Epididymitis.—Bull sums up a case as follows: The patient despite this affection is the father of three children. All the evidence upholds the genuineness of the paternity. At the same time there are some circumstances which serve to obscure the status of the case. The spermatozoids are motionless. The semen has no characteristic odor and Florence's reaction is negative, indicating a relative absence of prostatic secretion. The patient has also tuberculosis of this organ. This defect of prostatic fluid is believed in many quarters to anagonize procreation. The patient's wife shows no evidence of infection and the children react negatively to the von Pirquet test.

Renal Diabetes of Pregnancy.—Novak and two others consider the frequency of glycosuria and carbohydrate intolerance in pregnancy. The condition is not in any way dependent on the diet, and herein it is sharply differentiated from true diabetes. The question of carbohydrate tolerance is also one apart from *renal* glycosuria, which at first sight impresses us as a leakage phenomenon due to transitory permeability of the excretory mechanism. This socalled renal diabetes is said to be rare outside of pregnancy. The question now suggests itself, "has this condition any definite relationship with the autotoxic state of pregnancy?" There is no increase, but often a decrease in the sugar of the gravid blood, and, as already stated, the glycosuria is not aggravated by a carbohydrate diet. But certain gravidæ who do not present renal diabetes show a remarkable carbohydrate intolerance, as shown by the occurrence of induced alimentary glycosuria. The two facts taken side by side appear to show that either the kidneys or liver—the organs most vulnerable in gravidity toxicosis—may exhibit functional inefficiency as shown in anomalies of carbohydrate metabolism.

Chemotherapy of Sepsis.—Rosenstein refers to the use of a synthetic containing both arsenic and silver which was introduced by Blumenthal into the therapy of puerperal sepsis. He has tested its action in sepsis of various kinds and notes a quasi specific effect due perhaps to the coöperation of several factors. The disease process was checked, and a gradual improvement set in, in a certain number of cases. In other instances a marked local reaction occurred. An aseptic abscess may form at the site of the injection puncture. Another termination was the localization of a general process and the healing of the local lesion. The author believes that the drug is bactericidal, and also strongly promotes leucocytosis. Both the silver and the arsenic are believed to act by chemotherapy, *i. e.* bacteriotropic. The author has not yet ventured the intravenous method.

Sterilization by Means of Vasectomy.—Kappis covers this subject in one of the first papers published in Berlin, for, as is well known, this intervention is American, and with the exception of Switzerland, practically unknown on the Continent as a social measure. The author first takes up the work of Sharp of Indiana, who first began to vasectomize prisoners in 1899. Having learned of his results through a personal witness he decided to vasectomize a young man on the simple indication of excessive onanism which had had severe consequences, both physical and psychical. There seems to have been no direct sociologic element in the intervention. The patient was even anxious to be castrated. The author did the vasectomy without much expectation of a satisfactory result, but was agreeably disappointed. The habit was suddenly discontinued, then resumed for a brief period, but only to a slight extent, after which he has been permanently cured (eight months to date) and has recovered his health. But the author evidently regards the rationale of the cure as largely suggestive.

Röntgen Study of the Larynx and Trachea.—Réthi writes briefly on this topic. He has for a long time sought to get better negatives, using all the different angles for posing, and found the antero-dorsal very well adapted for the purpose, because it cuts out the vertebral column and also brings out the structures below the larynx. However, it is by no means easy to interpret the radiograms offhand, and the author reproduces from Sobotta's Anatomy a median lateral section of the larynx and trachea to serve as a key. The plates themselves are so sensitive that according to the author even an object like a fishbone in the larynx would be readily visible.

Opinion of Sanity or Insanity from Appearance for Experts Alone.—In a murder case a question was asked of a non-expert witness, "When you observed him (the defendant) was his appearance that of a sane or insane man?" This question was held properly excluded. The apparent condition of the mental system as to sanity or insanity is not a matter of fact merely, and involves essentially the inference and opinion of the witness. It is a matter for experts and not for ordinary witnesses.—Odom v. State, Alabama Supreme Court, 56 So., 913.

Insurance Medicine.

Disease in Relation to Accident.—Douglas Knocker says that he has long been impressed with the need for careful study, observation, and record of the above subject. He has likewise been much surprised at the divergence of views upon it, at the lack of authoritative opinion, and at the tendency of medical men to depend upon old observations rather than to study the subject anew. Knocker's paper deals primarily with disease and secondarily with the causative accident; it does not deal with accidental injury, or injury caused by accident apart from disease. The subject may be treated under four separate headings: (1) The disease is an accident. (2) The disease appears subsequently to the accident and in consequence thereof. (3) The disease existed before the accident, which causes it to get worse. (4) The disease accentuates the effect of accident.

1. Under the first heading are included processes of the same nature as that indicated by the initial accident, as, for example, infection with anthrax. Many insurance policies exclude liability for such condition, as they frequently contain a clause reading: "Injury due solely to external, violent, accidental, and visible means." On the other hand, such accidents come under the usual provisions of Workmen's Compensation Laws. Physicians must remember, too, that what to them is not an "accident" but a foreseen occurrence may in law still be determined as an accident. Thus a man suffering from arteriosclerosis and a detachment of one retina was told by a competent ophthalmologist that he would surely have a similar occurrence in the other eye if he underwent any sudden strain, lifted heavy weights, etc. The man did precisely what he was warned against, and the expected happened. In law, however, he obtained the usual indemnity from the insurance company which insured him against "accidents."

2. Diseases which are consequences of the accident may be subdivided into three sub-groups: (*a*) infection through the seat of injury by accident; (*b*) nervous diseases resulting from accident; (*c*) diseases resulting from the treatment itself. The first sub-group includes accidents with subsequent infection, and includes septicemia, pyemia, erysipelas, tetanus, e.c. In law, infection in a wound is *prima facie* part of the wounding. Only rarely it may be proved that the infection is a subsequent occurrence, not due to the acciden, at all. Nervous diseases have been the usual claims of workmen for compensation when no physical disability could be brought in reference, to an alleged accident. Numerous cases of malingering have been, of course, brought up before the courts, but since medical referees have been sitting with the judges, such diseases as "neurasthenia" due to accident have become much rarer. Under the sub-group "cure causes disease" must be considered such deformities as scars due to burns, contractures, paralysis following injury to nerves in a fracture, flat-foot following injury to bones of the foot, etc. Knocker quotes numerous legal cases illustrative of the conditions named above. Thus, an insurance company was held liable for a death from pneumonia following a fall into a damp spot in the hunting field. Such conditions as typhoid fever, "ptomaine poisoning," etc., have been used successfully as claims for damage against dairies, hotels, etc. A signalman obtained a verdict on the basis of a nervous condition resulting from fear of having an accident occur, which, however, he successfully prevented. A woman recovered damages from a man whose "practical joke" consisted in telling this woman that her husband met with a bad accident, this lie making her very ill. "Disease following processes of cure" has led to many interesting legal questions. Thus a small exostosis appeared on a workman's hand following an injury, and he was awarded annual indemnity for it, though an operation would probably have removed this "consequence of cure." His physician, however, stated that there is a definite risk of sepsis in every operation, and the court sustained his views.

3. Under "diseases existing before accident but aggravated by it" are included numerous conditions that have frequently led to fraudulent claims. Hernia and pain in the back are the worst offenders in this respect. Hernia may be very rarely due to a sudden strain, but the legal claims make it appear that this is the most frequent etiology of the condition. Tumors have been claimed to arise after some accidental injury, but the courts have usually ruled otherwise. An attack of gout in a thumb following an accident to the thumb was, however, held to be an accident, though the workman did not deny that he was suffering from constitutional gout. Cases of locomotor ataxia and of aneurysm have been held to be accelerated by accident and suitable indemnity awarded.

4. Frequently a pre-existing disease aggravates the consequences of an accident. Occasionally the granting of an indemnity in such cases appears quite unfair to a lay mind. Thus indemnity has been granted because an aneurysm that was on the verge of rupture finally ruptured after an accident; because a rheumatically weak joint has been dislocated by strain of work; because an unsupported rupture was aggravated by strain. Insurance companies protect themselves by clauses excluding pre-existing diseases and the effects of injury upon them. In an action based on negligence the weak health of the plaintiff, even if he had reached the last few hours of his life when injured or killed, is no defense to the defendant, though a reasonable jury might reduce the damages accordingly. The English Workmen's Compensation Act likewise leaves little defense to the employers in this connection; thus, rupture of an advanced aneurysm because of strain in turning a spanner was held to be an accident. Injuries following an epileptic fit, *e.g.* fall into a ship's hold, have been held accidents under this act.

Suggestions and Ideas.—Knocker reiterates the need of research in the question of accident in relation to disease. The data of such research may go far to oppose the questionable value of "expert" testimony from doctors under the guide of the lawyers employing them or the strain of cross examination. Thus the relationship of injury to the development of tumors needs careful investigation. Complete examinations of men claiming to suffer from the consequences of accident must be performed. The urine should always be examined, for headache may be due to nephritis and not to a head injury, for example. A written account of everything observed should be made on the spot and the original paper should never be destroyed, for the originals can be used in court. Diagnoses, comments, etc., should be written out separately, so as to be excluded at trial if necessary. "A medical witness is a bombshell that may blow up on either side, and in consequence should never be used except in case

of necessity." The witness that weighs most with the court is the hospital surgeon who attended the injured man, and the side that gets him will usually win. It is useless to argue that medical witnesses are impartial. They may go into the witness box intending to be fair, but a cross-examination casting doubt upon their integrity or professional skill drives them often into defence, if not defiance. A medical referee, sitting with the judge, renders great assistance, for he helps out the judge in medical matters and also curbs the imaginative medical witness. Knocker thinks that fraudulent cases have diminished very considerably since medical referees have been introduced in England.—*Meeting of the Life Assurance Medical Officers' Association.*

Relation of the Medical Examiner to the Contract.—The relation of the medical examiner for a life insurance company to the contract, is, according to Mr. Guilford A. Deitch, General Counsel, Reserve Loan Life, Indianapolis, a most important one, for upon the manner in which he performs his duties depends in a very large measure the success or failure of the company. The relationship existing between a life insurance company, in law as in fact, is that of principal and agent. In the performance of the duties entrusted to him, the medical examiner stands in the place of the company, and his acts within the scope of the powers vested in him are the acts of the company itself, and his knowledge from discovery while acting for the company is likewise the knowledge of the company. By no contractual stipulation can the company make its medical examiner the representative of the applicant. Having derived his authority to act from the company, being obliged to act in conformity to its instructions, looking to it for compensation, and acting for it in a professional capacity to gain facts for its use, the law constitutes the medical examiner agent of the company irrespective of any stipulation to the contrary in the application.

In a few of the States, among which are Indiana, Maryland, Michigan, Ohio, and Pennsylvania, the companies are shielded against fraudulent conduct on the part of the examining physician in preparing the application. In each of these States the making of fraudulent statements in an application for life insurance is made a misdemeanor, punishable by fine or imprisonment.

The ideal medical examiner, in addition to proficiency in professional skill, must be possessed of a goodly knowledge of human nature, must be endowed with ability to use such tact as will enable him to elicit from the applicant all information that would in any way bear upon the assumption of the risk, and must above all be possessed of a sense of moral duty to the company that cannot be changed by any prospect of personal profit.

In making the examination, the examiner's duty is to obtain the facts relating to the physical condition, family history, environment, habits, and morals of the applicant, that the medical director when the report is received, may have a full history of every phase of the applicant's life that would in any way affect his insurability. To obtain these facts and to fulfill the purpose of his appointment, the examiner should not limit his inquiries to those set out in the examination blank furnished him, but should take the questions there given as suggestive of the facts sought and should augment the examination by pursuing these questions in detail in order that the report to the company may bring before it a picture of the risk as full and complete as the nature of the case will admit. The trained examiner looks not alone to the responses made by the applicant as a basis for making report of his examination. From the moment his eyes fall upon the applicant he is reading in the latter's speech, facial expression, general appearance and surroundings, facts that put him on inquiry as to the existence or nonexistence of conditions that would render the risk undesirable. As between the medical examiner and the medical director, it is the duty of the former to report facts affecting the longevity of the applicant rather than opinions as to his insurability. In the doing of this, he should ever have the safety of the company in mind, and he should always give it the benefit of any doubt as to the effect of existing conditions, no matter how insignificant, which might in his opinion tend to lessen the applicant's life expectancy. The examiner should not conclude that the rejection of a risk which he has recommended as first-class, in any way reflects upon his ability or indicates a disbelief in his honesty. He must consider that the company has other sources of information which may show the existence of facts warranting a rejection, notwithstanding that the examination on its face showed the applicant to be an acceptable risk. Furthermore the examiner should not plant his belief based on knowledge of the individual case, that a certain defect in the health record of an applicant does not tend to shorten his expectancy against the experience of the medical director. The conclusion of the examiner in such a case is but a belief, while the director can prove by tables of experience that a class of risks similarly affected will show an actual loss exceeding the expected loss on approved risks. Statistics show that a greater number of the rejections by the home office of the company have previously been recommended by local examiners as acceptable risks. Although the examiner owes a first duty to his company to make the examination so careful and complete as to bring before the director all facts that would in any particular bear upon the applicant's insurability, he also owes a duty to both applicant and soliciting agent to make a full and conscientious report of the result of his examination so as to give to the applicant the benefit of all conditions favorable to him and that all mitigating circumstances may be known to the director. *Second Mid-Year Meeting of the Medical Section of the American Life Convention.*

Construction of Life Tables for the Population of the United States.—At the recent Congress on Hygiene and Demography, Mr. Miles M. Dawson, in a paper with this title, said there are no valuable mortality tables based on data obtained in the United States. It was not until the census of 1900 that anything at all worth while was done in the matter of deriving a population mortality table. That census had the advantage that several of the States and many cities in other States had adopted effective means of registration of deaths and that returns from the death registrations had been made directly to Washington. Consequently at ages other than infantile it was possible to compute the death rates in a proper manner for these registration periods and accordingly this was done. At the present time, as a direct result of the establishment of a permanent Bureau of the Census, the number of States and cities in which there is uniform and effective registration of deaths is greatly increased until now more than half the population is covered by such States and cities.

Book Reviews.

A System of Treatment. By Many Writers. Edited by Arthur Latham, M.A., M.D. (Oxon.), F.R.C.P. (Lond.), Physician and Lecturer on Medicine, St. George's Hospital; and T. Crisp English, M.B., B.S. (Lond.), F.R.C.S. (Eng.), Senior Assistant Surgeon and Lecturer on Practical Surgery, St. George's Hospital. Volume I, General Medicine and Surgery; Volume II, General Medicine and Surgery; Volume III, Special Subjects; Volume IV, Obstetrics and Gynecology. Price $24 net for four volumes. New York: The Macmillan Company, 1912.

The four volumes comprising this system consist, exclusive of the index, of a total of 4,764 pages. Each volume contains 133 pages of the complete index to the entire set. The work covers the entire ground of medicine, surgery, gynecology, and obstetrics, and is fairly complete. The large number of writers who have contributed to its pages consist of many of the best known clinicians of England, men whose eminence impresses the stamp of authority upon this product of their joint authorship. The editors have admirably acquitted the task of coordinating the enormous amount of material that enters into this work. To the American practitioners this system of treatment is valuable chiefly as a means of gleaning the modern methods of treatment as practised by their British colleagues.

Volume I includes the general subjects such as the principles of treatment, surgical technique, etc.; the infective diseases; the constitutional diseases; intoxications; general injuries; the diseases of bones and joints, of the head, spine, chest, lungs, and bronchi, and of the mediastinum, pericardium, heart, arteries, veins, and lymphatic glands and vessels. It will suffice to mention only a few of the names composing the authorship of this volume in order to indicate its strictly representative character. These names are Dr. Mitchell Bruce, Dr. Eustace Smith, Mr. Lockhart Mummery, Mr. Maynard Smith, Dr. T. J. Horder, Dr. Hale White, Mr. Ernest Lane, Lieut.-Col. Reid Roberts, Sir Thomas Oliver, Dr. E. I. Spriggs, Sir Havelock Charles, Dr. Purves Stewart, Mr. Arbuthnot-Lane, Mr. H. S. Pendleburg, Dr. Hector Mackenzie, Dr. Cyril Ogle, Dr. J. Mackenzie, Sir William H. Bennett, and Mr. Arthur Connell. It is difficult to pick out any one article for commendation, so well do they all seem to cover the ground of their individual themes. Mr. Arbuthnot-Lane presents a complete account of the operative treatment of fractures. In the ample provision of sixty pages James Mackenzie discusses in his clear style the treatment of diseases of the heart. Dr. Spriggs's article on diabetes is particularly valuable for its details in the management of the individual case. In the chapters on the treatment of pulmonary tuberculosis one notes the ample description of the methods of sanatorium treatment. A special chapter is devoted to the subject of the treatment of pulmonary tuberculosis by means of the induction of an artificial pneumothorax.

In the second volume Dr. Herbert French contributes the articles on pernicious anemia, on the other forms of anemia, and on hemophilia and aplastic anemia. Professor George R. Murray writes on leucemia and on purpura. In the treatment of the latter disease no mention is made of the recent use of human blood serum. Dr. James Torrens writes on pseudoleucemia. The article on Addison's disease is written by Dr. Otto Grünbaum. Dr. Leonard Williams contributes the articles on the administration of thyroid extract, congestion and inflammation of the thyroid gland, infantilism, myxedema and cretinism, nocturnal enuresis, and thyroid inadequacy. The articles on the surgical treatment of inflammatory affections of the thyroid gland and of exophthalmic goiter, and the article on goiter are written by Mr. T. P. Legg, while Dr. W. Hale White contributes the article on exophthalmic goiter. Mr. Arthur Connell writes on injuries of the spleen and the surgical treatment of diseases of the spleen, and Professor George R. Murray writes on splenomegaly and chronic polycythemia with cyanosis and enlarged spleen. The articles on affections of the lips are written by Mr. James Berry and those on diseases of the jaws by Mr. E. W. Hey Groves. Stomatitis and other affections of the mouth are discussed by Dr. Arthur J. Hall, and the diseases and affections of the tongue by Mr. Jonathan Hutchinson. Mr. James Berry writes on cleft palate and Mr. C. H. S. Frankau on other affections of the palate. Mr. T. P. Legg contributes the articles on diseases of the salivary glands, of the neck, and of the esophagus. The principles of dietetics and infant feeding are discussed by Dr. E. S. Spriggs. Dr. Eustace Smith writes on food fever. Mr. Edred M. Corner on abdominal injuries, Mr. T. Crisp English on the preparation of patients for abdominal operations and the treatment of patients after abdominal operations, and Mr. E. W. Hey Groves writes on affections of the umbilicus. Mr. A. W. Mayo-Robson and Dr. W. Soltau Fenwick discuss respectively the surgical and medical treatment of the diseases and affections of the stomach and duodenum in an important array of articles. Among these articles may be mentioned those on atrophy of the stomach, hour-glass stomach, perigastritis, parasites and concretions of the stomach, seasickness, and volvulus of the stomach. The article on hypertrophic stenosis of the stomach is written by Dr. Edmund Cautley. Among the writers on the diseases and affections of the intestines may be mentioned Mr. T. Crisp English, Dr. James Torrens, Dr. G. A. Sutherland, Dr. Arthur F. Hertz, Dr. Robert Saundby, Mr. Ernest W. Hey Groves, Mr. G. R. Turner, Mr. C. T. Dent and Mr. Harold Stiles. The articles on diseases and affections of the colon, and on the operative treatment of chronic constipation are contributed by Mr. P. Lockhart Mummery, with the exception of the article on colitis, which is written by Dr. W. Hale White. To Sir Frederick Wallis have been assigned the articles on the diseases and affections of the rectum and anus. Dr. H. D. Rolleston writes on ascites and on various diseases of the liver; Mr. Edred M. Corner on acute peritonitis and subphrenic abscess; Dr. Arthur Latham on tuberculous peritonitis; and Mr. James Cantlie on abscess of the liver. Mr. T. Crisp English contributes the article on hydatid cysts of the liver and Dr. G. C. Law that on tropical liver. Mr. H. D. Rolleston discusses the medical aspects of cholelithiasis and Mr. A. W. Mayo-Robson discusses the surgery of the gall-bladder and of the pancreas. Dr. A. E. Garrod writes on urinary disorders and Dr. Arthur Latham on bacilluria. Mr. J. W. Thomson Walker discusses the surgical diseases of the kidney and ureter and Dr. W. P. Hennigham writes on the medical diseases of the kidney. To Mr. Sidney G. MacDonald have been assigned the articles on the diseases of the bladder; to Mr. Ivor Black those on the penis, urethra, and testicles, and to Mr. C. H. S. Frankau the article on chronic urethritis. Mr. John Pardoe contributes the articles on the diseases of the prostate and Mr. T. Crisp English those on diseases of the breast. Among the large number of authors who contribute articles on the diseases of the nervous system may be mentioned the following: Dr. T. Grainger Stewart, Dr. Alfred M. Gossage, Dr. William Aldren Turner, Mr. C. H. S. Frankau, Dr. H. Campbell Thomson, Dr. Maurice Craig, Dr. E. D. Macnamara, Dr. Purves Stewart, Dr. James Collier, Dr. James Taylor, Dr. Wilfred Harris, Dr. S. A. Kinnier Wilson, Dr. Judson S. Bury, Mr. James Sherren, Dr. E. Farquhar Buzzard, Dr. Gordon Holmes, Dr. J. S. Risien Russell, Mr. Robert Jones, Mr. D. McCrae Aitken, Mr. Donald Armour, and Dr. Herbert French.

The third volume deals with special subjects. It opens with articles on such subjects as anesthetics, ionic medication, massage, mechanical vibration, etc., and a full description of vaccine therapy. Among the contributors to this section may be mentioned Dr. J. Blumfeld, Mr. Herbert F. Waterhouse, Dr. R. Fortescue Fox, Dr. A. C. Inman, Dr. Harold Spitta and Dr. Gustav Hamel. Professor W. J. Simpson writes on tropical diseases, Dr. C. W. Daniels on tropical fevers, and other articles on tropical diseases are contributed by Dr. G. C. Low, Dr. W. Carnegie Brown, and Dr. J. M. H. Macleod. Among the contributors of articles on diseases of the eyes may be mentioned Mr. Ernest Clarke, Mr. R. W. Doyne, Mr. Harold B. Grunsdale, Mr. Arthur Lawson, and Mr. E. E. Maddox. Among the writers on the diseases of the nose we note the name of Dr. Chevalier Jackson. Mr. William Milligan contributes a number of articles on diseases of the ear. The diseases of the skin are exhaustively covered by Dr. J. M. H. Macleod, Dr. F. Gardiner, and Dr. Wilfred S. Fox. The subject of dental surgery is presented by Mr. Norman G. Bennett.

The fourth and concluding volume of this work is devoted to the subjects of obstetrics and gynecology. The opening article on the general management of pregnancy is from the pen of Dr. J. W. Ballantyne. The complications and abnormalities of pregnancy are discussed by Dr. A. Lionel Smith, Dr. W. R. Dakin, Dr. C. E. Purslow, Dr. Herbert French, Dr. Thos. G. Stevens, and Mr. John Bland-Sutton. Dr. E. Hastings Tweedy deals with the management of normal labor and the management of labor in special presentations. Among the writers contributing articles on the complications of labor may be mentioned Dr. Cuthbert Lockyer, Dr. C. F. Darwall Smith and Dr. C. E. Purslow. Dr. J. R. Freeland writes on the management of the newborn child. The obstetric operations are

discussed by Dr. Comyns Berkeley, Dr. Llewelyn Powell, Professor J. M. Munro Kerr, and Dr. C. Hubert Robert. In the chapters on gynecology the following contributors appear: Mr. Victor Bonney, Dr. J. W. Ballantyne, Professor J. B. Hellier, Dr. W. E. Fothergill, Dr. Septimus Sunderland, Dr. H. Russell Andrews, Mr. John Bland-Sutton, Professor Walter Carless Swayne, Dr. R. H. Gibbons, Dr. W. Blair Bell, and Dr. G. Bellingham Smith.

In concluding this review it can be stated without reserve that this work represents a valuable contribution to modern medical literature in gathering together the latest methods of treatment. With its exceptionally complete index it cannot fail to be of service to the busy practitioner as a work of reference.

A Text-Book of Human Physiology, Including a Section on Physiology Apparatus. By Albert P. Brubaker, A. M., M.D., Professor of Physiology and Medical Jurisprudence in the Jefferson Medical College; formerly Professor of Physiology in the Pennsylvania College of Dental Surgery; Lecturer on Physiology and Hygiene in the Drexel Institute of Art, Science, and Industry. Fourth edition. Revised and enlarged. Price $3.00. Philadelphia: P. Blakiston's Son & Co., 1912.

One of the most important functions of any text-book is so to guide the mind of the student that he will be induced to think for himself and to reason out his own conclusions. The mere collection of a mass of facts, no matter how great their intrinsic value, will never result in the production of an able physician. It is in the performance of this function that this particular text-book is at fault. There is too little discussion of the reasons for the acceptance or rejection of theories, not a single reference is given in the entire volume, and there is almost complete absence of that stimulus to independent thought which should characterize the ideal text-book.

This fourth edition has been rather extensively revised and brought up to date. The illustrations, especially the tracings, are excellent. The omission of detailed description of apparatus from the text is very commendable. The book is well made but the text is seriously marred by numerous typographical errors.

A Manual of Clinical Chemistry, Microscopy, and Bacteriology. By Dr. M. Klopstock and Dr. A. Kowarsky of Berlin. In their "Institut fur Medizinische Diagnostik," in Berlin. Only authorized translation from the last German edition, thoroughly revised and enlarged. Illustrated with forty-three textual figures and sixteen colored plates. Price $3.00. New York: Rebman Company.

This work contains chapters on the examination of secretions of the mouth and pharynx, nasal secretions, conjunctival secretion, sputum, gastric contents, feces, urine, prostatic secretion, blood, on diseases of the skin, and a final chapter on various methods of staining, etc. It will be seen that with regard to its contents this book is similar in scope to numbers of other works. Unfortunately, however, the present volume is handicapped by being a translation, and the translator's acquaintance with the English language is not always equal to his knowledge of German. Among the words and expressions which have a foreign look we have noted the following: Kongo-paper, renin and reninogen, kryoskop, Gutceit's detection of arsenic, Essbach's reagent, brenzkatechin, natrium, thiosulphate, natrii fluorat, peptone sicc., sykosis, ovarial cysts, the tip of a knife of aloin, and many others. On page 147 we find sodium chloride and sodium chlorid within a few lines of each other; the solutions at the bottom of page 185 have a curious appearance; on page 204, kalium iodid and kalium iodide both appear, and on the same page KOI is erroneously given as the formula of "kalium iodid." Naturally, many of the methods described are those in use in Germany rather than in this country.

The Prevention and Treatment of Disease in the Tropics. A handbook for officials and travelers compiled chiefly for the use of officials in the Sudan. By Edward S. Crispin, M.R.C.S., L.R.C.P., Fellow of the Royal Geographical Society, Fellow of the Society of Tropical Medicine and Hygiene, Assistant Director of the Sudan Medical Department. London: Charles Griffin & Company, Limited; Philadelphia: J. B. Lippincott Co., 1912.

This little book, scarcely more than a mere pamphlet, has been compiled for the benefit of those traveling in out-of-the-way parts of the world. It gives useful information both in the way of avoiding diseases and also in the line of such treatment as an unprofessional person may be able to afford. The author has done his work very well indeed, and we can strongly recommend the book to travelers in the tropics; it will take up but little room, and it may prove of great value.

Dental Anesthetics. A Text-book for Students and Practitioners. With a Contribution on Analgesia. By John Bolam, L.D.S. (Edin.), Honorary Assistant Dental Surgeon, Newcastle-upon-Tyne Dental Hospital; Lecturer on Dental Materia Medica and Therapeutics, Newcastle-upon-Tyne Dental School. By Wilfred E. Alderson, M.D. (Durham), M.S., B.Hy., D.P.H., Honorary Physician, Newcastle-upon-Tyne Dispensary; Senior Honorary Anesthetist, Newcastle-upon-Tyne Dental Hospital; Lecturer on Dental Anesthetics, Newcastle-upon-Tyne Dental School. Price $1.25. New York: William Wood & Company, 1911.

This is one of the most recent volumes in the well known "Students Aids Series." Dental students and practitioners will find this a useful little book; and it is refreshing to see the way the author points out the dangers of chloroform. Though brief, the book seems to be thorough; and the tone of the book inspires confidence in the authors.

The Hospital Corps Quiz Compend. A manual for the Hospital Corps, U. S. Army Hospital Corps, National Guard Red Cross Association, and for Students and Practitioners. By Frank C. Griffis, M.D., Medical Reserve Corps, U. S. Army. Price $1.00. Columbus, Ohio: The Edward T. Miller Company, 1912.

This little book seems calculated to be useful to soldiers in the Hospital Corps of the United States Army. It is written in simple language, and is about as concise as is compatible with usefulness. It should also prove serviceable as a First-Aid manual.

Aids to Histology. By Alexander Goodall, M.D., F.R.C.P., Edin., Lecturer on Physiology, School of Medicine of the Royal Colleges; Examiner in Physiology to the Royal College of Physicians, Edinburgh. Price $1.00. New York: William Wood & Company, 1912.

This handy little volume fills a gap in this useful series. It has evidently been compiled with care, and will prove of service to the beginner and also to the more advanced student for purposes of revision. The author is well aware that histology can only be learned with the aid of the microscope, but the present book may often aid a beginner where the larger text-books would only bewilder and confuse him.

Gynecological Nursing. By Arthur E. Giles, M.D., B.Sc. F.R.C.S., M.R.C.P., Surgeon to the Chelsea Hospital for Women; Gynecologist to the Prince of Wales' General Hospital, Tottenham. With 41 illustrations. Price $1.50. New York: William Wood and Company, 1912.

This is the latest addition to the literature on nursing, and it is one of the very best books for nurses that we have seen. The author is well known both as a gynecologist and as a writer. In addition to the purely technical matter, the book gives a sane presentation of many things pertaining to nursing in general. The volume begins with an introduction, which contains an unusually fine address to nurses; the author's ideal nurse is one that we do not often meet, but he assures us that the sketch is drawn from life. This chapter should be read by every nurse; it contains more common sense and kindly advice than we have ever heard or read in the addresses which are usually inflicted on the graduating classes of the training schools. In subject matter and style the volume is excellent, and it will prove of real value to nurses.

Collected Papers by the Staff of St. Mary's Hospital (Mayo Clinic), 1911. Octavo of 603 pages, illustrated. Cloth, $5.50 net. Philadelphia and London: W. B. Saunders Company, 1912.

The present volume includes the papers written by members of the staff of St. Mary's Hospital during the year 1911, which have also appeared in other journals. A review of its contents shows the enormous field of work and activity engaged in by the Doctors Mayo and their various collaborators. The present volume includes papers on the alimentary canal, the genitourinary organs, ductless glands, thorax, and extremities. There are also papers on technique and a few general articles on a variety of subjects. A brief chapter is inserted in commemoration of Dr. William Worrell Mayo, who was the father of the present Doctors Mayo, and prominent in the establishment of the Hospital at Rochester, which has been so ably carried on by his sons and followers. It was his satisfaction to live to the ripe age of ninety years, and to see firmly established one of the greatest surgical clinics in the world.

Society Reports.

PRACTITIONERS' SOCIETY OF NEW YORK.

247th Regular Meeting, Held April 5, 1912.

THE PRESIDENT, Dr. J. W. BRANNAN, IN THE CHAIR.

Case of Paget's Disease of the Bones of the Face.—Dr. ABBE showed a patient with unusual enlargement of the bones of the face. The case was especially interesting because the enlargement had become so great that it seemed to demand surgical interference. The patient had no illnesses until fifteen years ago, when he had an attack of grippe. In 1893 he had an attack of rheumatism which resulted in cardiac involvement. At this time the enlargement of the face and head became noticeable and has since progressed. Enlargement of his cranium compelled him to wear a hat two sizes larger than formerly. His right clavicle was abnormal and was four times the volume of the left and bowed forward. *X*-ray pictures showed that cranial vault was from 1 to 1¼ inches in thickness and showed very irregular hypertrophy with some rarefaction. The change in thickness was due to a deposit of bone under the periosteum on the outer surface of the skull. This was true of all reported cases. The cranial cavity was not diminished. Dr. Abbe said that a brother of the patient had the same enlargement of the flat cranial bones necessitating his wearing a hat of size 8½. This enlargement was mostly in the back half. In both patients the bone was 1¼ inches thick in places. The patient which Dr. Abbe showed had one very distressing feature. This was a great enlargement of the upper jaw. This had resulted in the formation of a solid ivory like mass of bone which completely filled the upper portion of the mouth from the level of the alveolar border and expanded both superior maxillæ with dense bone. This had resulted in lengthening the face very markedly. Both sides were symmetrical. The nasal cavity was not affected. The etiology of the condition was very obscure. Dr. Abbe said that the chief question in connection with this case was the possibility of and the manner in which the growth in the mouth could be removed.

Dr. BRYANT thought the case a most interesting one. He had seen two or three similar cases, but none as severe as the one shown by Dr. Abbe. He thought that the changes in the clavicle were of such a character as to suggest an inflammatory basis. In none of these cases seen by Dr. Bryant was an autopsy obtained. One case had involved the upper jaw primarily and the other after extension from malar bone. He knew of no new cause or method of treatment.

Dr. ABBE in closing said that a number of autopsies had been performed in similar cases. The condition had been confused with acromegaly. In the present case the normal small shape of the sella turcica and condition of the pituitary body as shown by the *X*-ray proved that this was not a case of acromegaly. Examination of the involved bones has shown that the process was a rarefying osteitis with some mucilaginous degeneration. There were always inflammatory changes. It is probable that a very carefully conducted surgical removal of all the superior maxillary hypertrophy will leave a flat roof to the mouth and vast improvement in general appearance.

The Falling Sickness.—Dr. C. L. DANA showed a patient illustrating what he said could be strictly called "a falling sickness." Falling sickness was the name usually given to epilepsy, but there was, the speaker stated, a form of falling sickness which was strictly entitled to be so called because the trouble was characterized by "falling" alone, with no other attendant symptoms. The persons who showed this symptom dropped to the ground and immediately got up again with usually no feeling of vertigo or faintness. There was a sudden giving way of the legs which crumpled up under the patient and he would drop to the knees or upon the buttocks. Attacks of this kind did very rarely occur as a form of *petit mal*. The speaker stated that such sudden falling also occurred in paralysis agitans, in locomotor ataxia, and in persons with bradycardia as part of the phenomenon of the Stokes-Adams symptoms. The patient presented to the society had the following history: William P., aged 8. The boy came of healthy parents and was a bright and intelligent child; went to school and kept up with the boys of his own age. Had been healthy as a baby and had begun to walk about the usual time; but from the very beginning of his walking life he had had at times attacks of falling, such as he still suffered from. In the attacks the legs suddenly gave way and he dropped rather forcibly to the ground, bruising his knees and often bruising his hands. He was not unconscious or clouded at all, though at times he said he was dizzy. He would pick himself up at once and walk along, then perhaps fall again. These falls occurred so frequently that some one had to accompany him when he went on the street and take him to school. The attacks occurred in the house when he was standing quietly as well as on the street. He had never any phenomena of this kind when lying down. The attacks occurred many times a day now, and the boy went to the office with bruised legs and bruised hands, owing to the falls. On examination he was seen to stand in a cerebellar attitude, the head bent a little to the left side, and the trunk slightly inclined to the right. He walked with a curious limp, carrying his right leg stiffly as though it were wood and he were afraid to bear his weight upon it. It was the right knee which he said gave way when he fell. He could run, but was liable to fall in doing so. He sometimes fell when standing quietly. He swayed somewhat when he closed his eyes and put his feet together. He could not stand on one leg with his eyes closed. He could not walk a straight line well. He was mentally bright. His cranial nerves, including the optic, were normal except that he had a slight lateral nystagmus. He had no headache or vomiting. There was very slight trouble with the sense of hearing and the caloric tests of the auditory nerve brought out a strong nystagmus. He had no actual weakness, no paralysis or atrophy, the knee and ankle jerks are present and equal. He had no hypotonia, no anesthesia, either cutaneous or deep, though he did have some ataxia of the legs, especially the right. Speech is normal. The blood is normal; Wassermann negative. Spinal fluid negative. He was well nourished and well developed. Intestinal carbohydrate fermentation was very excessive (12 per cent.). The right hand and arm were very distinctly larger than the left, the left leg a little larger than the right. The speaker interpreted these attacks as a form of "cerebellar fit" and thought that the boy had a lesion perhaps in the form of a sclerosis or congenital defect in the left lobe of the cerebellum. Dr. Dana also reported a case of what he termed "psychic" or what some would call "hysterical" falling sickness. Mrs. B. O., aged 33, no children, came of a healthy family and was healthy as a girl until she was seventeen. At that age, after finishing school and working very hard in teaching, she had what was called "nervous prostration" and had to give up her work for six weeks. She has been married for eight years. Has had no children. She had been in good health, though not strong. Three years ago she began to have sudden attacks of falling while walking along the street. Her knees would give way and she would drop suddenly to the ground without any feeling of dizziness, faintness or unconsciousness. She would get up at once but would perhaps at once fall again. At times the falls were repeated many times and she would be obliged to stop walking altogether for a time. The attacks were more likely to occur if she was excited or nervous and then she sometimes could not stand at all. On the other hand, she sometimes fell when getting out of bed in the morning under no excitement. After one or two miles when she got fatigued she was also apt to have the falls. During the last three years there had been a period of about three months when she went without the attacks. Her life was regular and quiet at home, but she had been under a strain from loss of members of the family. Her mind was clear. She slept well and had no hysterical seizures or stigmata. Physical examination showed nothing objective. The cranial nerves were normal, no nystagmus or labyrinthine changes. There were no changes in the reflexes. There was lack of steadiness in walking a line or standing with the eyes closed. In the attacks, as she described them, there was apparently giving way of the knees without any pain or any conscious sensory disturbance. The examination of the knees and limbs showed no defect of the articulations. Dr. Dana interpreted this as a kind of mental "tic" affecting the legs instead of the face, neck or hands.

Dr. KINNICUTT asked if there was not an atrophy of the muscles of the right leg, as on superficial examination it seemed distinctly smaller than the left.

Dr. DANA said there was a distinct difference in hands and arms, there was also some difference in the legs but less marked.

Still's Disease.—Dr. VIRGIL P. GIBNEY reported a case of this affection. (See page 93.)

Dr. BRYANT said that he had had no opportunity to observe cases as young as those referred to by Dr. Gibney. The *x*-ray pictures shown had not presented the characteristics of osteoarthritis.

Dr. MEARA asked how frequently cases of Still's disease were seen in New York City. During his five years' ser-

vice in the children's wards at Bellevue he had seen one typical case; in this there seemed to be a distinct reaction between the symptoms of arthritis and the lymphatic glands. During the exacerbations of the joint disturbance the glands were distinctly enlarged. They became smaller on the subsidence of the joint involvement. In this case the spleen and liver were enlarged. There was no tuberculin reaction. There was some blood reaction. Dr. Meara then described an adult patient at Bellevue who had a chronic process involving the small joints as well as wrists and knees. He had marked enlargement of cervical, epitrochlear, axillary and inguinal glands. He had a fairly continuous temperature of 101°. His Wassermann and tuberculin tests were negative. No focus of infection was found. Salicylates produced no results. Potassium iodide, however, gave prompt relief from pain and temperature dropped to normal. The glands continued enlarged. This case was cited because of the similarity to the symptom complex, called in a child Still's disease. He asked for the citation of similar cases of arthritis in adults with marked glandular involvement. No one present recalled such a case.

Dr. Roberts said that Still, in one of his communications, described cases which had improved after an attack of measles or pertussis.

Dr. Gibney said that glandular enlargement in his experience had not been a feature of osteoarthritis in adults. In children arthritis differed from the atrophic forms so common in adults. There were frequently two to five cases of multiple arthritis in the wards at the same time at Ruptured and Crippled Hospital. Most of these cases were of the inflammatory type, but some were not. The cause was obscure and metabolic studies should be done on them.

Dr. Kinnicutt said that he had seen several cases similar to that shown by Dr. Gibney and they should be regarded as instances of the disease described by Still. In none of them had there been improvement under treatment, in fact they had progressed from their inception, leading to permanent disablement. Thymus gland, however, had not been used. He agreed with Still's opinion that several distinct joint affections in children had been described under the name of rheumatoid arthritis, but that they permitted of differentiation by careful study. There was a class which practically corresponded with the rheumatoid arthritis of adults; a second, in which the lesions were similar to those of chronic rheumatic arthritis; and finally a group which could easily be differentiated from the two former ones. In this group there was a general enlargement of the lymph nodes, also of the spleen and a multiple enlargement of the joints. There might be a moderate effusion, but the lesion seemed to be largely pariarthritic and radiograms confirmed this impression. They showed the cartilage to be preserved, an absence of osteophytic changes and eburnation of bone. The recently reported improvement in some of these cases through the use of thymus gland suggests that the underlying cause may be metabolic rather than microbic in character.

The Prophylactic and Therapeutic Value of Fresh Air in Schools and Hospitals.—Dr. John W. Brannan read this paper. He said that the title of the paper did not fully express what he wished to talk about, for what he had in mind was not so much the air within the school and within the hospital as it was the absolutely pure fresh air to be found just outside their walls. Not all of our school children nor all of our patients can be taught or treated in the open air, but a very large proportion of those who need it most can enjoy this privilege, and it should be our duty as physicians and guardians of the public health to see that they get it to the largest possible extent. Those who must remain indoors should receive the maximum amount of fresh unaltered air that can be admitted through open windows and transoms. It was a long time after the discovery in 1882 of the bacillus of tuberculosis by Koch, before the outdoor treatment of pulmonary tuberculosis became thoroughly established. But many years before 1882 tuberculosis of the bones and joints and glands in children, known probably as scrofula, was treated in the open air. The hospital at Berck, on the coast of France, was established by the city of Paris in 1861, the French believing that this form of tuberculosis was favorably influenced by the air from the sea. Even long before this date, in 1797, a hospital was founded by two English physicians at Margate, on the coast of England for scrofulous disease in adults as well as in children. This was the only institution of the kind in England, but on the continent there were between 75 and 80 marine sanatoria, situated on the Baltic, the North Sea, the Atlantic Ocean, the Mediterranean and the Black Sea. The original municipal hospital at Berck had been followed by several large private institutions, so that there were now at Berck between two and three thousand beds for children with surgical tuberculosis, about half of them maintained by the city of Paris, the others supported by private endowment. In 1904 the Association for the Improvement of the Condition of the Poor of New York, impressed by the favorable results obtained at Berck, decided to establish a small hospital for children with surgical tuberculosis at Sea Breeze, the Summer Home at Coney Island, which had been maintained for many years by the Association for the children of the tenements of the city. The number of beds was restricted to forty-three, but now that the City had finally purchased a part of Rockaway Beach there was reason to expect that a new hospital, with one hundred and fifty beds, would be constructed and completed in the course of the next two years. What had been accomplished at Sea Breeze was probably known to all present, for though the hospital was modest in size, its light had not been hid under a bushel. What he had seen at Sea Breeze during the past eight years had led him to urge that not only our patients with pulmonary tuberculosis, or with surgical tuberculosis, should live in the open air, but that all of our patients, whatever their disease might be, and all of our school children, whether predisposed to tuberculosis or not, should be placed in an atmosphere approximately the same as that out of doors.

At Berck, as at other European seaside sanatoria, the children passed the day on the beach, or on balconies open to the air and sunshine. This régime was adopted at Sea Breeze, and in the eight years since the opening of the hospital there had not been a day, in all seasons and in all weathers, that the children had not been in the open air. This applied to bed cases and up cases alike. At night the windows of the wards were wide open throughout the year. In the warm season the sashes of the windows were entirely removed. From April to November about one-third of the children, as many as could be accommodated, slept on the open porch. Throughout the summer months the ambulant children bathed in the ocean every day, and the nurses had repeatedly called attention to the rapid closing of sinuses under the influence of the sea water. During school hours the children were in a room with open windows or in a tent open on all sides, a teacher and a kindergartner being supplied by the Board of Education. The good results obtained with the children at Sea Breeze were so uniform and so striking that it was decided to provide open balconies in all the hospitals then in process of construction in the department of Bellevue and Allied Hospitals. Every ward had at least one balcony attached to it, so that every patient, whatever his disease, might have the benefit of the outdoor air which in the past had been thought necessary only for tuberculous patients. In addition to the balconies there were large wide loggias at Bellevue and roof-gardens and roof-wards on all the hospitals. Gradually storm sashes and louver windows were being added to the balconies so that even in the winter the patients could be moved out of doors, one or more sides of the balconies being always open for the free entrance of the outer air. It was unnecessary to emphasize the stimulating effect of this treatment upon patients who under ordinary hospital conditions were confined to more or less poorly ventilated wards. It was not easy, however, to express this effect in figures or in percentages of recovery. In one disease, the acute pneumonia of children, an attempt had been made to reduce the results to figures. Previous to November, 1908, the children with pneumonia were cared for in a large sunny ward in the old building. The ward was fairly well ventilated, but there was no opportunity for outdoor treatment. After moving into the new building it became customary to place the children on the balconies for three or four hours a day, unless the weather was too stormy. The good effects of the fresh air were so noticeable that in January, 1910, it was decided to place the patients on the balcony as soon as the diagnosis of pneumonia was made, and to keep them there throughout the twenty-four hours, and this practice had continued up to the present time. It was noted that the patients, with rare exceptions, improved in all their symptoms, especially during the winter months, but no comparative study was made until a few weeks ago. The results of this study were as follows: From January, 1904, to November, 1908, 274 children (one year of age and over) were admitted to the hospital, and of these 69 died, a mortality of 25.2 per cent.; in the second period, from November, 1908, to April, 1912, 391 children (one year of age and over) were under treatment, of whom 42 died, a mortality of 10.7 per cent. No investigation had yet been made of the children under one year of age, nor of the adult patients in the hospital, but it was believed that the results were approximately the same.

The observations of Dr. John Howland, the attending physician in charge of the children's service, and his assistant, Dr. B. Raymond Hoobler, apparently showed that this remarkable result of the outdoor treatment was largely due to the increased blood pressure caused by the fresh cold air. As these studies had been published, the reader did not refer to them in detail, but simply stated that the rise of the blood pressure out of doors was attributed by these observers, to the reflex stimulation of the vasomotor centers by the action of the cold air on the skin of the face and the mucous membrane of the nose. Infants under one year of age were also placed in the open air as soon as the diagnosis of pneumonia was made, and adult patients were treated on the balconies or in a room with the windows open so that the temperature approximated that out of doors. These patients uniformly did well, but no statistical study had been made of the results. The effect of the cold air in quieting the restlessness and delirium of pneumonia, especially in alcoholic subjects, was very striking.

Maternity cases were removed to the balcony in from four to seven days after delivery; during the warmer months within 36 hours in some instances. The good effects were evident to all, and particularly to the women themselves. The nurse in charge reported that the patients slept better and called for less attention than when in the ward. A week or ten days (and nights) outing on a Bellevue balcony was not a bad substitute for Lakewood or Atlantic City.

Dr. Gregory, the hospital alienist, reported that the effect of open air upon the acute insane was very beneficial, especially in the excited and restless. It had a quieting influence and induced sleep. The same was true of the alcoholic patients, of whom there were thousands in the hospital annually. The fresh air and oxygen seemed to furnish the stimulation which they greatly needed, so that they ate and slept well. It had been Dr. Gregory's experience that if alcoholics were kept in the open air they would recover much sooner than if kept in the wards. The tremulousness and anorexia and mental depression disappeared very quickly. In functional nervous diseases the value of the open air treatment was generally recognized. It induced sleep, improved the appetite, and supplied the general stimulation which patients of that class required. Patients after severe operations gained rapidly when taken out of doors. In critical cases the stimulus of the fresh air often seemed to turn the tide. The patients themselves were prompt to show their gratification, especially the women, using the words "fine," "lovely," "splendid," and "very nice" in expressing their feelings.

Passing on to the consideration of the open-air schools, the reader said that they could be divided into three groups, first, those for children with pulmonary tuberculosis; second, those for children who are anemic, underweight, and illnourished, and hence considered to be especially predisposed to tuberculosis, and third, those for normal school children who are neither tuberculous nor predisposed to tuberculosis or any other disease. The open-air school movement began at Charlottenburg and was followed in 1907 by the outdoor school at Bostall Wood in the outskirts of London under the auspices of the London County Council. Other schools were soon established in various parts of England, of which those at Bradford and Sheffield are perhaps the best known. In January, 1908, the movement spread to the United States. In Germany and in England structures especially designed for the purpose were erected for the children. In this country we had been content as a rule to make use of buildings already in use, either by selecting a room facing the south and altering the windows, or by covering and partially enclosing a portion of the space on the roof. The first school in the United States, with the exception of the hospital school at Sea Breeze already referred to, was opened in Providence. This was followed closely by the Franklin Park School in Boston. The Providence school was in an abandoned schoolhouse from which a portion of the south wall was removed and replaced by windows which could be trussed up to the ceiling. The class in Boston was on the roof of a building built for a refectory in a public park. It was freely open on all sides; protection in stormy weather was secured by curtains which could be dropped as desired. The results obtained in these schools were so satisfactory that they were soon followed by the establishment of similar classes in Hartford, Chicago, New York, and other cities. These schools varied greatly in their construction and arrangement, but they all agreed in supplying fresh air in abundance to the pupils. In Hartford the class was held in a tent, in Chicago and in New York some of the classes were on the roofs of school or hospital buildings. In the Graham School in Chicago the fresh air was obtained simply by raising the windows of an ordinary school room. Two of the New York schools were of especial interest, being located on the upper deck of old municipal ferryboats. Most of these classes were for tuberculous children who had been excluded from the public schools. The régime was the same in all—life in the open air, nourishing food, rest in bed after dinner, and the systematic use of gentle exercises. The results also were practically the same in all—gain in weight, disappearance of the physical signs, and improvement in general condition, both physical and mental. As an instance of these good results, the teacher of the class on the Gouverneur ferryboat reported that of 37 children who had been in the class for periods varying from six months to a year, 30 had been readmitted to the public schools by the physicians of the Board of Education. It should be added that the pupils had not only regained their health, but had also kept pace in their studies with the other children.

Dr. Brannan then described the second group of open-air schools, the classes for anemic children established in the public schools by the Board of Education of New York. The children in these classes had no physical signs of disease, except enlarged glands in some cases, but they were anemic, underweight, and illnourished, and many of them from tuberculous families. The first class was opened in April, 1910, in public school No. 21, in Mott street, the center of the congested Italian quarter. Twenty such classes had been authorized by the Board of Education, and at the present time eight were in successful operation in various parts of the city. The same routine was followed as in the schools for tuberculous children. The food was provided by the committee on tuberculosis of the Charity Organization, a private society, all other expenses being met by the city, through the Department of Education.

The results in all the fresh air classes were excellent. During the first winter the children in the Mott street school gained on an average 6 pounds apiece, with a corresponding improvement in all other respects. The increase in hemoglobin was especially interesting; starting at an average for the class of 71 in the autumn, the figures reached 85 in the spring, whereas a control class of normal children in the same school declined from 87 to 81 during the same period of time. At the end of the school year the twenty-one children had so improved that they were returned to their former classes and a new group of anemic children took their places. Dr. Doty, the superintendent, reports that practically all the children in the school were anxious to join the fresh air class. As the cost of the extra food was considerable and seemed likely to limit the number of open air classes, it was decided to lessen the amount of food in the new classes and in some instances no extra feeding at all had been furnished, the children having only the usual dinner provided at home. As far as could be judged by a few months' trial, the children in these later classes were doing nearly as well as in the original class of school 21.

The third group of open-air schools, those for normal children in the public schools, was in some respects the most interesting and full of promise for the future. Having demonstrated that pure air fresh from outdoors could be given not only with safety but with great benefit to school children who were tuberculous or whose health was otherwise impaired, the next step was to give fresh air to all school children. One such school was established last autumn on the roof of the Horace Mann School and had been in operation throughout the past winter with eminently satisfactory results. Another class was opened a few weeks ago in public school No. 4 at the request of a number of parents of the children. With the permission of the Board of Education the room was cut off from the ventilating and heating system of the school building and the windows were kept open as in the anemic classes. The children received no extra food, as the parents were well able to provide for them at home. It was too early yet to expect results, but there could be no doubt that they would be the same as in other cases. The chief interest, however, attached to these last schools lay in the evidence they afford that the public, and parents in particular, were beginning to appreciate the value of fresh air for their children during school hours and were preparing to demand it of the school authorities. In Chicago and other cities the movement for fresh-air schools for normal children was spreading so that we might look forward to the day when all children would be taught in the open air.

In conclusion the speaker referred to Dr. Rollier's hospital at Leysin, Switzerland, where children with surgical tuberculosis are exposed absolutely naked to the sun throughout the year. As a result of this heliotherapy the

children became black and with the formation of pigment in the skin the cure progressed, so that at the end of a year the disease was arrested with complete restoration of function in the joints affected.

Dr. THOMPSON warmly seconded Dr. Brannan's efforts to get the school children and patients "back to Nature." He said there were two methods of estimating the fitness of air to breathe, namely the physical and the physiological. Of these the physiological is the true method, and he presented charts prepared by Dr. R. F. Hoobler in his wards to illustrate graphically the rate of metabolism in foul and fresh air respectively, and also the improvement in blood pressure which results from placing patients with pneumonia and other respiratory diseases in the outdoor air. The rate of metabolism improves about 20 to 30 per cent. in fresh air, and the blood pressure may rise 10 to 20 mm. or more. Dr. Thompson felt that a constant temperature in ward air usually means lack of air circulation, and that the modern humidity standards are absolutely fallacious as an index of the fitness of the air for breathing, and he deprecated the common practice of supplying schoolrooms and wards with superheated or "canned air."

Dr. MEARA said he was glad to testify to the value of the open-air treatment. Eight years ago there was no provision in Bellevue for such treatment. When the children were moved from the fifth floor in the new pavilion there were such facilities and the benefit had been marked. Dr. Meara had noticed the effect on blood pressure in the outer air and thought that it was due to the action of the cold air on the face and nasal mucous membrane, affecting the circulation reflexly. On the warmer days blood pressure did not show so much response. He thought Dr. Brannan's paper extremely interesting and instructive.

Dr. GIBSON said that the surgeons had long appreciated the therapeutic value of fresh air. He considered natural ventilation much superior to the elaborate inside systems. Dr. Gibson had been disappointed in the results obtained by fresh air in aggravated surgical cases of bone tuberculosis in adults. Especially had his patients failed to get much benefit from the Adirondacks.

Dr. GIBNEY felt that thanks were due Dr. Brannan for having brought the matter of fresh air before the Society in so thorough a manner. He was familiar with the great benefit which children with bone tuberculosis derived from fresh air seaside treatment.

Sir BERTRAM DAWSON said that a certain amount of this work had been done in England and that he could testify to its great benefits. In outdoor schools the common cold was no longer a feature of school life as it had been in the closed schoolroom. The children and the families as well seemed to improve not only in general health but in moral health. He regarded the open window as having unmistakable advantage over any inside system of ventilation. In a large convalescent home to which he was attached contagion had been spread by the ventilating system. The only ward which had escaped the epidemic had been one from which the artificial ventilation system had been cut off and the open window relied on for ventilation. The truth of the contention that artificial ventilation was harmful had been demonstrated by the vastly more luxurious growth on culture plates placed at inlets than those placed in other parts of the ward. He thought that partitions betweens different parts of the ward helped to limit the spread of disease.

Dr. KINNICUTT said that the charts of the cases of pneumonia in his service at the Presbyterian Hospital showed that the effect of dry cold air was to raise the blood pressure.

Dr. BRANNAN said that he was under the impression that someone had recorded results which showed that there was no marked rise of blood pressure when adult patients were exposed to fresh air.

Dr. ROPER said that the results of work done by Dr. Barringer at Hudson Street Hospital showed that in normal adults exposure of face to cold air produced but slight rise in blood pressure. This persisted for a variable time. In many cases it returned to normal during the exposure. This variation could not be considered very significant as it had been shown that the blood pressure of the same patients in the ward varied 10 to 15 mm. at regular periods from no discoverable cause. In twelve patients suffering from various infections but two had shown any decided increase in blood pressure on being exposed to cold air. There was no question as to the value of fresh, cold air in treatment of these cases but there was a question whether the blood pressure played an important part. It seemed more probable that the benefit was derived more from other sources, as, for instance, the increased ease with which metabolism was carried on, than from any direct effect on the circulation.

AMERICAN CLIMATOLOGICAL ASSOCIATION.

Twenty-ninth Annual Meeting, Held in Hartford, Conn., June 10-13, 1912.

(Special Report to the MEDICAL RECORD.)

THE PRESIDENT, DR. A. D. BLACKADER OF MONTREAL, IN THE CHAIR.

(*Concluded from page 785.*)

On Some Recurrent Febrile Attacks in Chronic Tuberculosis.—DR. CARROLL E. EDSON of Denver, Col., read this paper. He stated that his observations were purely clinical and that probably all had recognized the condition and could confirm his interpretation of it. To separate clearly and surely the symptoms and signs due to an intercurrent or nonrelated process from those due to the chronic and underlying tuberculosis was as important as it was difficult. Attacks of recurrent fever in tuberculous patients too frequently were not carefully studied or they would be found to have quite another cause than tuberculous reactivity. The picture was often not that of a lighting up of the old process. Often, especially where there was much scar tissue, the only change in the signs was that the formerly coarse, dry râles had become a little sticky. There were no fine râles, no new râles, no evidence of new infiltration or moisture along the border of the old area. This was most suggestive, for almost invariably new activity would show itself at the edge of the previously unaffected tissue. The tongue might be coated or remain clear and the bowels were only sluggish from confinement in bed. There might be some sweating at night. If treated as a simple tuberculous fever by rest in bed, the subsidence was slow and gradual, and it was from one to three weeks before the patient was out again. He had kept notes on this picture and had found that in each case there was a fairly regular periodicity in the attacks, the onsets being from four to six or eight weeks apart and the intervals varying with the severity and duration of the febrile periods, a mild attack being followed by a second a little sooner than a severe one. This similarity to migraine suggested the possibility that the fever was due to an eliminative and not to an inflammatory process. Acting on this theory he had found that by the use of oxidizing aids, salicylates, potash, and purgatives, the attack was shortened. Following out this clue an attempt was made to forestall the attack in one case by giving large doses of salicylate and a purge forty-eight and twenty-four hours before the return. This was partially successful. The recognition of these cases depended chiefly on two factors, the repetition of the attack without adequate cause in cases otherwise under improvement without correspondence of evidence of tissue change to the constitutional signs and upon the regularity of the periods of recurrence. The patient should keep a chart and mark each attack. It appeared that these attacks usually occurred in patients with rather extensive involvement of the pulmonary tissue such as would lead to generally lessened power of oxygenation, in patients who were careful to maintain their nutrition at a maximum and to avoid over exercise. The attacks were not characterized by true migraine and neither were they typical bilious attacks. They apparently were pulmonic in origin and due to accumulated unoxidized pyrogenous material, as was indicated by the prompt and often complete relief obtained when such an origin was made the point of therapeutic attack. During these attacks the patients were put to bed, given a scanty proteid and green vegetable diet, hyperabundance of water, some form of salicylate, and a mild purge. The best results had come from recognizing the nature and cause of the attack and following the indication for a greater amount of exercise in the intervals, and in anticipating each recurrence by proper medication.

Dr. DE LANCEY ROCHESTER of Buffalo, N. Y., said that he had had several cases of recurrent fever in tuberculous patients for which he had been unable to account In these cases, causes other than tuberculosis must be excluded before assigning tuberculosis as the cause. There were several cases of sinus disease periodical in occurrence, and it was only by the most careful examination that the cause of the trouble was found. In tuberculous patients discharged from sanatorium treatment the importance of elimination through the kidneys as well as through the skin and bowels should be emphasized. The alkaline diuretics were of value and tended to prevent the recurrence of these febrile attacks.

Dr. J. H. PRATT of Boston, Mass., asked the reader of the paper what evidence there was that this condition was due to suboxidation. The former teachings regarding suboxidation had been overthrown and, if he was not mistaken,

where there was fever and increased pulse rate, studies made with the respiratory apparatus showed that there was an increased oxidation.

Dr. Charles L. Minor of Asheville, N. C., said that there were no doubt a vast number of cases of recurrent fever attributed to tuberculosis which were due to the persistence of intestinal fermentation. An obstinate and exasperating temperature might be kept up by this fermentation which would only clear up under calomel and antiseptic treatment. They sometimes ran across febrile attacks which it seemed impossible to cure. The patients sometimes lay in bed for weeks or months without any effect on the temperature; when they got up the fever disappeared. More work should be done in attempting to find out the cause of these attacks.

Dr. Edward R. Baldwin of Saranac Lake, N. Y., thought that Dr. Edson's paper was a splendid one and showed careful clinical observation, but he would like to know what proof he had of these things. The mere fact that expectoration did not increase in some cases of tuberculosis with fever was not necessarily proof that there was no congestion in the focus of tuberculosis. In nearly all fevers which could not be accounted for in simple ways, the burden of proof rested upon the clinician; he must show that the fever was not due to autointoxication, or anaphylaxis, or hypersensitiveness. The laboratory explantation of the fever occurring during the active stages of tuberculosis would be a form of proteid intoxication which was called anaphylaxis. There was a great deal of proof to show the unstable condition of the patient afflicted with tuberculosis, and fever could be excited by very slight changes in the tuberculous foci.

Dr. Lawrason Brown of Saranac Lake, N. Y., said he had seen a number of these cases of recurrent febrile attacks in chronic tuberculosis cured by prolonged rest in bed; when the attacks came on one after another he sometimes kept the patients in bed two or three months. In studying the blood of patients afflicted with tuberculosis, he had found secondary organisms circulating in the blood stream in a number of instances. He had found the pneumococcus and streptococcus in 20 per cent. of the incipient cases, in 27 per cent. of the moderately advanced cases, and in 55 per cent. of the far advanced cases of pulmonary tuberculosis. Anaphylaxis might be due to the dissolution of these organisms. This was a factor they should take into consideration in their studies of these peculiar attacks of fever which occurred in tuberculosis with no increase in signs. In these cases of recurrent fever the patient should be kept at rest in bed for a period of time corresponding to that of the attack; if the attack lasted three or four days the patient should be kept in bed three or four days and then allowed to get up and about slowly. Whatever the cause of the recurrent fever, the focus of disease was easily disturbed. It was necessary to get the patient in a stable condition. During these attacks exercise should be withheld. When the patients had reached a stable condition they gradually improved and the attacks would soon cease if one gave the patient time.

Dr. Charles L. Minor of Asheville, N. C., said that some of the cases spoken of were distinct cases of tuberculous congestion. While there might be some cases of fever of non-tuberculous nature, there was no doubt in his mind but that many of them were due to the tuberculous process.

Dr. J. H. Elliott of Toronto, Canada, said there were two classes of these cases. In some there was practically no increase in expectoration and a careful examination of the chest would show slight changes in the adventitious sounds. These were almost closed cases. In cases where the expectoration was not increased the recurrent attacks of fever were lessened by the use of calomel or podophyllin or some purgative medicine. In cases where the expectoration was increased a satisfactory procedure had been the use of the autogenous vaccines; this method was especially useful in the almost closed cases where frequently the attacks were overcome by this means.

Dr. Carroll E. Edson of Denver, Colo., in closing the discussion, said, in answer to Dr. Rochester, that they must first assure themselves that there was no organic lesion elsewhere to account for these attacks; an unrecognized sinus condition would account for the concomitant symptoms. With regard to the question of suboxidation, that was a matter to be left to the laboratory worker, as the man who was practicing medicine had no time to deal with such an investigation. Increase in temperature and pulse rate was accompanied by an increased oxidation rather than a suboxidation. In regard to Dr. Baldwin's contention that the lack of expectoration was not necessarily concomitant with the tuberculous process, that was unanswerable. With regard to Dr. Brown's remarks, proteid retention was of course one of the theories and it was quite as likely to be correct as his own. With regard to the use of the vaccines, he did not think they were called for in this type of cases. Dr. Edson said he would yield to no man in urging on the patient the importance of prolonged rest, and rest in bed, when there was a tuberculous fever and inflammatory activity. He had kept patients in bed as long as eleven months at a stretch and had met with success. There was another type of cases due to a lack of secreting power and the burden of proof in these cases lay with the clinician. There would be a little flaring up and probably a protein anaphylactic phenomenon. Ninety-nine out of a hundred cases he believed to be of this nature. The assumption was that these cases were of a tuberculous nature. During the attacks these patients were not permitted to walk; they could do so, however, between the attacks when the temperature was normal or nearly so.

Report of Two Cases of Recurrent Laryngeal Nerve Paralysis Complicating Mitral Stenosis.—Dr. John D. Thomas of Washington, D. C., read this paper. He reviewed the very complete study of this condition made by Fetterolf and Norris last year, from whose conclusions it seemed evident that cases of recurrent nerve paralysis should be considered and classed, not necessarily as following or complicating mitral stenosis alone (though this was the lesion most often causing it), but should include any of the cardiac lesions which brought about the same pathological anatomical condition, excluding of course diseases of the vessels, as aneurysms. After reviewing some of the cases reported in the literature, he called attention to a condition which was present in both of his cases and which from a study of the cases reported was evidently present in several of these, that was, insufficiency of the pulmonary orifice. In the majority of these cases the insufficiency was what might be called relative, just as occurred at the tricuspid orifice in loss of compensation of the heart. This condition was a safety valve action just as was seen in the relative tricuspid insufficiency. In one of the writer's cases the very evident alleviation of symptoms became more and more noticeable as the lesion of the pulmonary valve became more and more marked, until at the present time, when the pulmonary lesion was the predominant note upon auscultation, the patient was in comparative ease. The same condition in insufficiency which he had noticed in two other cases of mitral stenosis also showed this same temporary alleviation of symptoms. This was a more common lesion than was supposed and if they were on the lookout for it they would find it oftener, particularly in the terminal stage of mitral stenosis as well as sometimes of insufficiency. The lesion with which this condition was most often confounded was aortic insufficiency, but a careful examination of the arterial system and other cardinal signs of aortic insufficiency would eliminate this lesion. Some of these cases which had come to autopsy had shown certain congenital defects which were not recognized clinically, and in others such defects were noticed before death. The points of great interest in these cases were: 1. The evident insufficiency of the pulmonary orifice. 2. The seeming temporary improvement of symptoms, particularly in one case, as this insufficiency developed. 3. The absolute absence of any signs of the only lesion with which it could be confused, namely, aortic insufficiency. 4. The systolic pulsation in the second left interspace.

The Influence of Carbonated Brine (Nauheim) Baths on Blood-Pressure.—Dr. John M. Swan of Rochester, N. Y., read this paper and concluded as follows: 1. Carbonated brine baths had no constant effect on the blood pressure of the human subject. 2. In the cases in which observations were made both before and after each bath the systolic pressure was raised more frequently than it was lowered; so that one might say that the tendency of the baths was to raise the blood pressure. 3. Although there were cases of high blood pressure in which a course of carbonated brine baths had been followed by a lower systolic pressure, there were other cases of high pressure in which the pressure has been higher at the end of the course of treatment than it was at the beginning; in one case 26 mm. higher. 4. Although there were cases of low blood pressure in which a course of carbonated brine baths had been followed by a higher systolic pressure, there were other cases of low pressure in which the pressure had been lower at the end of the course of treatment than it was at the beginning; in one case 20 mm. lower. 5. There was no method of determining in advance whether a given treatment would be followed by an elevation or by a fall of pressure. 6. In the series of eighty-one cases the systolic pressure was higher at the end of the course of treatment than at the beginning in thirty-nine; lower in thirty-four; unchanged in eight. 7. In cases of fibroid

myocarditis the pressure effect was inconstant. In this series of cases the systolic pressure was lowered more often than it was raised; but the pulse pressure was raised more often than it was lowered. It seemed to the writer a dangerous procedure to use a form of treatment in a case of cardiac fibrosis which might be followed by an increase of systolic pressure of 22 mm. or an increase of pulse pressure of 32 mm. 8. In cases of parenchymatous myocarditis the effect of the baths on blood pressure was usually to raise it, but in some cases baths were followed by a reduction of both the systolic and the pulse pressures. 9. In cases of dilation of the heart, cases of hypertrophy and dilation of the heart, cases of mitral regurgitation, cases of hypertrophy of the heart, cases of tachycardia and of aortic regurgitation, the same uncertainty of results was seen, except that in cases of mitral regurgitation the pulse pressure was reduced in every one of the five cases; and in cases of aortic regurgitation the diastolic pressure and the mean pressure were reduced in every one of three cases. 10. In a case of arteriosclerosis, an increase of 17 mm. in the systolic pressure and 23 mm. in pulse pressure might result disastrously. In a case of chronic parenchymatous nephritis, an increase of 9 mm. in systolic pressure and of 22 mm. in pulse pressure might or might not be negligible. In a case of interstitial nephritis, an increase of 50 mm. in systolic pressure could hardly be thought desirable. 11. The reduction of systolic pressure in a case of weak heart can scarcely be looked upon as a favorable circumstance. 12. The benefit in the subjective symptoms in cases of heart disease which followed a course of carbonated brine baths was not dependent on the influence of the treatment on the blood pressure. The conclusions were based on the study of the blood pressure in 81 cases in which courses of carbonated brine baths were administered. In five of the cases blood-pressure observations were made before and after each bath. The blood-pressure observations were made by the auscultatory method, in the recumbent posture. The Stanton sphygmomanometer was used.

The Negro and His Health Problems.—Dr. J. Madison Taylor of Philadelphia presented this communication. He said that the negro problem was one of anthropology, not one of ethics, religion, or variegated opinions. It did involve grave sub-problems of humanity, economics, and common sense. Under no circumstances should it be complicated by emotion. The whole race problem, in the final count, resolved itself into what was to become of the members of an alien people transported, by force and suddenly, to an unsuitable, a hostile environment. Members of this alien race deserved the same consideration as those of any other, no more, no less. They would get it, and all the more readily if partisanship, unreflecting zeal and politics could be kept upon a rational level. Prejudices for and against the negro neutralized each other. They only serve to obscure fundamental issues, producing no good, but only loss of vitality and moral tone in those who entertained them. The question for solution resolved itself into *whether members of a tropical race, evolved through thousands of years in hot countries, whose characteristics have gradually become adapted to local climatic conditions, were capable of flourishing or even surviving in a climate wholly at variance with the circumstances of their racial adaptations.* Another important anthropologic problem was whether a people practically in or near a state of savagery could be expected to become civilized or to conform to civilized standards within the short space of a few hundred years. This was not germane to the present inquiry. If the answer were in the affirmative, then was opened a host of doubts as to the validity of all experience, history, and findings of anthropological science; also complex questions arose as to what would become of the race till Time, the greatest solver of problems, should reveal the answer. If the query above proposed was answered in the negative, we should at once consider what could be done to effect a transference of the negroes to a suitable habitat. Two or more races brought into intimate contact socially and domestically evolved hybrids. All experience showed that hybrids, the product of sexual union of antithetic races such as the white and the black, were inferior to the original stock physically and morally. It was demonstrated by well attested facts that these hybrids of black and white were vastly more susceptible to certain infections; their moral as well as physical stamina was lower than that of either original race. Undoubtedly there were individual exceptions. Hybridism lowered normal defences to degenerative diseases, hence inhibition, the fundamental safeguard, was lessened and degenerative processes than continued with increasingly rapid strides as the alien blood weakened and the stronger prevailed. In America the supply of the original negro blood was limited; no new infusions were to be expected. Meanwhile pure streams of our Anglo-Saxon, Slavic, Celtic, and other blood, infused as they were in the United States with a different but not largely variant group of Latins, Hebrews, and others, were polluted by the negroid blood. However, those who felt alarm at this fact could take comfort from the reflection that it was contrary to all precedent for a tropical race (so entirely unfitted to subsist in a cold climate like ours) to survive more than ten, or at most fifteen, generations. Our subtropical summers might prolong survival more or less.

Election of Officers.—*President*, Dr. Charles L. Minor, Asheville, N. C.; *Vice-Presidents*, Dr. James M. Anders of Philadelphia, Pa., and Dr. C. D. Alton of Hartford, Conn.; *Secretary and Treasurer*, Dr. Guy Hinsdale of Hot Springs, Va.; *Delegates to the International Congress on Hygiene and Demography*, Dr. Thomas Darlington of New York and Dr. Schauffler of Lakewood, N. J. Next place of meeting, Washington, D. C.

MEDICAL SOCIETY OF THE COUNTY OF KINGS.

Stated Meeting Held May 21, 1912.

The President, Dr. Elias H. Bartley, in the Chair.

On the Treatment of Cerebral Hemorrhage at the Time of the Occurrence.—Dr. Frederick Tilney read this paper. He said that the symptoms were usually manifestations of a systemic disease, especially in those cases not due to traumatism. The condition could be divided into three phases: (1) the period of preparation; (2) the period of insult, and (3) the period of paralysis. In the treatment of this condition it was important to arrive at the proper diagnosis, and differentiation had to be made between cerebral syphilis, cerebral abscess, and meningitis. By means of blood pressure examinations and the ophthalmoscope, differential diagnosis could be aided. It was also of importance to ascertain the presence or absence of hemiplegia. Regarding the treatment, if the attack took place elsewhere than in the patient's home, the latter should be allowed to remain in the place where he fell. Movement was absolutely forbidden, the head and shoulders were to be elevated, and the clothing, especially about the head and neck, was to be loosened. If the patient had to be removed to a hospital the greatest of care was to be observed in transportation. Phlebotomy was indicated in cases with a high blood pressure, especially when this was above 250 mm. of mercury. In cases with deep coma 10 to 12 ounces of blood might be removed. In these cases hot mustard foot baths or packs, a tourniquet about both legs, and an ice cap to the head could be applied. The action of the urinary bladder was to be watched and if necessary the patient was to be catheterized. The aim of medication was to reduce the blood pressure; since in the early stage the oral administration of drugs was dangerous, hypodermic medication had to be done. The writer than spoke of certain experiments he had performed a number of years ago, together with Dr. Robert O. Brockway, regarding the efficiency of certain drugs in reducing the blood pressures of hemiplegics. He found that the hypodermic injection of pure distilled water alone was sufficient to cause a rise in the pressure up to 25 mm. of mercury. Thus, he said, in the hypodermic administration of aqueous solutions of drugs in the above conditions, enough of the drug must be given to overcome the effects of the water. Aconitine 1/120 grain caused an initial rise of pressure lasting from five to thirty minutes followed by a drop. He regarded gelsemine hydrochlorate in doses of 1/15 grain as a reliable drug in causing an initial drop in the blood pressure. Aconitine was not to be relied upon. Hypodermic injections were to be continued in order to keep the pressure down, and the aqueous solutions were to be made as concentrated as possible. Nitroglycerin and the nitrites he considered inadvisable as they were evanescent in their action. Tincture of aconite in rather large doses, with the patient carefully watched for toxic symptoms could be administered per os. When the pressure finally reached a low point it could be so kept by careful administration of the tincture of aconite. Delirium and restlessness were to be controlled by bromides or hyoscine. Alcoholics were to be given alcohol in small doses. For persistent vomiting or hiccough, morphine and atropine were to be given, or even lavage was to be done. Sedatives to prevent any motion whatever were indicated. During the first 48 hours feeding was to be entirely fluid, and if necessary per rectum. For the first week he advised a purin free diet. The sick room was to be kept free from all disturbances; ventilation and temperature were to be agreeable. Bowel evacuations were to be encouraged by

cathartics if necessary. In patients with deep coma, bedsores could be prevented by keeping the skin dry and powdered, by applying pads of absorbent cotton to the external genitals, and by the use of air cushions or pads. The mouth and teeth should be thoroughly cleaned. The patients were to be kept in bed for at least three weeks. The paralyzed arm was to be placed in a splint while it was still in a flaccid condition and was to be powdered once daily. Hemorrhages in nephritics might be relieved by lumbar puncture and the removal of 25 to 30 c.cm. of cerebrospinal fluid. Surgery had not proved very successful in this condition.

Dr. WILLIAM BROWNING said that the result in the above condition depended on the skill of the man first called to treat the patient. In the prophylactic treatment for those in whom there was a possibility of cerebral hemorrhage, the coagulability of the blood should be increased by the feeding of gelatin. He said when the hemorrhage occurred there seemed at first to be a systemic shock. During this time there was apparently a cessation of the bleeding and the hemorrhage was reestablished by the patient becoming active again. This could be avoided by the enforcement of absolute quiet until there was a certainty of clot formation. The speaker strongly recommended the use of gelsemine by mouth. The breathing of these patients was to be relieved in order to prevent the occurrence of aspiration pneumonia. He said that patients should be allowed to get out of bed within a week or so, as there was a tendency for them to become bedridden.

Dr. ARTHUR C. BRUSH said that first one should be certain of the diagnosis as to whether the case was one of embolism or thrombosis. Then the patient was to be left alone in the correct position. The speaker believed in the reduction of the blood pressure by means of bleeding. Vomiting could best be restrained by morphine and atropine. It was all right to take the blood pressure and to perform lavage, but one did not always have the apparatus at hand and as everything had to be done rapidly, one had to get along with the material available.

Dr. TILNEY closed the discussion by remarking that the differential diagnosis had to be made within the first few hours. This was an important factor in the treatment. He said that he recommended gastric lavage only in those cases in which the vomiting was persistent.

On the Recent Epidemic of Sore Throat.—Dr. STEPHEN H. LUTZ reported 21 cases of various complications and sequelæ of sore throat that he had observed since November, 1911. His experience with vaccines in the cases of otitis and mastoiditis was very favorable. He believed that the source of the throat infections might have been due to the milk supply, as 12 of the cases which occurred at one time received their milk from the same dealer. He highly recommended the use in these conditions of urotropin in doses as high as 120 grains per day.

The Destruction of Vesical Papilloma by Means of High Frequency Cauterization.—Dr. BURTON HARRIS said that tumors of the bladder were more frequent than was supposed. He had seen in all 17 cases, 5 of which were observed in 1911. The diagnosis of papilloma of the bladder was easily made with the cystoscope. The growth appeared as a glistening white or brownish white mass, with long branching processes like seaweed. Virchow had termed them vascular papillofibroma. Although they were considered as benign growths, recurrence in the wound or at the original site of growth was invariable. The earliest symptom to be noted was hematuria. Later, frequency and urgency of urination, with pain, made their appearance. There might be periods of quiesence. In every case of unexplained hematuria the writer advised cystoscopy. Regarding treatment, the reader said that on account of the danger of self-transplantation supramubic operation was futile. The transurethral method of Nitze proved fairly successful in the originator's hands, but was a failure generally. The high frequency current, however, was used with success. This the speaker said was a painless method and the introduction of the electrodes into the tumor tissue was followed by blanching, disintegration and charring of the growth. The number of applications depended on the toleration of the patient and on the size of the growth. The duration of each application was about one minute. Anesthesia was contraindicated. In one case he had successfully checked a hemorrhage by inflating the bladder with air and then applying the current. The frequency of the sittings at first was every 7 to 14 days, the interval being made greater as the treatment progressed.

Dr. PAUL M. PILCHER remarked that he had seen several cases of papilloma of the bladder operated upon with bad results. He had used the method of fulguration treatment of papillomata with good results.

Books Received.

The MEDICAL RECORD *is pleased to receive all new publications which may be sent to it, and an acknowledgment will promptly be made of their receipt under this heading, but it must be with the distinct understanding that it is under no obligation to notice or review any publication received by it which in the judgment of its editor will not be of interest to its readers.*

MANUAL OF CHEMISTRY. By W. SIMON, Ph.D., M.D., and DANIEL BASE, Ph.D. Tenth Edition. 774 pages; illustrated; cloth. Lea & Febiger, Publishers, Philadelphia.

THE LOCAL INCIDENCE OF CANCER. By CHARLES E. GREEN, F.R.S.E. 36 pages; illustrated; paper; price 1/ net. Wm. Green & Sons, Publishers, Edinburgh and London.

THE STRUCTURE AND DEVELOPMENT OF GROWN GALL. By ERWIN F. SMITH, NELLIE A. BROWN, and LUCIA MCCULLOCH. 60 pages and 109 plates; paper. U. S. Department of Agriculture, Publishers, Washington.

FORTY-EIGHTH ANNUAL REPORT OF THE TRUSTEES OF THE BOSTON CITY HOSPITAL. 193 pages; paper. City of Boston, Publishers.

CORNELL UNIVERSITY MEDICAL BULLETIN. Vol. I, No. 4. STUDIES FROM THE DEPARTMENT OF SURGERY, INCLUDING GENITOURINARY DISEASES, ORTHOPEDICS, AND OPHTHALMOLOGY. Cornell University, Publishers, New York.

ASSOCIATION OF AMERICAN MEDICAL COLLEGES. PROCEEDINGS OF THE TWENTY-SECOND ANNUAL MEETING HELD AT CHICAGO FEBRUARY 28, 1912. 88 pages; paper.

TRANSACTIONS OF THE FLORIDA MEDICAL ASSOCIATION FOR THE YEAR 1912. 245 pages; paper.

CHIRURGISCHE TECHNIK ZUR NORMALEN UND PATHOLOGISCHEN PHYSIOLOGIE DES VERDAUUNGSAPPARATES. By Dr. ADOLF BICKEL and Dr. GERHARDT KATSCH. 300 pages; illustrated; paper; price 12 M. August Hirschwald, Publisher, Berlin.

GRUNDRISS DER PSYCHIATRISCHEN DIAGNOSTIK. By Prof. Dr. RAECKE. 188 pages; illustrated; paper; price 3 M. August Hirschwald, Publisher, Berlin.

CLINICAL DISORDERS OF THE HEART BEAT. By THOMAS LEWIS, M.D., D.Sc., M.R.C.P. 104 pages; cloth; price $2.00 net. Paul B. Hoeber, Publisher, New York.

THE ANIMAL KINGDOM. By EMANUEL SWEDENBORG. 398 pages with 10 Plates; cloth; price $3.00 net. Boericke & Tafel, Publishers, Philadelphia.

THE MECHANISTIC CONCEPTION OF LIFE. By JACQUES LOEB, M.D., Ph.D., Sc.D. 232 pages; illustrated; cloth; price $1.50 net. The University of Chicago Press, Publishers, Chicago.

DIGESTION AND METABOLISM. By ALONZO ENGLEBERT TAYLOR, M.D. 560 pages; cloth. Lea & Febiger, Publishers, Philadelphia and New York.

A TEXT-BOOK OF PATHOLOGY. By GEORGE ADAMI, M.A., M.D., F.R.S., and JOHN MCCRAE, M.D., M.R.C.P. 759 pages; illustrated; cloth. Lea & Febiger, Publishers, Philadelphia and New York.

MANUAL OF SURGERY. By ALEXIS THOMSON, F.R.C.S., and ALEXANDER MILES, F.R.C.S. Vol. II. REGIONAL SURGERY. Fourth Edition. 924 pages, with 274 illustrations; cloth. Oxford University Press, Publishers, New York.

CHILDREN—THEIR CARE AND MANAGEMENT. By E. M. BROCKPANK, M.D., F.R.C.P. 250 pages; cloth. Oxford University Press, Publishers, New York.

THE CARE OF THE SKIN IN HEALTH. By W. ALLAN JAMIESON, M.D., F.R.C.P.E. 109 pages; cloth. Oxford University Press, Publishers, New York.

HANDBUCH DER NERVENKRANKHEITEN IM KINDESALTER. By Prof. L. BRUNS, Prof. A. CRAMER, and Prof. TH. ZIEHEN. 980 pages, with 189 illustrations in Text and 3 Plates; paper; price 30 M. S. Karger, Publisher, Berlin.

ZUR PSYCHOPATHOLOGIE DES ALLTAGSLEBENS. By Prof. Dr. SIGM. FREUD. 189 pages; paper; price 5 M. S. Karger, Publisher, Berlin.

DIE VASOMOTORISCH-TROPHISCHEN NEUROSEN. By Dr. R. CASSIRER. 988 pages, with 24 illustrations in text and 24 plates; paper; price 30 M. S. Karger, Publisher, Berlin.

AN ESSAY ON HASHEESH. By VICTOR ROBINSON. 83 pages; cloth; price 50 cents. Medical Review of Reviews, Publishers, New York.

FOR AND AGAINST EXPERIMENTS ON ANIMALS. EVIDENCE BEFORE THE ROYAL COMMISSION ON VIVISECTION. By STEPHEN PAGET, F.R.C.S. 344 pages; cloth; price $1.50 net. Paul B. Hoeber, Publisher, New York.

LANDMARKS AND SURFACE MARKINGS OF THE HUMAN BODY. By L. BATHE RAWLING, M.B., B.C., F.R.C.S. 96 pages; illustrated; price $2.00 net. Paul B. Hoeber, Publisher, New York.

Miscellany.

Aviation in Dreams.—In his new book entitled "The World of Dreams," Havoleck Ellis states "that the sensation of flying is one of the earliest to appear in the dreams of childhood. It is sometimes the last sensation at the moment of death. To rise, to fall, to glide away, has been the last conscious sensation recalled by those who seemed to be dying, but have afterwards been brought back to life. Those rescued from drowning, for instance, have sometimes found that the last conscious sensation was a beatific feeling of being borne upwards. Piéron has also noted this sensation at the moment of death from disease in a number of cases, usually accompanied by a sense of well-being. The cases he describes were mostly tuberculous, and included individuals of both sexes, and of atheistic as well as religious belief. In all the last sensation to which expression was given was one of flying, of moving upwards. In some death was peaceful, in others, painful. In one case a girl died clasping the iron bars of the bed, in horror of being borne upwards. Piéron, no doubt rightly, associates this sensation with the similar sensation of rising and floating common in dreams, and with the feeling of moving upwards and resting on the air experienced by persons in the ecstatic state. In all these cases alike life is being concentrated in the brain and central organs, while the outlying districts of the body are becoming numb and dead. In this way it comes about that out of dreams and of dream-like waking states, one of the most permanent of human spiritual conceptions has been evolved. To float, to rise into the air, to fly up to heaven, has always seemed to man to be the climax of spiritual activity. The angel is the most ethereal creature the human imagination can conceive. Browning's cry to his lyric love, half angel and half bird, pathetically crude as poetry, is sound as psychology. The prophets and divine heroes of the race have constantly seemed to their devout followers to disappear at last by floating up into the sky, like Elijah, who went up 'by a whirlwind into heaven.' St Peter once thought he saw his Master walking on the waves, and the last vision of Jesus in the Gospels reveals him rising into the air. For it is in the world of dreams that the human soul has its indestructible home, and in the attempt to realize these dreams lies a large part of our business in life."

Benjamin Rush on Medical Fees.—On February 7, 1789, Benjamin Rush delivered a lecture at the conclusion of his course before the students of the University of Pennsylvania. In this lecture the father of American medicine discussed the duties of the physician. Although the art of medicine has been completely revolutionized in the century and a quarter that have elapsed since Rush stood before his admiring students, the remarks that he made on that remote occasion are equally applicable at the present time. His opinions on the subject of the medical honorarium are practically identical with those entertained by most medical men of today. To H. J. Achard of Chicago one is indebted for a presentation of interesting selections from this address. "When we consider," said Dr. Rush, "the expense of a medical education, and the sacrifices a physician is obliged to make of ease, society, and even health, to his profession, and when we add to these the constant and painful anxiety which is connected with the important charge of the lives of our fellow creatures, and above all, the inestimable value of that blessing which is the object of his services, I hardly know how it is possible for a patient sufficiently and justly to reward his physician. But when we consider, on the other hand, that sickness deprives men of the means of acquiring money, that it increases all the expenses of living and that high charges often drive patients from regular-bred physicians to quacks, I say, when we attend to these considerations, we should make our charges as moderate as possible. Avoid measuring your services to your patients by scruples, drams, and ounces. It is an illiberal mode of charging. Let the number and time of your visits, the nature of your patient's disease, and his rank in his family or society, determine the figures in your accounts. It is certainly just to charge more for curing an apoplexy than an intermittent fever. It is equally just to demand more for risking your life by visiting a patient in a contagious fever, than for curing a pleurisy. You have likewise a right to be paid for your anxiety. Charge the same services, therefore, higher, to the master or mistress of a family, or to an only son or daughter, who call forth all your feelings and industry, than to less important members of a family and of society. If a rich man demands more frequent visits than are necessary, and if he imposes the restraints of keeping to hours, by calling in other physicians to consult with you upon every trifling occasion, it will be just to make him pay accordingly for it. As this mode of charging is strictly agreeable to reason and equity, it seldom fails of according with the reason and sense of equity of our patients. Accounts made out upon these principles, are seldom complained of by them. I shall only remark further upon this subject, that the sooner you send in your accounts after your patients recover, the better. It is the duty of a physician to inform his patient of the amount of his obligation to him at least once a year. But there are times when a departure from this rule may be necessary. An unexpected misfortune in business, and a variety of other accidents, may deprive a patient of the money he had allotted to pay his physician. In this case, delicacy and humanity require that he should not know the amount of his debt to his physician till time has bettered his circumstances." It is suggested by Achard that the only point on which we of to-day would be inclined to differ with Rush is the matter of sending a bill "at least once a year." Most physicians will probably agree that the account should be rendered at least quarterly.—*The Medical Standard*, October, 1912.

The Value of Enterprise.—R. A. Walker states that many physicians become victims of a deadening routine. When they have exhausted their immediate stock of medical knowledge, they rest upon their oars with the comforting conviction that they have reached the limit of medical science and that nothing more can be done. It seems never to occur to them that refractory and desperate cases offer a most appropriate field for experimental therapeutics. Here is the opportunity for breaking new ground and for testing therapeutic theories. The men who have the originality and the self-reliance to rise to the occasion are the ones who contribute to the progress of medical science. "Get out of the rut, read, think, experiment independently; try all things, prove all things, and hold fast to that which is good."—*Virginia Medical Semi-Monthly*, October 11, 1912.

Medical Record

A Weekly Journal of Medicine and Surgery

Vol. 82, No. 19.
Whole No. 2192.

NEW YORK, NOVEMBER 9, 1912.

$5.00 Per Annum.
Single Copies, 15c.

Original Articles.

I. SOME DATA CONCERNING A HUMORAL ETIOLOGY OF SPASMODIC ASTHMA. II. OUTLINE OF TREATMENT IN ACCORDANCE WITH THE FOREGOING.

BY BERNARD OETTINGER, M.D.,

DENVER, COLORADO.

NEUROLOGIST TO THE HOSPITAL FOR THE CITY AND COUNTY OF DENVER AND ST. ANTHONY'S HOSPITAL.

I.

IN 1905, at the Portland meeting of the American Medical Association, the writer propounded a humoral theory to explain certain beneficent effects of methemoglobin-producing drugs in diseases associated with dyspnea.[1] This hypothesis assumed that dyspnea resulted in these conditions from an intoxication due to the presence of an abnormally increased amount of intermediate products of metabolism which the organism could not chemically elaborate, thus failing to prepare them for elimination; furthermore, that these intermediate toxic products, themselves reducing agents of the blood and other tissues, were rendered innocuous by methemoglobin oxidation.*

Four years ago an editorial appeared in the *Journal of the American Medical Association* taking note of the fact that in three fatal cases of anaphylaxis resulting from single doses of diphtheria antitoxin, all the subjects were asthmatics. To-day, because of symptomatic analogies, asthma is looked upon as an anaphylactic phenomenon.† Under these conditions a comparison of mechanism as outlined respectively for asthma and anaphylaxis is herewith submitted. Regarding the latter Hektoen[2] in a recent comprehensive paper on anaphylaxis says: "(1) The present prevailing idea is that anaphylaxis (or allergy) both to portein in cells and to dissolved protein is essentially a humoral process marking a return to the general view expressed by Friedemann several years ago. (2) Friedemann and Isaac, as the result of their experiments, concluded that the first injection of a toxin (in the shape of a foreign protein), resulted in the formation of antibodies which caused rapid splitting of the same protein, if it was again injected, with the formation of toxic intermediate bodies. (3) The same investigators found also that 'when the foreign proteins are introduced parenterally (*i.e.* not through the alimentary tract), they are gradually reduced to urea in normal animals, but in animals treated with protein, the reinjection of that protein is followed by manifestations of anaphylaxis and evidence of protein splitting,'" *i.e.* in animals sensitized to foreign protein the normal production of urea cannot be accomplished. As against the foregoing, the mechanism underlying dyspnea, with or without bronchial spasm, as outlined by the writer included the following, viz., *a* "dyspneic conditions are always manifestations of an inadequate effort on the part of the organism sufficiently to oxidize cell disintegration products. Or, to express the idea from a different viewpoint, there is in the blood, in conditions which result in increased tissue metabolism, an accumulation of basic products which are prepared for further use or for body elimination by oxidation and cleavage processes," and again, *b*, "the interdependent relation, as based upon chemical formulæ, of some of these basic substances (leucomaines) to others of the same class and their final elimination products, has been identified with successive oxidation and cleavage processes, as for instance, those of the best known purin group form a continuous oxidation series with uric acid as the final product from which urea may be attained by cleavage."[1]

To-day the metabolism of anaphylaxis, in the sense of the failure of the organism to reduce foreign proteins to urea, herein permitting accumulation of toxic intermediate products, is discussed in biological terms, viz., of specific reaction between antigen and antibodies with the resultant manifestations of rapid protein splitting. Without a knowledge of antigens, antibodies, or complement, the writer's theory involving the same phase of metabolism could only take cognizance of certain chemical changes pertaining to the problem. The intensive oxidation required to convert the intermediate products of metabolism, in the time of their great increase, into such as the body can eliminate, I assumed could be accomplished by a therapeutic degree of methemoglobinemia. This, for the reason that such intermediate products reduce methemoglobin successively to oxyhemoglobin and reduced hemoglobin, whereas the body tissues can take no oxygen from this more stable blood pigment. The writer therefore has used since 1904 small doses of methemoglobin-producing substances, particularly sodium iodate, in the treatment of spasmodic asthma. In this connection two facts are significant: (1) A number of remedies used empirically in the treatment of spasmodic asthma and which do not depend upon narcosis for their effect, produce in some degree methemoglobinemia, viz., iodine and bromine salts, injections of epinephrin, inhalations of amyl

*One who is interested in this phase of the problem, I refer to the original communication;[3] but reiterate here that although the profession is daily using methemoglobin-producing drugs in therapeutic dosage, the tradition still exists that a drug capable of effecting methemoglobinemia in any degree must be tabooed.

†Meltzer[2] first pointed out the similarity of reaction during attacks of asthma and serum anaphylaxis but the analogy goes further. Immediately after anaphylaxis occurs antianaphylaxis or anergy, the refractory period during which the animal is immune to the same toxin which produced the attack. Every asthmatic immediately subsequent to a severe attack presents clinically a period of antianaphylaxis. At this time he may eat with impunity certain foods he cannot take at any other without initiating an asthmatic paroxysm.

nitrite, pyridin, smoking powders, etc. (2) Experiments on guinea pigs by Anderson and Shultz[5] showed that the most effective way to save animals in whom anaphylaxis had been produced by reinjection of foreign proteins was by the injection of epinephrin and later of chloral urethane both methemoglobin-producing drugs. That this good effect was enhanced by simultaneous artificial respiration of pure oxygen is further reasonable evidence that the neutralization of toxic proteins was effected by their oxidation.*

II.

In accordance with the foregoing, the writer submits a rational treatment for spasmodic asthma that has proved useful to him during a period of eight years. The procedure is not a cure-all. Strict attention to details of treatment aside from the giving of medicine is demanded at all times. Furthermore, the treatment is greatly efficient in uncomplicated cases only. Yet withal, the practitioner will annex some grateful patients in the course of months and years by careful application of this method in dealing with a troublesome affection.

There is little to be said regarding prophylaxis. Experience has taught the writer that aside from local irritants, such as dust and irritating gases and impure air,† there are four conditions which act as exciting causes of asthma, in predisposed persons. These are sudden disturbing emotions, continued anxiety, physical overexertion, and various infections grouped under the head of "colds." The last of these will be without effect if the patient be under the influence of the medication hereinafter described. How far these conditions can be avoided or counteracted will vary. Dominant influencing factors are temperament and conditions of livelihood. In practice the patient is probably visited the first time during an attack. He should be given 10 grains of blue mass (or an equivalent of calomel with soda). The mercurial itself often has the effect of ameliorating the attack in the course of some hours, but if the patient is suffering intensely I do not hesitate to give one morphine and atropine subdermal injection as part of the initial treatment. The use, however, of either morphine or alcohol during treatment is interdicted because both retard elimination. Whether or not morphine is given, several watery stools must be obtained the following morning from a sufficient dose of salts. For constitutional treatment I depend upon sodium iodate, an energetic methemoglobin producing drug. The adult dose is four or five grains given at intervals of four to six hours. Some appropriate nourishment, solid or liquid, is given at the same time. Mixing with the food, the medicine is more easily digested. One grain of caffeine citrate may be added to each capsule. As a rule the mercurial purge given once is sufficient, but may be repeated if the attack is not markedly better in 24 hours. Nightly repetition, however, is undesirable and will be without effect. Still referring to uncomplicated cases, dyspnea persisting in spite of medication, means continued action of an exciting cause. For this reason conditions and manner of life must be carefully investigated in all cases. Medicine alone will cure no case of asthma. In regard to the all-important factor of diet, this must be rigidly supervised, yet the patient need not be starved. No single dietary will suffice, but the following instructions and diet list are handed to each patient and are of service because the latter names certain articles of food which practically all asthmatics must eliminate at least in the beginning of treatment.

INSTRUCTIONS AS TO DIET FOR ASTHMATIC PATIENTS.

The following instructions are necessarily of a general character. Certain articles of food which usually cause no ill effects may produce stomach and bowel disturbance in your case. Return of asthmatic symptoms from such peculiarities, the patient himself must learn to guard against. Also, the patient must be certain what part of his diet, if any, is really at fault; a person may eat meat and potatoes, feel distressed, and think the meat disagrees, when, in fact, the potatoes should have been avoided. Eat heaviest meal at noon. The evening meal must be light, and should not be taken later than six o'clock.

Diet During an Attack: Take only broths at intervals of two to four hours.

Diet for Periods Between Attacks: Eat a variety of plain, coarse foods. Eat enough to satisfy hunger and no more. The patient need not starve himself, yet must remember that overeating cannot be indulged in, no matter what the diet. Soups—May be eaten (must be clear of fat). Fish—Boiled or broiled fresh fish, raw oysters, raw clams. Meats—Chicken, turkey, lamb, mutton, beef, venison (all tender and lean). Vegetables—May eat all that agree, but it will be found that heavy vegetables, *i.e.*

*Lately some German clinicians have pointed out the similarity of the vasomotor disturbance shown by the congested and edematous bronchial mucous membrane of asthma to that of the skin and mucous membrane in angioneurotic edema. In the vasomotor character of some of the clinical manifestations of asthma and the occurrence of dyspnea, localized edemas, urticarias, erythemas, etc., in various neurotrophic affections such as Graves' disease, osteomalacia, myasthenia gravis, etc., we may note a significant analogy. Again, emotional disturbance, so potent an exciting cause of asthma, is always an element in the clinical history of all vasomotor and neurotrophic disorders. Among other observations which bring vasomotor manifestations of asthma in analogous relation to diseases due to disturbed ductless gland functions are the following: *a*, the common experience that fright instantly affects glandular secretion under sympathetic control—the dry mouth—and the same shock inducing vasomotor contraction of like nature—the blanched skin. *b*, Cannon and de La Paz[4] have shown that in the cat emotional disturbance, *i.e.*, fright, is indicative of dominant sympathetic impulses by producing dilatation of the pupils, rapid heart action, erection of the hairs of the back and tail, and inhibition of the stomach and intestines. That the last phenomenon may be due to an increased amount of epinephrin in the blood is rendered possible first, by the experiments of Dryer and others that stimulation of the splanchnics increases the epinephrin content in the blood of the adrenal veins; second, by experiments of Cannon and de La Paz, who produced inhibition in longitudinal sections of intestinal muscle by exposing the same to blood containing epinephrin. This blood loses its effect on standing or if agitated by bubbling oxygen. Now, the relief of the asthmatic paroxysm by epinephrin injection is an established clinical fact, while the symptoms of anaphylaxis is guinea pigs, as shown by Anderson and Shultz[6] was best combated when in addition to injections of epinephrin, artificial respiration of pure oxygen was carried on. The foregoing therefore makes reasonable a sympathetico-humoral conception of anaphylaxis and hence of spasmodic asthma. Also, we can conclude that anaphylactic toxins are rendered inert by an internal secretion, *i.e.*, epinephrin. That this power is not confined to secretion of the adrenals is probable. And, finally, we recognize that not only anaphylactic toxins, as noted above, but also their physiological antidotes are rendered innocuous by means of their oxidation.

†At present we are unable to separate, as exciting causes, air rendered impure by strictly local irritants, solid or gaseous, as against those body emanations, which inhaled and acting chemically, rapidly produce toxins and anaphylactic symptoms. In this respect may be recalled the inability of some persons to be near certain animals, to enter a stable, or remain in a crowded auditorium without experiencing an asthmatic attack.

onions, cabbage, cucumbers, corn on cob, etc., usually must be avoided. Eat few potatoes, or better, none at all. The same may be said of legumes, *i.e.* peas, beans, etc. Bread—Eat only that which is well baked, or the same toasted thoroughly. Eat rice, cereals and eggs (except fried) in moderation. Of the last, not more than one or two at a meal. Eat no raw fruits, but take these as sauces or compôtes. Avoid hot cakes, pancakes, etc., also sweet cakes, pies, and other rich crusts. Avoid nuts, cheese, and any article of diet that experience has taught you produce belching, bloating, passage of gas from the bowels, or other distress. Avoid candy, jellies, preserves, or much sugar in anything, also much salt, much fat and all acids, *i.e.* the diet throughout should be plain and bland, not highly seasoned, nor rich. Drinks—May drink water, tea and coffee—the last two not strong. Avoid cocoa and chocolate. Take milk in moderation only; some patients cannot drink any without digestive derangement. Avoid all alcoholic drinks, especially beer and other malt beverages. Belching of gas after meals or passing of same from the bowels together with a feeling of heaviness, mean fermentation in the digestive tract. When this condition exists it must be corrected before lasting benefit from treatment can be obtained.

It must be understood that with greatest willingness to cooperate with the doctor, the diet cannot be left to the patient's sole direction. One asthmatic who was not doing well, was following instructions with a single exception. He clung to hot cakes for breakfast. Much delving into his dietary was required to elicit the fact. On the other hand, an attack was induced in another patient by eating spinach, which is ordinarily well borne. These examples show the need of careful scrutiny of the patient's selection of foods.

Paradoxical as it may appear, patients do best on the foregoing simple measures applied with thoroughness, although one is often called upon to extend therapeutic efforts. The solution lies in this: The procedures recounted suffice to overcome successive attacks of simple spasmodic asthma until a cure is finally accomplished.* In cases complicated by defective function on the part of the heart, referring here especially to myocarditis, or of the kidneys or bronchial mucous membrane results are quite different. Here treatment, dietetic and medicinal, including herein such special aids of which we may avail ourselves to ameliorate a dominant symptom, such as a racking cough, tenacious sputum, sleeplessness, cardiac exhaustion, etc., will fail to a greater or less extent.

Aside from attacks of dyspnea in diseased conditions of heart or kidneys, characteristic spasmodic asthma may be associated. The treatment heretofore outlined will improve the patient's breathing but relapses recur soon. Why these cases are so little helped by a therapeutic methemoglobinemia, which markedly benefits simple spasmodic asthma cannot to-day be answered satisfactorily. The degree of toxemia is a matter of moment. In asthma with coexistent lesions of the heart or kidneys the patient, with depressed metabolism which cannot furnish physiological antitoxins, is able neither to assimilate or react to the proportionately greater amounts of drugs required to neutralize more profound toxemia. But aside from this, every drug fulfills more than a single indication and a secondary effect may, in a given instance, do harm. Sodium iodate often relieves, temporarily, asthma associated with myocarditis, yet for the latter digitalis (containing methemoglobin producing saponins), is especially indicated. The same sodium salt will not relieve hay fever, although it will ameliorate an accompanying asthma. However, injections of epinephrin (also a methemoglobin producing substance), will often relieve temporarily hay fever, simple spasmodic asthma, and that of myocardial origin.* Asthma complicated by chronic bronchitis while less serious than that associated with cardiac or nephritic degeneration, is nevertheless of a class that only in young persons achieves a cure. Their obstinacy has long been recognized by practitioners who see much of this disease.† The halogen salts like most remedies given for constitutional effect in asthma, stimulate the bronchial mucosa and by increasing an already existing bronchial catarrh are ill suited for treatment of these cases. Injections of epinephrin are of service, but its effect is transient and therefore it must be repeated at short intervals.

Practically then, benefit from the sodium salt recommended is limited to those cases in which asthma appears as yet a functional disturbance. Of course, this does not exclude cases in which bronchial catarrh occurs during the paroxysm. The individual must, however, show recovery from the bronchitis after conquering the asthmatic attack. In young persons even if asthma has recurred from infancy the chances of ultimate cure are good. But the attainment of this happy condition is not confined to youthful sufferers as is proven by like re-

*Because of far greater reliance upon the treatment outlined, mere mention is made of several measures recommended for spasmodic asthma. Between attacks arsenic may be of service. During the attack, until the system is under the influence of sodium iodate, the patient may use the usual smoking powders or inhalants for temporary relief. Pyridin or the contents of an amyl nitrite pearl may be of occasional service. I have never had the heart to urge persistent and volitionally lengthened expirations while the patient is in the throes of agonizing dyspnea, nor have I attempted the effect of mental suggestion under these circumstances. However, I have witnessed the trial of mental therapy by others. Failure was invariable. Cauterization of certain asthma exciting points upon the nasal mucous membrane has resulted in occasional good effect, but since the same are not recognizable visually, their cauterization is necessarily a haphazard matter. I have seen practically no benefit resulting from operations in the nose, done with a view to eliminate peripheral irritation from abnormal growths of bony or soft tissues or to improve respiratory conditions as regards air space. An operation apparently successful in that it has improved palpable anatomical defects, usually leaves the patient in full possession of his asthma. Such experience accords well with a humoral theory for this affection.

*It cannot be said that because each of a number of drugs can produce a methemoglobinemia, they may be indifferently substituted in treatment one for another. Without doubt other affinities, too, of these remedies must decide our choice. The rapid but evanescent relief from dyspnea and vasomotor spasm effect by amyl nitrite or pyridin fumes could not well take the place of the prolonged effect on metabolism of potassium chlorate or the latter of the bromine salts which experience has shown approaches specific effect in epilepsy. Yet substitution of methemoglobin-producing drugs is, to some extent, efficient, as we have seen, and may again be noted herein, that the one vegetable drug which it has been found fills a serviceable place beside the bromides in the treatment of epilepsy is *Solanum carolinense*, a plant which belongs to one of several classes that contain saponin bodies, glucoside substances which produce methemoglobin[1]

†Forty years ago Hyde Salter[6] said: "Such cases are very intractable and from this reason, that we have two diseases to treat, bronchitis and asthma. The asthma is intractable because its exciting cause, the bronchitis abiding, any remedies that are brought to bear upon it are rendered inoperative or merely of transient efficiency."

sults obtained in well preserved individuals in the sixth and seventh decades of life. While the writer has purposely pointed out the limitations of a certain mode of treatment, one may say that in spite of them, cases are not few which will be benefited, provided always that the patient is taught how to care for himself and above all, that the proper diet is rigidly enforced until time discloses his ability to add previously prohibited things to his dietary. A single warning must be voiced. Sodium iodate must not be given to tuberculous patients and especially such as have had hemorrhages. That this contraindication arises solely from the presence of the iodine atom is proven by equally evil effects sustained by the same class of patients when taking any form of this element. Scar tissue is absorbed, cough and expectoration are increased, and hemorrhage is apt to recur.

In conclusion, a word respecting hemoglobin in the urine which a test will disclose as present during the administration of energetic methemoglobin producing drugs. It need cause no anxiety since it is but a transient occurrence. An allied fact is worthy of note, although I am unable to interpret it. Once the writer attempted to counteract the hemoglobin loss by giving iron. A severe attack of asthma supervened in a few hours. Subsequent experimentation in other cases, to learn if this first result was accidental, showed that a chalybeate given to an individual recovering from asthma would bring on an attack with certainty.

To recommend a single drug is equivalent to presenting a specific remedy. As the result of considerable experience it may be stated that sodium iodate is a specific for the paroxysm of uncomplicated spasmodic asthma. Moreover in these cases by repeatedly conquering the attack through measures remedial, dietetic, and withal educational, the cure of this affection, which gives the impression of a vicious metabolic habit, is finally achieved.

CONCLUSIONS.

1. The identity of the mechanism underlying the toxemia of anaphylaxis and spasmodic asthma is attested by many clinical signs.

2. Whether or not the toxic intermediate products of protein metabolism common to both conditions are rendered inert, depends upon the capacity of the organism to reduce them by oxidation and cleavage processes to end products capable of elimination, *i.e.* uric acid, urea, etc.

3. Methemoglobin, being a more stable oxygen compound than oxyhemoglobin, fails to give up its oxygen to the tissues. Herein arises a selective oxidation, since methemoglobin is reduced by the toxic proteins of disease.

4. The above conditions and the further fact that a methemoglobinemia is harmful only when profound in degree, justifies the use of small doses of methemoglobin producing drugs in the treatment of asthma to effect a therapeutic methemoglobinemia. In practice this procedure has been attended with success.

REFERENCES.

1. Oettinger: "Methemoglobin as a Factor of Conservative Metabolism." *Journal of the American Medical Association*, September 16, 1905.

2. Meltzer: "Bronchial Asthma as a Phenomenon of Anaphylaxis." *Journal of the American Medical Association*, September 17, 1910.

3. Hektoen: "Allergy or Anaphylaxis in Experiment and Disease." *Journal of the American Medical Association*, April 13, 1912.

4. Cannon and de La Paz: "The Stimulation of Adrenal Secretion by Emotional Excitement." *Journal of the American Medical Association*, March 11, 1911.

5. Shultz: "Physiological Studies in Anaphylaxis." *Hygienic Laboratory Bulletin*, No. 80.

6. Salter: "Article on Asthma; Reynold's System of Medicine." Macmillan & Co., New York, 1871.

606 METROPOLITAN BLDG.

CHRONIC LYMPHATIC LEUCEMIA.*

STUDY OF A CASE, WITH PARTICULAR REFERENCE TO BLOOD PICTURE AND FERMENTS IN THE URINE.

BY M. B. WESSON, M.D.,

EL PASO, TEXAS.

THE word leucemia is used to indicate a disease, the characteristic symptom of which is an increase in the white blood cells in the circulating blood, associated with hyperplastic changes in the blood-making organs. The diagnosis of leucemia is made on the blood pictures alone. We have to differentiate myelogenous and lymphatic leucemias.

The principal symptoms of lymphatic leucemia are the increase in lymphocytes, and the tumor-like enlargements of lymphatic structures. This increase need not be absolute, but merely relative to leucocytes. Chronic lymphatic leucemia is differentiated from acute by its very protracted course and the enlargement of the spleen. Preponderance of large lymphocytes does not necessarily indicate acute form, as every leucemia has a greater or less number of these. Great stress must be laid on the clinical picture. Acute leucemia has a rapid course, terminating fatally in a few weeks (most authors give six weeks as a limit for the acute form, but Fraenkel conservatively proposes four months) with evidences of profound prostration and degeneration of the organs, and practically no enlargement of lymph glands and spleen. While on the other hand, chronic leucemia develops slowly over a period of months or even years, with gradually increasing and finally marked lymphomatosis; and becomes fatal through cachexia or a process simulating the acute form.

The patient upon whom this study was made is M. F., age 51, who entered the hospital (service of Professor Barker), January 12, 1910, complaining of leucemia. The family history is negative. Patient has always been a healthy man. Had measles, mumps, and whooping cough as a child; malaria at 11 (five months' duration); typhoid fever at 34; sciatic rheumatism at 41; no syphilis. Occasionally suffered from tinnitus.

The present illness began one year ago, when he noticed that the cervical and axillary glands were enlarged. Four months ago strength began to fail, and on climbing stairs ankles were swollen and discolored (circulation has been poor since attack of typhoid fever). This swelling gradually spread up to knees. Would disappear at night. About nine weeks ago noticed painful spot on left side over splenic area. Within past five weeks has had night sweats, cough on lying down, increased expectoration, and shortness of breath.

The *physical examination* showed a rather emaciated man (had lost 22 lbs.). The whole body is somewhat pigmented. No abnormal pigmentation about axillary and inguinal folds. Marked venous pulse—centrifugal pulse with systolic collapse. The mouth examination showed enlarged tonsils and marked alveolar pyorrhea. Epitrochlear

*From the Medical Clinic of the Johns Hopkins Hospital, Baltimore.

glands barely palpable; posterior cervical, submaxillary, axillary, and inguinals markedly enlarged, rather firm and elastic. The inguinals form a large tumor mass in each groin; glands for most part are separate, 1 to 3 cm. in diameter, and form mass 8 x 4 cm. on right, somewhat less on the left. There is slight tenderness over the sternum on pressure. *Lungs* clear except at bases. *Heart* is clear except for soft systolic murmur, which is not transmitted to axilla. The *spleen* is readily palpable, 5 cm. below costal margin in L. M. L. Descends with each inspiration, rather soft and rounded. *Liver* dullness extends from fifth rib to 6½ cm. below in R. M. L. Edge is fairly sharp and rather tender. It reaches a point 11 cm. below tip of ensiform and 3 cm. above umbilicus in M. S. L. The surface is smooth. *Extremities:* There is slight pitting on pressure over tibia; ankles not swollen. Large deep-brown pigmented areas cover medial surface of legs.

In practically all of the cases reported the first symptom has been swollen lymph glands, though some cases do not show any glandular enlargement till late in the disease. Generally the glands are largest in the neck and decrease downward; average 5 to 2 cm. in diameter, discrete or loosely joined in small groups, usually hard, rarely tender, and movable under the skin. These continue to increase in size until end, unless secondary infection causes them to disappear. They seldom give rise to temperature symptoms. A fever at other times than acute exacerbations is due to complications. During the two months this patient has been under observation both inguinal and axillary glands have gradually grown larger, and are very much more tender on palpation than at time of admission. One axillary gland measures 4 x 2 cm. There are no palpable popliteal glands.

Patient has had no fever except that probably due to a herpes zoster. Shortly after admission inunctions of arsenic were applied in right axilla, and on this site a very severe herpes developed. This caused marked discomfort and patient developed a temperature which lasted for some days. At the present time the herpes has healed, but an exceedingly painful neuralgia remains.

The enlargement of the spleen is a constant symptom. Occasionally it is palpable with difficulty, but it may extend to the umbilicus. However, in the average case, as in this patient, it extends about 3 to 5 cm. below the costal margin. Enlargement is regular in all directions and spleen is movable, descending with each inspiration. Very large and hard spleens, as a rule, belong to cases with slight lymphocytosis.

The liver is generally palpable and extends a few centimeters below the costal margin in the right mammillary line, but an enlargement as great as in this case is rather uncommon. On February 20 the liver reached a point 6½ cm. below C. M. in R. M. L. and 11 cm. below tip of ensiform in M. S. L. March 12 the liver extended 12 cm. below C. M. in R. M. L. and 17½ cm. below the tip of the ensiform. The enlargement rarely gives rise to subjective symptoms—has not in this case.

Intense pain in the bones is usually the result of secondary infection of the periosteum and abscess formation.

There is an intense itching of the entire skin, which is usually dry and withered, frequently associated with an eruption of urticaria, papulosa, and vesiculosa. Lymphomata in the skin, as tubercles or larger nodules, are frequently described. Hemorrhages from the skin are rare, occurring only during acute exacerbations toward the end. Edema arises over all parts of the body as a result of pressure of the lymphomata on the veins and the lymph vessels.

Patients generally lose a small amount of weight, but, in this case, though there was a loss during the first month in the hospital, he has gained slightly in weight.

The examination of a drop of fresh blood of our patient showed it to be dull and opaque, pale red in color, and to smear easily. Erythrocytes were somewhat pale; very slight anisocytosis. Leucocytes seemed to be nearly as numerous as red cells —an extreme and remarkable leucocytosis. Mononuclears predominated, several eosinophiles seen, very few polymorphonuclear neutrophiles; no parasites or pigmented leucocytes.

In a smear with Wilson stain the reds were slightly pale staining. Numerous normoblasts, intermediate and megoblasts seen. No basophilic degeneration observed. The predominating white cell was lymphoid in type, resembling a lymphocyte in size, with a pycnotic reticulated and almost segmented nucleus, not uniformly stained. Few myelocytes seen, a few eosinophiles, and camparatively no polymorphonuclear neutrophiles. Large mononuclears did not appear to be increased. The relative number of reds and whites in a field was remarkable; numerous fields where leucocytes predominated.

The red-blood cells in all cases are decreased in number. Cabot says they average 3,600,000, but toward the end drop below 2,000,000. According to the figures of other writers his average is too high. The count on our case has averaged about 2,250,000, the highest count being 2,620,000 and the lowest 1,920,000. On admission (January 12) it was 2,320,000, and at present (March 12) it is 2,240,000. There has been at times a faint suggestion of poikilocytosis and there is a moderate amount of anisocytosis—mostly microcytes, few macrocytes. The deformities in size and shape depend upon the anemia. There is a central pallor of the cells which is constant.

The majority of writers agree that the color index is high when the count is below 2,000,000, and at other times less than 1. In our case it has averaged about 1.30, the hemoglobin remaining at 60, which is a little high for a red count of 2,250,000.

There is rather a unanimity of opinion that nucleated reds are rare in this disease, and that when they do occur they are of the normoblast variety, megaloblasts being practically never found. Da Costa reports a case in which 10,678 per c.mm. were found—8,512 normoblasts and 2,166 megaloblasts. On two days our findings exceeded this. The day of admission patient was evidenly having a blood crisis, as 96 nucleated reds were found while counting 500 cells (unfortunately these were not differentiated). Four days later 17 nucleated reds or 19,612 per c.mm. were present—13,468 normoblasts, 3,108 megaloblasts, and 1,026 intermediate. No polychromatophilia was ever observed.

In our case the platelets increased, and on some days they have been so numerous as to interfere with the counting of the red cells. The majority of authorities, however, agree that they are decreased in chronic lymphatic leucemia.

According to Cabot the average ratio of white to red cells is 1:50. The white counts vary from

1,480,000 to 30,000, an average being 350,000, which decreases to 180,000 toward the end. Da Costa states that counts over 250,000 are rare. In our case the ratio is much smaller, varying from 1:5 to 1:8. The highest count was 500,000 and the lowest 168,000. For the six weeks following admission the number of white remained constant, about 500,000; then they suddenly began to decrease till they were reduced to about 225,000, at which level they have remained.

The increase of lymphocytes is both absolute and relative. The proportion of large to small vary at different times in the same case. In this case the total non-granular cell count has varied from 99 per cent. to 90 per cent. The number of small lymphocytes range from 94.2 per cent. to 80 per cent., the difference being counterbalanced by changes in the number of large lymphocytes and large mononuclears present. Azure granules, which Naegeli says are not found in the cytoplasm of lymphocytes in leucemia, are present in large numbers. This observation confirms that of a number of writers. The rods Ottenburg reported as present in the large lymphocytes in acute leucemia were not observed.

The small lymphocytes are of the same size or smaller than the erythrocytes; and show a small amount of protoplasm, and a round, usually feeble staining sharply circumscribed nucleus. Occasionally a smear shows nuclei that stain with marked intensity, and others that are very pale. The deeply staining nuclei seem to be smaller and to have less protoplasm about them than the others. Attempts have been made to differentiate these according to age, the dark ones being the older.

I found that in thick smears the deeply staining nuclei predominated, but that in thin ones, particularly if the cover glasses were squeezed together, the light ones were in the majority. So in my case, at least, the variation in age was an antefact, due to flattening out of the cells. There is a marked nuclear network with occasional nodular swellings, but no definite nucleoli. Sometimes the network shows no definite outline or pattern. The nucleus is most often in the center of the cell, but it may be eccentric. The protoplasm is small in amount, and as a rule acidophilic (stains pink with Ehrlich). They resemble nucleated reds—differ in that the reds possess more protoplasm, stain pinker, and the nucleus is more solid and deeply staining. There is a clear unstained space immediately about the nucleus. Occasionally this is encroached upon by nodular thickenings projecting into it on all sides from the nuclear network.

Large lymphocytes have more protoplasm than the small, vary much in size, and hence it is often difficult to differentiate them. The nucleus is extra central, ovoid as a rule, though at times flattened on one side. The nucleus stains less intensely and the nuclear network is rather vague. Many of the large lymphocytes, which have a relatively large nucleus deficient in chromatin and a faintly basic non-granular protoplasm, are regarded as the mother cells of the typical small lymphocytes.

There are a few large irregular-shaped faintly staining bodies in the smears, homogeneous, devoid of granules and nucleus. All agree that these are both large and small lymphocytes in an advanced stage of degeneration; but there is a difference of opinion as to whether they are extruded nuclei or the protoplasm of cells that have lost their nuclei. They are not present in fresh blood, hence are regarded as abnormalities artificially produced in the readily compressed lymphocytes, commonest in thin smears. Their formation is prevented by making thick smears, and drawing the covers apart rapidly.

The "mononuclears" are unusually large, and have a large, oval, vesicular, eccentrically placed, faintly staining nucleus, which may be overlooked, and abundant weakly basophilic protoplasm without granules. Many of the nuclei are egg-shaped, and quite rich in chromatin, the latter being scattered over some and collected in bunches in others. These cells vary much in size and a day or so preceding a decrease in the total white count they appear to be extra large. This was noticed most clearly in the counting chamber in the blood that had been prepared for making a leucocyte count, the reds being laked with acetic acid and the nuclei of the whites standing out sharply.

The number of polymorphonuclear cells is relatively low; rarely does it reach 10 per cent. I found that while the white-blood count numbered 500,000, 1.2 per cent. was the greatest number of neutrophiles found; and that it varied from this to 0. Since the decrease in whites the percentage has increased, and one count showed 8 per cent. Eosinophiles are said to be absent or less than 1 per cent.—an absolute and relative reduction. Our count showed a variation from .2 to .8 per cent. No mastzellen were seen at any time.

Myelocytes are reported as being generally present in very small numbers, but rarely exceeding 1 or 2 per cent. I found them to vary from 1.4 per cent. to 0. Eosinophile myelocytes are rare, but I found them in larger numbers than reported by other observers; however, 0.4 per cent. was the maximum number.

Occasional improvement in the blood picture is not uncommon. Apparent remissions lasting for months have been described, in which the swelling of lymphatic structures retrograde and the blood picture becomes nearly normal, though there is a considerable increase in lymphocytes.

The study of the urine has been of considerable interest. It has been reduced in quantity, dark yellow to orange in color, turbid, specific gravity 1,025, acid reaction, no albumin or sugar. There is generally, in a twenty-four-hour specimen, a heavy, voluminous, brick-red sediment of amorphous urates. Not infrequently uric-acid crystals are present. I found no record of their presence in reports of other leucemia cases; however, my review of the literature was not complete.

At the suggestion of Dr. Roger Morris Washington University St. Louis I made a search for ferments in the urine. The procedure for glucose, maltose, saccharose, and lactose was as follows: 5 c.c. of urine was added to 10 c.c. of a 2½ per cent. solution of the sugar, and to this was added 1 c.c. of toluol to prevent the action of bacteria. Two active and two controls, of boiled urine, were prepared of each. These were incubated for five days. Then they were removed from the thermostat and immersed in cold water to prevent further action of the enzymes. The solutions were filtered and examined with the polariscope. I found no differences between the active tubes and the controls in the glucose, saccharose, and lactose. But in the case of maltose, the control tubes rotated the light more strongly than the active, thus indicating that *there must have been some enzyme present (moltase) which had broken down the maltose molecule.* The following table shows the polari-

scope readings. Tubes No. 1 and No. 2 are active, No. 3 and No. 4 are controls:

Date	No. 1	No. 2	No. 3	No. 4
February 12.....	1.6 1.5 1.5	1.5 1.5 1.5	2.3 1.9 2.0	Lost
March 12.....	0 1.0 0.5 1.0	1.0 1.0 −1.0 −0.5	1.6 2.0 1.7 2.0	1.9 2.4 2.0 1.6

For the amylolytic ferment 10 c.c. of 1 per cent. starch water (boiled) was added to 5 c.c. urine and 1 c.c. toluol. The procedure was then the same as described for the sugars. The readings showed no differences between the active tubes and the controls. Hence there was no amylolytic ferment present.

The proteolytic ferment required a more complex medium. One part of ascitic fluid and two parts of normal salt were heated one-half hour at 75-80° C. Ten cc. of this product were used for each tube, and the same routine followed as already described. At the end of five days, 16 per cent. $MgSO_4$ was added and the solution heated, then acidified with dilute acetic acid and neutralized with $NaHCO_3$. This was filtered into a Kjeldahl flask and the routine oxidation done. The distillate was titrated against N/¹NaOH. The active tubes required 2.85 c.c. and 2.6 c.c. respectively, while the controls only needed 1.5 c.c. and 1.4 c.c. to neutralize. *This indicated definitely that a proteolytic ferment was present.*

Date	Alkali Added Before Incubation	ACIDITY EXPRESSED IN C.C. N/20 NaOH						Difference in Acidity
		Urine Unboiled			Urine Boiled			
		No.1	No.2	No.5	No.3	No.4	No.6	
Feb. 12	0	.9			.6			.3
			.85			.6		.25
Mch. 3	1.8	.6			.2			.4
			.6			.2		.4
Mch. 12	.6	1.0			.4			.6
			1.0			.4		.6
	0			1.5			.8	.7

Hewlett's method of testing for lipase is so clumsy that I discarded it and used a modification of Loevenhart and Kastle's method—such as is being used in the pathological laboratory. The tubes contained 8 c.c. water, 2 c.c. urine (single specimen), 0.52 c.c. ethyl-butyrate, and .6 c.c. toluol. They were titrated against N/20 NaOH after twenty hours' incubation, azo-litmus being used as the indicator. In the first experiment the active tubes required about 0.3 c.c. more alkali than the controls. This difference suggested the presence of a fat splitting enzyme, but was not very positive. The patient was then given sodium bicarbonate gr. xxv. t.i.d. for a week in order to make the urine neutral, but this was not accomplished. Another series of tubes was prepared, however (single specimen), and the active tubes found to require .4 c.c. more of the alkali to neutralize than the controls. It occurred to me that the enzymes might be concentrated by means of the heavy urate precipitate, so the last trial was made with a twenty-four-hour specimen of urine. About 5 c.c. of the sediment was obtained by means of a pipette. This was heated to 40° C, and the precipitate dissolved. The tubes were then prepared as before, having, however, three actives and three controls. Two of these pairs were neutralized by adding 0.6 c.c. N/20 NaOH and the third left acid. After incubation I found that the "neutral" active tubes required 0.6 c.c. more alkali than the controls, while the "acid" required 0.7 c.c. more than its control. *I think there is no doubt but what there is lipase present.* The following table shows the results of the various titrations:

BIBLIOGRAPHY.

Baldwin and Wilder: *American Journal Medical Sciences*, 1899, cxvii, 656-662.

Barker: *Boston Medical and Surgical Journal*, 1908, clviii, 609-612.

Blumer and Gardner: *Medical News*, N. Y., 1908, lxxxiii, 833-839.

Bramwell: "Clinical Study," Edinburgh, 1909, vii, 371-374.

Bushnell: *Liverpool Medical and Chirurgical Journal*, 1908, xxviii, 415-419.

Buchanan: *Liverpool Medical and Chirurgical Journal*, 1907, xxvii, 120-128.

Cabot: "Clinical Examination of Blood," 1909, 155-174.

Cabot: "Osler Modern Medicine," 1908, vol. iv, 612-681.

DaCosta: "Clinical Hematology," 1905, 302-327.

Emerson: "Clinical Diagnosis," 1908, 576-589.

Emerson: Johns Hopkins Hospital Bulletin, Balto., 1907, xviii, 71-85.

Fabian: *Centralblatt für allgemeine Pathologie und pathologische Anatomie*, Jena, 1908, xix, 49-83.

Feeter: *Journal American Medical Association*, Chicago, 1907, xlviii, 609.

Findlay: *Glasgow Medical Journal*, 1907, lxvii, 65-71.

Findlay: *Lancet*, 1904, i, 1420.

Hart: *New York Medical Journal*, 1903, lxxviii, 224-227.

Hewlett: *Journal Medical Research*, 1904, n.s. vi, 377-397.

McCrae: Johns Hopkins Hospital Bulletin, Balto., 1900, xi, 102-107.

McWeeney: *Dublin Medical Journal*, 1905, cxix, 162-171.

Muir: Allbutt and Rolleston's "System of Medicine," 1909, vol. 5, 788-831.

Naegeli: "Blutkrankheiten und Blutdiagnostik," 1908, 301-313.

Ottenberg: *American Journal Medical Sciences*, Phila., 1909, n.s. cxxxviii, 562-567.

Pepper: Philadelphia Hospital Reports, 1909, vii, 170-177.

Pincus: Nothnagel's "Encyclopedia of Practical Medicine," vol. ix, 580-610.

Rehling: Proceedings New York Pathological Society, 1909-10, n.s. ix, 54-58.

Rehn: *Beiträge zur Pathologischen Anatomie und zur allgemeinen Pathologie*, Jena, 1908, xliv, 177-196.

Taylor: *Clinical Journal*, London, 1908, xxxii, 97-103.

Webster: *New York State Journal of Medicine*, 1909, ix, 281-283.

HEMOPTYSIS IN TUBERCULOSIS: ITS SIGNIFICANCE AND ITS TREATMENT.

By THOMPSON FRAZER, M.S., M.D.,

ASHEVILLE, N. C.

On first thoughts it may seem like time wasted to discuss at any length a symptom such as hemoptysis, which has been a phenomenon familiar to the medical profession ever since the days when Hippocrates wrote: "In persons who cough up frothy blood the discharge of it comes from the lungs." One would think that there would indeed be little to be said about a symptom which has engaged the attention of the profession for centuries, but a little investigation will reveal the fact that, much as has been written on this subject, the opinions of physicians are still greatly at variance as to the frequency, the significance, and the treatment of

hemoptysis occurring in the course of pulmonary tuberculosis.

I shall, therefore, present in this paper the views held by different phthisiographers on this subject, taking up the incidence, the causes, the diagnostic value, and the prognostic import of bleeding from the lungs in chronic tuberculosis, concluding with a consideration of the therapeutic indications to be met in this condition.

Incidence of Hemoptysis.—As to the frequency of hemoptysis in tuberculosis there is a great difference of opinion. Flick says: "The frequency of this symptom is surprising and greatly exceeds the expectation of clinical experience."[1] In a series of cases observed during one year, there were hemorrhages in 51.03 per cent. Cornet,[2] quoting from various sources, finds that the estimates vary all the way from 24 to 70 per cent.; others make the percentage still higher. The differences in the figures given by competent observers are somewhat difficult to reconcile; it is probable that different classes of cases were under observation. At any rate, such wholesale statistics have but little practical value and they must be but "lame and impotent conclusions" that are based upon them, for, to be of diagnostic service, the stage in which hemoptysis is most common, must be known. Of greatest utility in incipient cases, its value varies indirectly with the progress of the disease, while in those cases in which death ensues shortly after an hemoptysis, this symptom, from a diagnostic viewpoint, approaches zero. A redistribution of these hemorrhagic cases must be made, they must be pigeon-holed according to the stages in which they occur before statistics can be of any great diagnostic significance.

This has already been done, although but to a limited degree. Cornet thinks that "most frequently the hemorrhage occurs in the very beginning of the disease," but he gives no figures. Minor[3] has found the symptom most common in "relatively advanced cases," but adds that careful inquiry might reveal the occurrence of blood-spitting in the earlier stages.

The conclusions of Anders[4] are of interest. He says that "In about 10 per cent. of cases of chronic ulcerative pulmonary tuberculosis, hemoptysis first directs attention to, and is almost invariably followed by, the demonstrable and conclusive evidences of the disease. In not less than 25 per cent. of all cases of chronic pulmonary tuberculosis, hemoptysis is among the ushering-in symptoms of the active, recognizable period of the affection."

The report of Smith[5] (dealing with hemoptysis) merits our attention. He believes that the disparate figures obtained by equally competent observers is dependent, in a measure, upon whether or not blood-streaked sputum is considered a hemorrhage. He goes on to say that the "importance of this symptom (streaked sputum) in establishing a diagnosis is great—practically as great as frank hemorrhage—and physicians dealing with early cases are not apt to make any distinction between the degrees of hemoptysis, but it is considered doubtful whether all cases of pulmonary tuberculosis do not have, at some time during the course of the disease, sputum streaked with blood from the lungs." In the series of cases which he reports he does not, therefore, consider streaked sputum as a hemorrhage, but regards it as being "sometimes, at least, indicative of a reparative process—an evidence of forming granulations." In spite of this non-inclusion of streaked sputum, the percentage of hemorrhagic cases in his series is rather high. Thus, in 1210 cases in all stages, 38 per cent. had one or more hemorrhages, while in 67 incipient cases 28 per cent. were hemorrhagic. If we include as hemorrhagic cases with streaked sputum, we shall not be guilty of an overstatement in saying that at least 50 per cent. of all cases of pulmonary tuberculosis have hemorrhages, one-half of this number having the first hemorrhage early in the disease.

Diagnostic Significance.—From what has been said above, the diagnostic value of hemoptysis is evident; for, while not absolute (on account of its occurrence in diseases other than tuberculosis), the aggregate of these cases is inconsiderable when compared with those in which tuberculosis is the undoubted cause. "All in all, one does not err in considering actual pulmonary hemorrhages to be of tubercular nature, although hemorrhages do occur in certain other diseases, in hemophilia, pneumonia (abscesses and gangrene), and aneurysms of the aorta. Diseases of the heart, especially mitral stenosis, and diseases of the tricuspid are important causes of bloody infarcts; but in such cases a careful examination reveals the etiology."[2]

The observations of Hirschfelder[6] are in accord with those just expressed: "As a result of engorgement of the pulmonary capillaries or of permanent injuries to their walls, hemorrhages from the lungs may occur in any acute cardiac overstrain, but they are most frequently seen in cases of mitral disease. . . . . It is always of the greatest importance to differentiate between such an hemoptysis and that of an early pulmonary tuberculosis, and only the most careful repeated examinations, coupled with the presence of the cardiac lesion and the absence of signs of pulmonary disease, give sufficient grounds to exclude the latter."

Hawes,[7] in a series of 114 hemorrhagic cases, says that 68.3 per cent. were either strongly suspected or proved to have tuberculosis. Miller[8] thinks that hemoptysis "should always be considered to be due to tuberculosis unless another definite cause can be demonstrated." Bartlett[9] is of the opinion that hemoptysis occurring in pneumonia, bronchitis, asthma, or following trauma should lead to the suspicion of an underlying tuberculous process.

The question as to whether hemoptysis may be, at times, a form of vicarious menstruation is still unanswered. The relationship between uterine and pulmonary hemorrhages was noted by the Father of Medicine in the aphorism "Hemoptysis in a woman is removed by an eruption of the menses" and we know that pulmonary hemorrhages are not uncommon at the premenstrual period, but whether we can consider hemoptysis as replacing, or equivalent to, the periodical uterine flow is extremely doubtful. Bartlett does not believe that an hemoptysis can occur in normal lungs, while Cornet thinks that vicarious menstruation "does undoubtedly occur, though on the whole but rarely."

In this connection a case that I have at present under observation is of interest. A young girl, sixteen years of age, consulted me recently on account of small pulmonary hemorrhages occurring at irregular intervals during the last eighteen months. Menstruation had never been established. Examination of the lungs revealed nothing, but the presence of an infantile uterus was discovered when a gynecological examination was made by Dr. Griffith. This would seem to be a case of vicarious

menstruation, but the patient must be kept under observation for several years in order to make sure that pulmonary disease has not followed the hemoptysis before one can, with any reasonable degree of safety, exclude tuberculosis as a cause of the hemorrhages.

The percentage of cases in which tuberculosis is the cause of pulmonary hemorrhage is variously estimated, but all writers agree that it is a considerable one. Thus Bartlett thinks that hemoptyses are tuberculous in origin in 90 per cent. of the cases, while Brown[10] says that 90 per cent. of all cases having hemoptyses develop at some time, sooner or later, pulmonary tuberculosis. It is not claiming too much for this symptom, therefore, if we rank it among the most important diagnostic features of tuberculosis.

Causes of Hemoptysis.—The cause of pulmonary bleedings is a topic that deserves and has prompted considerable investigation. Before enumerating what we may consider the actual exciting causes of hemoptysis, a brief consideration of the predisposing cause, the pathological condition of the pulmonary vessels may not be out of place. This condition, briefly, consists in the invasion of the walls of the smaller vessels by tubercle formation. It is easy to understand how these weakened walls might lose their power of resistance against the pressure of the blood, readily giving way if this pressure be sufficiently increased. Sometimes the new formation projects into the lumen of the vessel, giving rise to a local increased pressure at this point. Such are the conditions in the early stages. Later in the disease small aneurysms are formed in the walls of the larger vessels and it is these which rupture and give rise to the larger hemorrhages in advanced cases.

The actual exciting causes—which have been assumed directly responsible for pulmonary hemorrhages—are almost as varied as they are numerous. Mental excitement is not infrequently followed by a hemorrhage from the lungs, and physical overexertion—in the form of an acute strain or more prolonged efforts such as riding or mountain climbing—is a common etiological antecedent. An alcoholic debauch may bring on a hemorrhage; and sexual intercourse has also received its meed of blame.

A rapid rise in humidity with lessened excretion of water through lungs and skin and consequent increase of pressure in the pulmonary circulation, has been held accountable in some instances, and the drinking of large quantities of water during the hot weather probably favors the occurrence of hemorrhages for the same reasons. Plethora, predisposing to hemorrhage, may be due to overeating, and in women, the systemic plethora of the premenstrual period must also be counted as a possible cause of hemoptysis.

While the causes mentioned are varied in character, the action of them all can probably be referred to an increased blood-pressure. This is not always demonstrable—and, indeed, the hemoptysis frequently appears unheralded by any of the gathering clouds above noted—but the frequent recurrence of hemorrhages makes probable the explanation that they are due to an increase in the blood-pressure, which the vessels, in the eroded state of their walls, are unable to withstand.

Prognostic Significance.—Fortunately, the results of hemoptysis are frequently negative, although the percentage of cases in which this obtains would be difficult to estimate. In incipient disease of the lung the patient, following a hemorrhage, often finds that he is relieved of a sense of distress or constriction in the chest with which he had suffered for several days previous to the occurrence of the hemoptysis; and, if rest in bed be resorted to and proper treatment instituted it is not unusual for a marked improvement to take place. The depression of spirits which the hemorrhagic novice experiences is usually soon recovered from, and, as ill consequences so often do not occur, subsequent hemorrhages are tolerated with but little mental anxiety.

But the outcome of an hemoptysis can not be foreseen. In some cases a considerable amount of dissemination may follow an hemoptysis, in others a single large hemorrhage may be the starting-point of an acute bronchopneumonia with fatal outcome; while repeated smaller bleedings may carry off the patient through exhaustion. In advanced case swith cavity formation the bleeding, owing to inadequate thrombosis, is often uncontrollable and death may result from exsanguination or suffocation.

Smith[5] considers hemoptysis unfavorable from a prognostic standpoint. He says that patients who are "doing well, of whatever type or stage of the disease, do not become hemorrhagic and hemorrhagic cases do not bleed when they are improving." In his series of 417 deaths, 10 per cent. were due to hemoptysis, death occurring immediately or within two or three days. He thinks that "instances where overexertion, injury, or hard cough has been the exciting cause of hemoptysis are extremely rare, and are confined largely to hemorrhages occurring as the initial symptom of the disease."

Treatment of Hemoptysis.—Although there exists considerable difference of opinion as to the causes of hemoptysis, there is practical uniformity in the methods employed in the treatment of this condition, despite the use of drugs apparently antagonistic in their action and other minor details. The first indication is to reduce blood-pressure; as Smith says: "This constitutes the most rational and successful line of treatment."

As hemoptyses are sometimes preceded by a sense of tightness in the chest or by the presence of blood-streaked sputum, it may be possible to prevent their occurrence by insisting on absolute rest and by the administration of a drug—such as the nitrites—with the view of decreasing vascular pressure. Either of the following may be used:

Sp. nitroglycerin	♏ xv
Aquæ	℥ ij
Dose: ℥ j	
Sodii nitritis	gr. xv
Aquæ	℥ ij
Dose: ℥ j	

A teaspoonful of either of the above may be given every four hours for two or three days.

More commonly, perhaps, the patient receives no warning and the physician is summoned to treat an active hemorrhage. In the presence of this condition the indications are three in number: to secure absolute physical rest, to quiet the fears of the patient, and to lower the blood-pressure, attempting in this manner to favor the formation of a clot, which is nature's method of checking hemorrhage.

This means that the patient must be put to bed and all unnecessary movements on his part must be avoided: he is not allowed to get up to attend to the demands of nature, nor is he allowed to talk. A

comfortable position should be assumed: usually the semi-recumbent posture (with one or two pillows under the head) is best; and the patient should be assured in a few words that there is little cause for apprehension. My own practise is to break one of the little "packages" of amyl nitrite (such as are prepared by the different drug firms), holding it for several minutes under the patient's nostrils. This is the most rapid and effective means of securing vasodilatation that we possess, as the action of amyl nitrite begins within fifteen seconds (and lasts for about 10 minutes), according to the investigations of Hewlett, quoted by Hirshfelder. As a result of the vasodilation produced by this drug, and assisted in many instances by the quieting of the patient's fears which follows the appearance of the physician, the hemoptysis frequently comes to an end within a few minutes. Whether or not this occur, the patient should receive atropin gr. 1/50 hypodermically, and this dose may be repeated two or three times within the next twenty-four hours. Some advise an initial dose of gr. 1/25. This drug, though usually classed with the heart stimulants, acts most efficiently in cases of hemoptysis, the assumption being that the flushing of the skin, which is characteristic of the action of atropine, relieves the congestion of the deeper organs, with a consequent decrease of intrapulmonary pressure.

In place of atropine some prefer the use of nitroglycerin. This may be administered hypodermically in doses of gr. 1/100, repeated at short intervals, at first every half hour or hour, for three or four doses, later less frequently. After vasodilation has been obtained, more permanent effects may be secured by the use of sodium nitrite, gr. j, every three or four hours.

Morphine, although used considerably in hemoptysis, should not be resorted to as a routine measure. It is indicated if the cough be troublesome, but its field of greatest usefulness is in those cases where excessive nervous irritability exists.

It is customary, at the onset of a hemorrhage, to place a light ice-bag over the precordium, with a view to quieting the heart's action. A fuller discussion of this measure will occur later, in connection with the use of digitalis.

There is no specific diet for patients with hemoptysis; but the amount given should be small and fluid in character (milk in small quantities and egg-albumen are suitable); especially is it necessary to restrict the diet during the first twenty-four hours.

While depletion through the intestines by means of catharsis has been advised and is theoretically indicated, it is better to wait twenty-four hours before attempting to move the bowels on account of the exertion which this action imposes on the patient. Also examination of the chest should not be undertaken, or should be restricted to auscultation; under no circumstances should percussion be practised.

As to the length of time that a patient who has had an hemoptysis should stay in bed, there exists considerable difference of opinion: it is safer to insist on rest in bed for 24 to 48 hours after the expectoration of post-hemorrhagic clots has ceased.

Such, in brief, is the routine treatment of hemoptysis; but a discussion of this subject would be incomplete without an allusion, at least, to other drugs and measures which have been advocated in this condition. Thus, common salt, in doses of a teaspoonful, has been employed on account of an irritation of the vagus, with reflex constriction of the pulmonary vessels, which it is supposed to incite; its action, however, is hypothetical; while ice by mouth is probably to be regarded as a psychical hemostatic only.

Chloroform has been recommended because "it lessens the heart action, reduces the blood pressure and diminishes the respiratory movement."[11] Two to 4 c.c. are dropped on cotton and held near the patient's nostrils and the inhalation of a few drops is continued at one-hour intervals, for several days.

The use of emetics has been abandoned, practically, and ergot, once considered the drug par excellence, has been supplanted by the vasodilators.

A valuable procedure which should be borne in mind is the tying off of the extremities by means of bandages applied to the middle of the arms and thighs; it is especially serviceable in large hemorrhages where there is danger of exsanguination. The constriction, which should be great enough to interfere with the venous return without obstructing the arterial flow, should be gradually removed after having been applied for ten or fifteen minutes.

It is evident that the drugs and procedures above described depend upon one common principle, the reduction of blood-pressure. More recently attempts have been made to facilitate the formation of a clot by other means. Thus, drugs are employed which are supposed to increase the coagulative power of the blood; chief among these are gelatin and the calcium salts—the chloride and lactate.

More difficult of explanation is the rationale of the action of adrenalin in cases of hemoptysis. Being a vaso-constrictor, one would think that by defeating the very object ordinarily sought, *i.e.* the reduction of the blood pressure, it could exert only a baneful influence; yet, this drug is one of the most reliable agents at our command for the halting of a hemorrhage. Coleman recommends five drops of adrenalin chloride, or three grains of the suprarenal extract, every three or four hours. The action of the recently introduced pituitary extract has not been satisfactorily explained.

Another drug whose mode of action seems but imperfectly understood is digitalis. At one time held in high esteem as a hemostatic, its virtues are but seldom sung to-day. This is the more remarkable when we compare its effects with those of the almost universally used precordial ice-bag. In discussing the effects of the latter, Hirshfelder says: "Simultaneously the blood-pressure rises and the pulse increases in volume. There is evidently both a reflex vasoconstriction from stimulation of the vasomotor centre and a reflex stimulation of the vagus." Besides this, da Silva thinks that there is a direct stimulation of the heart muscle. It will be noted that these effects are exactly those brought about by digitalis, and hence enthusiastic hydrotherapists are in the habit of speaking of the ice-bag as "physiological digitalis." It is possible that digitalis, on account of its well-known tendency to upset the stomach, has for this reason been superseded by the ice-bag; but if the latter is indicated as often as it is prescribed, there surely must be a considerable number of cases where digitalis would be of benefit.

We have seen from what has been said that the profession is by no means united as to the significance, and the treatment of the symptom hemoptysis, occurring in pulmonary tuberculosis. And yet, in spite of the fact that this symptom is not in the strict sense pathognomonic, that it may appear early or late in the disease, or not at all—in spite of these

limitations and restrictions, hemoptysis must be regarded, diagnostically, as a symptom of great value, prognostically, as a sign of considerable, though still undetermined, import. And in spite of the advocacy, in this condition, of drugs antagonistic in their action—drugs which are classed as stimulants, depressants, dilators, and constrictors—we cannot disregard the accumulated clinical evidence at our disposal that all of these drugs have proved useful; and, perhaps, with a fuller knowledge of the action of drugs and a deeper insight into the cause and the "pathology" of hemoptysis, we may find that the antagonism is more apparent than real.

REFERENCES.

1. Fourth Annual Report of Henry Phipps Institute, 1906.
2. "Tuberculosis," in Nothnagel's Encyclopedia.
3. Minor: In Klebs' "Tuberculosis."
4. Anders, J. M.: "The Value of Hemoptysis as a Symptom of Early Pulmonary Disease," Tr. Sixth Internat. Con. on Tub.
5. Smith, F. C.: "Hemoptysis in Pulmonary Tuberculosis," Tr. Nat. Ass. for Study and Prevention of Tuberculosis.
6. Hirshfelder: "Diseases of the Heart and Aorta."
7. Hawes, J. B.: "Hemoptysis: Its Significance and Treatment at Out-Patient Departments," *Boston Med. & Surg. Jour.*, May 16, 1911.
8. Miller, J. A.: "Clinical Diagnosis of Tuberculosis," Tr. Nat. Ass. for Study and Prevention of Tuberculosis, 1909.
9. Bartlett, W. B.: "Diagnostic Importance of Hemoptysis," *Boston Med. & Surg. Jour.*, Dec. 21, 1911.
10. Brown: In Osler's "Mod. Med."
11. Fish, J. B.: "Chloroform: The Ideal Homostatic in Pulmonary Hemorrhage," *Jour. A. M. A.*, June 12, 1909.

THE PHYSICIAN'S ROLE IN PREVENTIVE MEDICINE.*

By DANIEL B. HARDENBERGH, M.D.

MIDDLETOWN, N. Y.

That the opening address of the presiding officer should be general in scope is quite customary.

The physician's immediate employment is the treatment of disease. By education and experience, however, the physician is qualified to act in a capacity of equal importance as conserver of health. This function he fulfills while pursuing his practice. Seldom called upon except to treat morbid conditions already present, he nevertheless takes occasion to indicate the way along which lies greater immunity. To this individual instruction the physician may add his influence in favor of the great cooperative movements that make for the physical amelioration of the community, or of the nation.

In no sphere of human activity have results been more beneficent than in that of medical research. What more striking aspect of human progress is to be found than in the contrast afforded in the conditions of health and longevity in early periods and the present!

In the 16th century the average length of human life was less than twenty years, while to-day it is nearly forty years. In London in the 17th and 18th centuries the death rate ranged from forty to eighty per thousand; now the rate is fifteen per thousand. At present the mortality varies in different countries as does the dissemination of medical science. In Denmark it is fourteen per thousand, while in India famine and plague raise the rate more than three-fold.

Great as has been the advance in safeguarding human life never were the opportunities for further advancement more inviting. Not to the medical mind alone is this apparent. Some of the first economists recognize that no expenditure of effort and wealth may be made so productive as that directed to the conservation of human life and health. In the words of Prof. Irving Fisher "the conservation of human life constitutes, therefore, the grandest movement of the twentieth century."

This truth while recognized by many discerning intellects is yet so inadequately appreciated that men of education, particularly men of the medical profession, should join in advancing the propaganda, and recognize that no richer field for altruistic endeavor exists than in directing public attention and interest to the advancement of medical science, and its application to social life. Failure to appreciate these opportunities and duties by the masses, by mercantile interests, and by political bodies may as readily be indicated as the discernment of students. Before a recent legislature in Ohio were two bills, one appropriating $25,000 to equip a serum farm for the treatment of cholera in hogs, and one for the manufacture and free distribution of antitoxin serum for the cure of diphtheria in the human subject. The legislature passed the bill for the preservation of the swine, and rejected that for the human subject.

It may be contended that humanitarian purposes should not sway such a body. But from a materialistic standpoint what investments yield greater returns to the national wealth than those directed to the health of the nation? Estimating the economic value of life through the capitalization of earning power, and using the tables of Farr of England to which have been applied the increased wages in America it may be shown that the value of an average life rises from about $100 at birth to over $4,000 at 30. Nicholson estimated that human labor capitalized in Great Britain was worth five times all other capital. Consider the decreased mortality from typhoid fever that has followed the establishment of filtration beds for the water supply of Berlin. What wonderfully rich investments have been these expenditures!

The average earnings of the southern farm laborer is 75 cents per day; that of the victim of hookworm disease, 40 cents. The cost of drugs required to cure a case of hookworm disease may be about fifty cents. What a field for investment!

Leonard Wood has declared that the discovery of the mosquito as the carrying agent for yellow fever is saving more lives annually than were lost in the Cuban war, and that it is saving the commercial interests of the world a greater financial loss each year than the cost of the entire Cuban war.

Greater advance has probably been made in the prevention of disease than in its cure. Undoubtedly public appreciation of preventive medicine is more adequate than that of therapeutics. The profession is fairer in its attitude to new methods of treatment than is recognized. So far as is just to the public it assimilates and incorporates that which is valuable in such methods; but, while this public remains eager for that which is new rather than that which is best, the professional attitude of aloofness to these methods during the period of exaggerated regard for them must, in a measure, continue.

*President's Address at the Annual Meeting of First District Branch of the Medical Society of the State of New York, held at Poughkeepsie, N. Y., October 4, 1912

It may be chided for failing at once to incorporate the methods of Christian science or osteopathy, but while certain portions of the public are eager to apply one or the other of these methods to the greater number of ills, how can the profession hold such a tendency but as misguided? It will not itself encourage fallacies in order not to be displaced.

It is willing to concede all that is valuable in mental science, Christian science, hydrotherapy, hypnotism, massage, osteopathy, and electricity, as well as hygiene and drugs, but how can it be expected to yield to passing whims to apply single methods of treatment to all ills to the exclusion of all other methods! It will need wait until the public has upon a particular method become rational before it can satisfy the demands for such treatment.

The instruction of our best schools, and the attitude of our societies and press should be broad enough and progressive enough to seize upon all that is valuable in treatment from sources obscure as well as scientific. The attitude of many well-informed among the public has been to accept among the drugs a certain number such as quinine and mercury whose specific effect is too apparent, even to the casual observer, to be denied; to admit the degree of immunity that follows administration of certain of the vaccines; to accept the antidiphtheritic and other of the antitoxins; and to sweep away from consideration practically the balance of the pharmacopœia. We undoubtedly can and shall do with many less drugs, and yet the results of most painstaking observation, even while classified as empirical rather than scientific in origin, we shall not consent in a body to discard. We shall, rather, gradually relinquish that which is less valuable, and assume certain newer agencies, not in the belief that they are final, but according to the best of present knowledge. No remedy is too obscure to receive consideration, or too obvious to escape scrutiny.

The most sceptical are perhaps themselves harboring delusions. Should one venture to offer as wholly beneficent agents merely fresh air and light, he would not escape scepticism upon the latter, at least.

It would be urged that the greater number of animal creatures live in deep darkness at the bottom of the ocean, and that man himself lived, until recently, in the darkness of forest, cavern, and hut. That in the tropics animal activity is nocturnal and that the neurasthenia of the white race, and the extinction in certain latitudes of that race is due to the destructive over-stimulation of light upon nerve tissue. In time exception may be taken to over-abundance of fresh air if one judge the future from the past.

So long as the medical profession continues with the best knowledge obtainable, and applies that knowledge with the greatest zeal and honesty it may be trusted to discard the inferior, and to adopt the new and preferable with greater wisdom than can the public at large. A profession so informed and so disposed will maintain an ever increasing influence and respect.

Ever increasing demands are made upon our medical schools. I should deem advantageous the union of the medical schools in the large cities. Such seats of medical learning would secure greater influence and prestige, and would invite not only continued endowment from individuals but might well become recipients of State endowment and support.

Paternalism in government, however to be decried, is evidently increasing, and nowhere can public money be more profitably employed than in combating morbidity and death in the nation.

With all zeal to maintain a worthy leadership in matters of public health the physician should be observant and prompt to act upon opportunities for advancement of health measures that interest of the public, however aroused, may offer. The present interest in combating tuberculosis that is so general should be utilized to press reforms that at a later period may be far more difficult.

The enactment of law in this State permitting the establishment and maintenance of hospitals at county expense for the treatment of tuberculous subjects should be utilized to the fullest extent to provide asylum for the hopelessly diseased, to guard against dissemination by segregation, to instruct in the early and proper treatment of the malady, and to cure the incipient cases. The interest of cities and villages in establishing dispensaries and day-camps should be stimulated, and the willingness of physicians to render gratuitious service and assume chief labors in such maintenance continued.

The present effort so representative of the best thought in the nation to secure in the national government an independent department, or bureau of public health should enlist the active cooperation of all physicians. No body of physicians is so large and none so small to escape a burden of responsibility toward this measure.

That the agencies for public health should remain scattered in eight departments, and that there should be no official in the public health service independent enough to express an opinion on matters pertaining to his bureau without securing the approval of a superior charged not with maintaining the health, but the finances of the nation is absurd.

The sacrifice of an efficient officer of the government, Dr. Wiley, may be attributed not so much to the officials who surrounded him as to the system that maintained them.

An excellent example of sacrifice of public health that the present system entails may be found in the instance of the bubonic plague in California cited by Senator Owen. Recalling that this was the most dreaded plague, the black death of London, that in a single outbreak killed 200,000 in Moscow, and more recently 164,000 in Bombay, he relates that when in 1900 this plague broke out in San Francisco the city board of health quarantined the Chinese district. On June 15, 1900 a United States district judge influenced by the commercial spirit of San Francisco declared the quarantine illegal saying, "I should hold that there is not now and never has been a case of plague in this city."

This opinion was followed by an immediate federal quarantine by the Marine Hospital Service officials. The governor and commercial bodies of California proved a false case before the Secretary of the Treasury, who compelled his subordinate, the Surgeon-General, to yield. The Marine Hospital Service finally persuaded the Secretary of the Interior to cause an inquiry in January, 1901, by experts of the highest order, Prof. Flexner, Prof. Novy, and Prof. Barker. Their unanswerable authoritative report was made in February, 1901, finding numerous cases of bubonic plague in the heart of San Francisco. United States quarantine law required immediate publication. Senator Owen states that he was advised that the report was suppressed two

months. He states further that since then various experts in government service have discovered in the rodent, and occasionally in the human subject, bubonic plague all the way from Los Angeles to Seattle, and that rustication of the expert making such announcement regularly followed, and that now, such is the prevalence among rats and squirrels along the coast that a serious outbreak in the human subject is quite possible; even the city of San Francisco is stirred to an expenditure of millions for erection of concrete docks to guard against further invasion of rats.

The futility of the present subordination of health interests of the nation could scarcely be better illustrated than in this recent history.

Opponents of the Owen Bill have sought to stigmatize it as a measure of the "doctors' trust." False as is such designation it has been used to weigh down the bill. Such an effort on part of patent medicine manufacturers and other opponents of the bill to render the support of the American Medical Association and other representative bodies a handicap to the measure should be met with most resolute determination to bring the proposed legislation to public attention in the confidence that attention once secured approval will surely follow.

Why, with a lowered death rate from nearly every other cause, is there an increase in that of arteriosclerosis with its allied chronic degeneration of heart, kidney, and liver? The ill effects of alcohol in excess are appalling. Will there follow not only a frank acceptance of the danger of overeating as well as overdrinking, but will the conclusion be reached that as alcohol in excess is deadly so in whatever moderation consumed it remains harmful. Such broad minded men as President Taft and Roosevelt as also the Emperor William, have been led to such conclusion and recognizing the responsibility of example, refrain from the use of alcohol.

With a more exact application of science to living there will be ever a closer scrutiny of the physician's own measure of hygiene. Whatever the physician's opinions, the public will rightly expect of him an example to enforce his precepts.

A STUDY OF THE EFFECT OF EXPERIMENTAL HYPERTHERMY ON THE OPSONIC ACTIVITY OF THE BLOOD SERUM OF THE RABBIT.*

By G. A. RUECK, M.D.,

NEW YORK.

For a long time fever was considered to have a harmful and deleterious influence on the course of infectious disease, but recent study suggests that a moderately elevated temperature has little harmful effect on the body tissues and that, in a degree, elevation of body temperature may increase the protective resources of the body and thus be conservative in its action.

Rolley and Meltzer, Lüdke, Riethus, Horning and Rolley, and others demonstrated experimentally that the parenchymatous degeneration of the inner organs, the marked decrease of hemoglobin and erythrocytes found in rabbits as early as one to two days after the beginning of an infection, and that the increase of leucocytes and the increased decomposition of albumin present in infected animals must be attributed to the action of the toxins, of the pathogenic bacteria in the tissues and not to the action of the high temperature on the tissues. That the increase in body temperature may retard the development of infection is shown in Filehne's experiment. Animals were inoculated with streptococci which he isolated from cases of erysipelas. The inoculated animals when kept warm were only moderately sick and recovered. Controls untreated died. Löwy and Richter injected animals with the organisms of diphtheria, chicken cholera, swine plague and pneumonia, and elevated their body temperature by means of the "Wärmestich." When the body temperature was artificially raised in this way the animals resisted these infections better than untreated controls. Rovighi and other men have obtained similar results in their experiments by elevating the body temperature of the infected animal. They failed, however, to show whether an elevated body temperature favored leucocytosis or stimulated the different protective activities of the blood serum. Comparatively few investigators were led to assume that an elevated body temperature did not favor the course of infection. Among these were Ritzmann, Barankeieff, and some others.

Sulina and others studied the thermal limits of bacterial growth in test tubes and concluded that the growth of bacteria in the infected animal body must, in approximately the same way, be inhibited through an elevation of body temperature. Rolley and Meltzer and others have demonstrated experimentally that an elevation of the body temperature of animals increased the agglutinative, hemolytic, bacteriolytic, and complementary activities of the blood sera as tested *in vitro*. Sulina studied the influence of an elevated temperature upon phagocytosis *in vitro* with standardized suspensions of leucocytes and standardized suspensions of *B. typhosus*, *Staphylococcus pyogenes aureus*, and attenuated anthrax bacilli without threads. These organisms were opsonized by their serum. In exposures of 5 to 25 minutes at different temperatures the counts of 400 to 500 phagocytic cells revealed a maximum phagocytosis between 39° C. and 40° C. Wright and Neufeld each thought that the leucocytes from different normal persons do not vary in their phagocytic power. But in the studies of North and Park and Briggs they varied. Rosenow and Potter and Krumwiede observed that in pneumonia leucocytes have a greater phagocytic power than in health. Shattock and Dudgeon found that washed pneumonia leucocytes were more active in pneumonia serum than normal leucocytes, whereas in puerperal streptococcus infection the patient's leucocytes were less active as phagocytes than those of healthy persons in the same serum. Sauerbeck found that etherization of the animal injured the phagocytic activity of the leucocytes *in vivo*. The conclusions of Wright and of Neufeld, it thus appears, are not altogether accurate and the leucocytes may vary in their phagocytic activity, depending on the stage of infection, the amount of injury, or the degree of immunization acquired.

Summary of Previous Work.—These experiments of others demonstrate that the parenchymatous changes of the inner organs in infectious diseases are not wholly due to the fever but chiefly to the bacteria and their products. This previous work also suggests that an elevation of body temperature (up to 40° C. to 42° C., or 104° F. to

*From the Department of Bacteriology of the College of Physicians and Surgeons, New York City.

107.6° F.) may be unfavorable to the growth of pathogenic bacteria, although it does not destroy them. Hyperthermy artificially induced increases the agglutinative, hemolytic, complementary, and bactericidal activities of the serum. The phagocytic activity of leucocytes *in vitro* is greatest at 39° C. and 40° C. The phagocytic activity of the leucocytes in infection may be increased or diminished.

The purpose of my experiments was to determine whether the opsonic activity of the blood serum is increased or diminished by elevation of body temperature. In order to do this the opsonic action of the blood serum of animals was tested before and after inducing experimental hyperthermy in them by incubation. The determinations were first made on normal rabbits, then on immunized rabbits, and also on a rabbit in certain stages of infection.

Technique.—After recording the temperature of the rabbit a small amount of blood (3 c.c.) was obtained from the ear vein, then the rabbit was placed for two hours at 37° C. in the incubator, the doors of which were left open every twenty minutes for five minutes to insure proper ventilation and avoid excessive exposure. After two hours' exposure the animal's temperature was again recorded and blood collected as before incubation. The specimens of blood were kept in the icebox for twenty-four hours, when the clear serum was removed from the clot for study. Leucocytes were obtained from my own blood by Wright's method. The bacterial emulsion was prepared from a 24-hour agar culture of *Staphylococcus pyogenes aureus*. In 5 c.c. of normal saline solution the growth was broken up, pipetted off, shaken, and centrifugalized at low speed for 2 minutes to remove clumps. It was standardized so as to have 5,000,000 of bacteria in 1 c.c. Equal parts of leucocytes, serum, and bacteria were mixed in small agglutination tubes. These were immediately put into the thermostat at 37° C., so that the exposure was made under identical conditions. At the end of 10 and 20 minutes' incubation two smears were made from each mixture. They were stained by Jenner's method and the bacteria ingested by 100 phagocyting cells, were counted in each set of slides as recommended by Sauerbeck. By covering the labels of the slides and making recounts the errors were tested. They varied from 1 1/3 per cent. to 24 per cent. But by taking the average of three independent counts and by making two separate determinations this error was greatly diminished.*

From the results of these three experiments shown in the above tables it is evident that the temperature of a normal rabbit is increased by the prevention of heat loss during incubation, and that at the same time the opsonic activity of the blood serum of the normal animal so treated is definitely increased. In order to determine whether similar changes are produced in immunized animals the following studies were made on animals immunized by vaccines:

Opsonic action before and after incubation of the blood serum of rabbits immunized with vaccine: November 3, 1910: The three rabbits were each inoculated intravenously with 1 c.c. of a vaccine of *Staphylococcus pyogenes aureus* containing 250,000,000 of dead cocci in 1 c.c. November 5, 1910: Intravenous injection of 2 c.c. of vaccine of 500,000,000 of bacteria into each rabbit. November 7, 1910: Intravenous injection of 3 c.c. of vaccine, or 750,000,000 of bacteria. November 9, 1910: Intravenous injection of 4 c.c. of vaccine, or of 1,000,000,000 of dead staphylococci into Rabbits II and III. November 11, 1910: Rabbits II and III at this stage supposed to be in negative phase of immunization were incubated two hours and specimens of blood taken before and after incubation were studied.†

OPSONIC ACTION OF THE BLOOD SERUM OF THE NORMAL RABBIT BEFORE AND AFTER INCUBATION

	Temperature	Phagocytic Indices* 10 Min.	20 Min	Average	Percentage of Increase
Rabbit I, weight 2,001 grams:					
Before incubation..	99.6°F.	17.17	29.8	23.49	.....
After incbation for 2 hours ..	104.°F.	20.27	31.5	25.80	10.2
Rabbit II, weight 3,351 grams:					
Before incubation.	102.°F	5.49	6.43	5.96	
After incubation ..	103.6°F.	7.78	8.76	8.27	38.8
Rabbit III, weight 2,986 grams:					
Before incubation..	99.4°F	5.67	8.40	7.04	.....
After incubation ..	103.2°F	6.27	9.36	7.81	10.9

*The suspension of bacteria was heavy and not standardized in experiment with serum of rabbit No. I. This accounts for the high phagocytic index.

OPSONIC ACTION OF THE BLOOD SERUM OF THE IMMUNIZED RABBIT BEFORE AND AFTER INCUBATION.

	Temperature	Phagocytic Indices 10 Min.	20 Min	Average	Percentage of Increase
Rabbit II:					
Before incubation.	100.8°F	5.49	7.99	6.74	.....
After incubation..	103.6°F	9.39	9.64	9.52	41.2
Rabbit III:					
Before incubation.	98.8°F.	5.61	10.11	7.86	.....
After incubation ..	105.2°F	6.11	11.77	8.94	13.7

November 21, 1910: Nine days after the last immunization with vaccine Rabbits II and III, at this stage supposed to be in positive phase, were incubated two hours, and specimens of blood taken before and after incubation were studied.

OPSONIC ACTION OF THE BLOOD SERUM OF THE IMMUNIZED RABBIT BEFORE AND AFTER INCUBATION.

November 21, 1910.	Temperature	Phagocytic Indices 10 Min.	20 Min.	Average	Percentage of Increase
Rabbit II:					
Before incubation.	99.8°F.	7.34	10.33	8.84	.....
After incubation	104.0°F.	7.41	13.50	10.47	18.4
Rabbit III:					
Before incubation.	101.2°F.	7.85	15.11	11.48	.....
After incubation .	104.°F.	10.80	21.26	16.03	39.6

These two experiments demonstrate that the serum of an animal immunized by a vaccine has greater opsonic power than a normal serum and that its opsonic activity is still further increased by an artificial elevation of the body temperature of the animal.

* Three counts of two sets of slides means the counting of 600 phagocyting cells with their contents for each average index.

†November 8, 1910: Rabbit I which had emaciated considerably after the first injection of the vaccine died after the third injection. The autopsy revealed no lesion. A culture from the heart blood was negative.

The following experiments were carried out to determine whether this experimental hyperthermy would produce any more marked changes in the opsonic activity of the blood serum of the rabbits when immunized by living bacteria:

Opsonic action before and after incubation of the blood serum of rabbits immunized with living bacteria; intravenous inoculation of Rabbits II and III: November 22, 1910, 0.5 c.c.; November 25, 1910, 1 c.c.; November 28, 1910, 1.5 c.c.; November 30, 1910, 2 c.c., and December 2, 1910, 3 c.c. of a living 24-hour agar culture of *Staphylococcus pyogenes aureus* suspended in 4 c.c. of sterile normal saline solution.

One day after the last immunization with living bacteria Rabbit II in positive and Rabbit III in negative phase were incubated two hours, and specimens of blood taken before and after incubation were studied.

OPSONIC ACTION OF THE BLOOD SERUM OF THE IMMUNIZED RABBIT BEFORE AND AFTER INCUBATION.

December 3, 1910.	Temperature	Phagocytic Indices			
		10 Min.	20 Min.	Average	Percentage of Increase
Rabbit II, somewhat emaciated, but does not appear sick:					
Before incubation...	100.6°F	9.26	10.12	9.69	
After incubation....	104.2°F	11.6	19.44	15.52	60.2
Rabbit III*:					
Before incubation...	99.8°F.	3.25	4.00	3.63	
After incubation....	104.8°F.	4.14	4.05	4.10	12.95

*Rabbit III greatly emaciated, diarrhea; later, at autopsy, December 15, 1910, found to have developed renal abscesses.

December 13, 1910, eleven days after the last immunization with living bacteria Rabbit II in positive phase and Rabbit III in negative phase were incubated two hours and specimens of blood taken before and after incubation were studied.

OPSONIC ACTION OF THE BLOOD SERUM OF THE IMMUNIZED RABBIT BEFORE AND AFTER INCUBATION.

	Temperature	Phagocytic Indices			
		10 Min.	20 Min.	Average	Percentage of Increase
Rabbit II (in good condition, positive phase):					
Before incubation...	101.6°F	10.82	14.37	12.60	
After incubation....	105.0°F	11.87	21.67	16.77	33.1
Rabbit III*:					
Before incubation..	102.0°F	6.79	8.94	7.87	
After incubation...	105.0°F.	6.21	10.00	8.11	3.05

*Rabbit III, emaciated, in marked negative phase; diarrhea has continued and rabbit has fallen in weight (from 2,986 grams to 2,205 grams —781 grams).

December 15, 1910, to test the immunity developed in Rabbits II and III by the previous treatment, they were inoculated each with 5 c.c. of a dense suspension of a 48-hour growth of *Staphylococcus pyogenes aureus* on agar. Rabbit III was dead the next morning. At the autopsy well-developed abscesses of the kidneys were found. Rabbit II, apparently well next morning, recovered. The resistance of Rabbit II had been enormously increased during the course of immunization so that it was able to overcome a lare dose of these virulent staphylococci. Rabbit III, however, having developed renal abscesses during the immunization with living bacteria was killed by the large test dose in less than 18 hours.

In studying the slides of my experiments with immune sera an agglutination of bacteria was noticed which was absent with sera from the normal animals. The fact that the agglutination of the bacteria is a disturbing factor in estimating the opsonic indices of immune sera has been recognized by other observers.* This agglutination of bacteria may account for some of the variations in my phagocytic indices, but it was a disturbing factor of minor importance. Although the series of animals was limited the results of the foregoing experiments were especially significant because the study was made on the same animals in different stages of immunization and infection. Furthermore, a technique similar in each experiment was used, rendering comparison of the results of interest. To facilitate these comparisons the results have been arranged in the following table:

	Rabbit II			Rabbit III		
	Before Incubation	After Incubation	Percentage of Increase	Before Incubation	After Incubation	Percentage of Increase
Normal serum	5.96	8.27	38.8	7.04	7.81	10.9
One day after immunization by vaccine	6.74	9.52	41.2	7.86	8.94	13.7
Nine days after immunization by vaccine	8.84	10.47	18.4	11.48	16.03	39.6
Twenty-four hours after immunization with living cultures	9.69	15.52	60.2	3.63	4.10	12.95
Eleven days after immunization with living cultures	12.6	16.77	33.1	7.87	8.11	3.05

Rabbit II throughout these experiments was in excellent condition. At no stage of immunization was it seriously affected by the inoculation, and during incubation it never suffered from the exposure. The opsonic action of its serum increased steadily with immunization. There was no evidence of a negative phase in the development of immunization in the animal. The opsonic action of the serum taken after two hours' incubation at all stages of immunization was invariably greater than before incubation, but the percentage of increase varied. The percentage of increase through hyperthermy in this animal II under normal conditions before immunization was exceptionally high. other normal or unimmunized animals, it may be recalled, increased in I, 10.2 per cent.; in III, 10.9 per cent, averaging 10.6 per cent. Immediately after immunization, whether by vaccine or living cultures, the effect of incubation was greatest. The percentages of increase of 41.2 per cent. and 60.2 per cent. obtained are so well marked as to exclude any possibility of error in the determinations. Nine and eleven days after immunization the opsonic activity of the serum was greater than immediately after immunization, yet the increase effected by hyperthermy was proportionally less. Rabbit III was in good condition at the beginning of the experiments, but during immunization with living cultures it became seriously infected. During immunization with vaccine the opsonic activity of its blood serum increased more markedly but less regularly than in Rabbit II. No evidence of a negative phase in the immunization was manifested up to this stage. During immunization with living cultures and the development of infection the

*See Wadsworth, "Studies on Pneumococcus Infection in Animals," *Journal of Experimental Medicine*, July 1, 1912.

opsonic action of the serum decreased, but after a rest, even though antemortem, the serum regained some of its former activity. The animal was, therefore, clearly in negative phase. There was an increase of opsonic activity of the serum due to two hours' incubation at all stages of the experiment. This varied, but was marked as in the previous animal before and during immunization, but when infection developed and the animal was badly poisoned by continuing the immunizing injections under these conditions, the experimental hyperthermy increased the opsonic activity of the serum very little—less than at any other stage of the experiment.

Conclusion.—In my experiments as in those of all previous observers the opsonic activity of the blood serum of normal animals was greatly increased by immunization with dead organisms in vaccines, and with the living bacteria as well. And, further, in the processes of immunization the animal may be so poisoned that for a time there is a so-called negative phase in which the opsonic activity of the blood serum is diminished or fails to increase. But this negative phase was found in my experiments only in Animal III when, after inoculation with living cultures, fatal infection developed.

In a vigorous animal the opsonic activity of the serum may thus increase gradually and steadily with immunization without necessarily showing a negative phase. Artificial elevation of the body temperature obtained by incubation (*i.e.* without exception in all my experiments) increased the opsonic activity of the blood serum in the normal, the immunized, and even in the sick rabbit. The effect of experimental hyperthermy in augmenting the opsonic activity of the blood thus varied greatly, depending upon the condition of the animal and upon the degree or stage of immunization or infection. The effect of hyperthermy was usually more marked in the immunized animal than in the normal. The increase was most marked in the healthy Rabbit II during active immunization. The increase was least marked, practically nil, in infected Rabbit III, antemortem.

In conclusion I desire to express my thanks to Dr. Augustus Wadsworth for suggestions and help in this work.

LITERATURE.

1. Allen, W. R.: "The Opsonic Method of Treatment." London and Philadelphia, 1911.
2. Hektoen, L.: "Technique," *Journal of Infectious Diseases*, Chicago, September, 1911.
3. Rolley and Meltzer: *Archiv. f. Klin. Med.*, 04, Bd. 68, 1900.
4. Lüdke and Sturm: *Deutsches Archiv. für Klinische Medizin*, C. 1910, "Aus der Mediz. Klinik in Würzburg"; "Klinishe und Experimentelle Untersuchungen über Genese und Verland des Fiebers."
5. Lüdke: *Münchener med. Wochenschr.*, 1909, Nov. 2, 20, 30.
6. Lüdke: *Deutsches Archiv. f. Klinische Mediz.*, 95, 1909.
7. Lüdke: "Ergebnisse der inneren Medizin, Kinderheilkunde," 4, 1909.
8. Riethus, Horning and Rolley, quoted by Lüdke.
9. Filehne: Verhandlungen der deutsch. derm. Gesellsch. 1894, IV. Kongress.
10. Löwy and Richter: *Dt. med. Wochenschr.*, 1895.
11. Rovighi: *Zentralblatt für Bacteriology*, 1899.
12. Ritzmann, quoted by Lüdke.
13. Barankeieff: "Experimentelle Untersuchungen über die Wirkungen des Fiebers auf den Verlauf der Infection," *Zeitschr. f. Klin. Medizin.*, Bd. 68, 1909, 288.
14. Sulina: "Uber den Einfluss der Fiebertemperaturen auf die Mikroben und die Schutzkräfte des Organismus." Erste Mitteilung. St. Petersburg.
15. Wright, A. E. and Douglas, S. R.: *Proc. Royal Soc.*, London, 1904, lxxii.
16. Neufeld, F.: *Ztschr. f. Hyg.*, 1902, xl.
17. Neufeld and Haendel: *Arch. a. d. K. Gsdtsamt*, 1910, 34, p. 166.
18. Neufeld and Haendel: *Ztschr. f. Immunitätsforschung*, Orig. 1909, iii.
19. North, C. E.: Presentation at the meeting of the Association of American Physicians, June, 1907, unpublished.
20. Park and Briggs: "The Opsonic Index as a Grade to Regulate the Use of Vaccines in the Treatment of Disease." *Journal of Medical Research*, 1907, xvii, 77.
21. Rosenow: (a) "Immunologic and Experimental Studies of Pneumococcus and Staphylococcus Endocarditis," *Journal of Infectious Diseases*, 1902, vi, 245. (b) "Immunologic and Experimental Studies in Chronic Pneumococci Endocarditis," *ibid.*, vii, 29.
22. Potter and Krumwerde: (a) "Some Observations on Opsonins in Pneumonia and in Four Streptococcus Infections," *Journal of Infectious Diseases*, 1907, iv, p. 601. (b) "Further Observations on Opsonins in Normal and Pathologic Serums," *Journ. Amer. Med. Assoc.*, Nov. 30, 1907, p. 1815.
23. Shattock and Dudgeon: "Observations on Phagocytosis as Carried Out by Means of Melanin to Ascertain More Particularly Whether the Opsonic Index is Identical with the Hemophagocytic Index," *Proc. Roy. Soc. B.*, 1908, lxxx, p. 165.
24. Eggers, H. E.: "On the Pneumococcic Powers of the Blood in Pneumonia," *Journ. Inf. Dis.*, Nov. 1, January, 1912.
25. Wadsworth, Augustus B.: "Studies on Pneumococcus Infection in Animals," *The Journal of Experimental Medicine*, Vol. xv, No. 1, July 1, 1912.

1070 Tiffany Street.

THE UNFORTUNATE PREDICAMENT OF THE MEDICAL PROFESSION.

By THOMAS DIXON, M.D.,

BROOKLYN, N. Y.

Those of the medical profession who have its best interests at heart, who feel a sincere pride in its past achievements and in the high ideals it has always striven to maintain, cannot contemplate the present economic conditions of the practice of medicine without experiencing a feeling of alarm in regard to the future. The leading economists of to-day now place our profession in the unremunerative class, and state that under present conditions matters will not improve but on the contrary will tend to grow worse. As time goes on we find paying patients grow fewer each year. We go on hoping for better times only to encounter worse ones. We think that possibly depression in commercial business is affecting the situation but, on looking over our books, the unfortunate fact is demonstrated, whether the times be good or bad commercially, our business year by year has been progressively worse. This shows that there must be something radically wrong in the conduct of our affairs, that is, that the prosperity of the community at large does not necessarily mean greater financial returns to the profession. The average physician at present is unable to earn more than a bare living and there are many who cannot even do that. What will be their position a few years hence? This situation not only affects the poor men in the profession, but it also concerns those who are now financially comfortable; for, with the progressive decline of income they will eventually find themselves in the same distressing situation as those who are earning but a bare living at present. It may be thought that I exaggerate the poverty of the profession, but I beg to call the reader's attention to the fact that a short time ago one of the representative medical societies of our city with a membership of about one thousand

physicians called for a subscription of two dollars from each member. How many responded? Less than one-third. An alumni dinner of a class of seventy-nine physicians, graduated during recent years, had a dinner at five dollars a plate. How many were present? Only six!

It is indisputable that the physician is the only real altruist in any community. He alone endeavors by every means in his power, with all his knowledge, scientific, economic, and ethical, to combat disease which is his only resource of livelihood. He is himself or through his representatives constantly making researches in the causation of diseases and the methods of limiting their spread or preventing their occurrence; and this is done without any remuneration whatever. What other profession or trade does anything approximating to this work of the physician? He has always subordinated his personal interests, the most vital to his existence, to the interests of his fellow man. Can it be possible that the profession we all love, through poverty, will disintegrate, become disorganized, lose its high ideals and descend to baser motives? Can it be possible that as fine a class of men as there is in the community, who give more to charity than any other class, who sacrifice their personal well-being for others and who have given untold benefits to the world are going to the wall? There is a general impression among medical men that the position taken by the public toward the physician is unfair, sordid, and selfish. It assumes that the doctor is a public altruist, who may disregard his obligations to his family and to himself, at all times, in order to serve the public. This finds expression in the disregard of obligations to the physician and in the unjust discrimination against them by our lawmakers. This singular attitude of a people toward a class of men who are continually working for its benefit is a cause of resentment, sorrow and regret to the profession.

Let us not be unjust to the public. We have not taken it into our confidence. Ours is an exclusive profession and has kept its affairs to itself. So how could the public know our real economic condition? Not knowing the real facts, it judges from surface appearances. Many think we are paid for our services in hospitals and dispensaries. How often we hear the remark: "Oh, you doctors have plenty of money!" The abuses that the profession suffers from are of their own making, and the remedy is in their own hands. The remorseless law of evolution must be met. Great changes have been and are now going on in economic conditions of this country. Lines of thought that would formerly do will not answer now. Combination, organization and fraternity now make for progress. There is absolutely no hope for better economic conditions in the profession without an organization whose sole work shall be devoted to improve these conditions. Our present medical societies cannot do this work, for they are too much interested in medical research to have any time to give to economic conditions. Properly organized with but one purpose in view, there is not the slightest doubt that we can remedy many of the existing evils and prevent future ones from afflicting us. Does anyone suppose that the numerous bills inimical to the medical profession would have been passed by the State Legislature had the seven thousand physicians of Greater New York been organized for economic purposes? Does anyone suppose that a committee representing such an organization would be kept waiting hat in hand outside the legislative chamber while some small ward politician is promptly admitted to the inner sanctum? The ward politician receives greater consideration than the doctor because he has an organization behind him, and it will always be so until the physicians have sufficient strength through organization to insist upon a square deal. Some medical men advocate State control of physicians, that is, the State should pay salaries to them for services to the community. Such an arrangement would constitute a condition of paternalism and would place us under political domination. This would degrade the profession and tend to retard progress.

In order to secure the proper support of the public, we should no longer conceal from it our real economic condition. Medical men should write extensively on the subject in magazines and the press, so that the community may have an opportunity of obtaining the real facts and be fair to us. Influences are at work to induce physicians to organize for the purpose of investigating the economic condition of the medical profession and to devise means to solve the problem. The situation demands immediate action. Are you going to permit this state of affairs to continue? It means the loss of your independence, your happiness, and the cherished traditions of your profession. Let us bury our selfish motives and petty jealousies and support this movement with all the intelligence and energy at our command.

MANIC-DEPRESSIVE INSANITY.*

By ARTHUR K. PETERY, M.D.

NORRISTOWN, PA.

ASSISTANT PHYSICIAN, STATE HOSPITAL FOR THE INSANE.

In considering the manic-depressive groups of insanities, it might be well to first take up the definition as given by Kraepelin, which is as follows: Manic-depressive insanity is characterized by the recurrence of groups of mental symptoms throughout the life of the individual, not leading to mental deterioration. These groups of symptoms are sufficiently well defined to be termed the manic, the depressive, and the mixed phases of the disease. The chief symptoms usually appearing in the manic phase are psychomotor excitement with pressure of activity, flight of ideas, distractibility, and happy though unstable emotional field. In the depressed phase we expect to find psychomotor retardation, absence of spontaneous activity, dearth of ideas and depressed emotional attitude; while the symptoms of the mixed phase consist of various combinations of the symptoms characteristic of the manic and depressive phases.

This classification as one of the insanities as devised by Kraepelin has been the subject of much criticism, which appears unjust. It is one of the most common forms of insanities; the average percentage of admissions to hospitals ranges between twelve and twenty per cent. and many of the cases appearing under forty or fifty years of age and diagnosed according to the old classification as melancholias and manias would probably come under this present classification.

Of the causative factors in this disease heredity stands out in the foreground and ranges high in the percentage of the relatives who have often suffered from the same form of psychosis; frequently

*Read before the Montgomery County Medical Society, June 26, 1912.

the individual is noticed to be defective before the onset of the disease; some are peculiar, others are excitable and subject to frequent and apparently causeless changes of mood.

Alcoholism plays also an important role in this as well as in the other forms of insanities. In a study of the heredity of eighty cases the following results were determined: On the paternal side of the cases there was a history of twenty-four who were distinctly alcoholic, eight were insane, three were tuberculous, and one distinctly neurotic. On the maternal side there were three who were addicted to the use of alcoholics, seven were insane, four were tubercular, and one was subject to distinct periods of depression. There were eight of the cases who had insane brothers and five whose brothers were excessive users of alcoholics, and twelve had insane sisters.

The father and paternal uncle of one patient now in this hospital with this psychosis, both died here and probably with this same form of insanity. Another case, who is a lawyer by profession, had one brother who was an epileptic, a nephew an epileptic, one brother committed suicide during a period of depression, a first cousin was an idiot, and another cousin insane. Still another case had his mother and maternal grandmother commit suicide during periods of depression.

There were sixteen cases in which no taint of insanity was found, however; in two of the sixteen the history was unsatisfactory.

This psychosis almost always occurs independently of external causes; its nature is rather obscure, as there are no demonstrable anatomical or pathological lesions characteristic of the disease. The symptoms of this disease divide themselves into two large groups, the manic and depressive, with a third group which consists of a combination of the symptoms of these two groups called the mixed phase.

The manic phase might be further divided into the states of hypomania, mania, and delirious mania; the first representing the mildest type, the second the more severe, and the third characterized by a "pronounced dreamy clouding of consciousness, intense psychomotor activity, great incoherence of speech, a marked flight of ideas, numerous hallucinations, and dream-like delusions." However, this group is rather rare.

In this phase of the disease consciousness in the severe cases might be disturbed, while in the less severe the disturbance is very slight. Apprehension of external impressions in the manic state is usually disturbed, due largely to the great distractibility of attention. Memory in the milder forms is seldom disturbed, while in the more severe cases it is not always correct. Disturbances of thought are quite prominent symptoms; in the less severe grades they may show flight of ideas, but in the more severe conditions this is quite pronounced; their conversation is broken up, there is no controlling goal idea, and consequently their conversation consists of many words, but few finished ideas. The following is an extract from the notes of such a case: "Three cheers for the red, white and blue—the lodges want me—throw away the keys and die (the latter caused by an attendant coming into the room and unlocking a closet)—never was a lunatic. I have been hung. Go to the State doctor," etc.

In the mild state hallucinations are rather rare, while they may be present in the more severe, they are usually transitory and not persistent features. The delusions are usually those of exaltation; they boast of their own actions and abilities and often the more severe cases think they are persons of rank and of great importance, etc.

The most prominent symptom of all is their marked psychomotor activity. They are restless, doing something all the time; however, only things that are agreeable to them, and consequently changing from one thing to another. Their sense of fatigue seems diminished and they see no need for rest. In the more severe cases they may become destructive, decorate themselves with all sorts of things; are usually rather irritable, and if crossed become quarrelsome.

The duration of these conditions varies from several days to several years.

The depressed phase is further divided into two groups: that of simple retardation and the delusional form. The first is defined as the "mildest form of the depressive states and is characterized by the presence of simple retardation, unaccompanied by any hallucinations or delusions." The onset is rather gradual. They lose interest in their surroundings, have difficulty in expressing themselves, are undecided which words to use in the formation of their sentences; volunteer little or no conversation; consciousness is only slightly clouded, although they appear rather dull, are inactive; their work appears much larger than it really is, and in everything they do their retardation is evident. Their emotional attitude is that of depression, frequently talk of suicide as they have nothing to live for, nothing holds any pleasure for them and they worry over all sorts of imaginary troubles.

The second division, or the delusional form, is characterized by the presence of varied delusions, especially of self-accusation and of a hypochondriacal nature, in addition to the evidences of retardation. These patients become markedly depressed, think that they have committed unpardonable sins, are responsible for much embarassment to their families, that they must die; there is marked psychomotor retardation present. They are quite inactive, answer questions poorly or not at all; are unable to apply themselves to any form of mental work. External stimuli make their impressions slowly, and when once impressed do not give way to other ideas with any degree of rapidity. Numerous hypochondriacal delusions may be present, that they are seriously ill, their stomachs are all withered, their blood contains no corpuscles, and their conversation chiefly centers about their delusions. Hallucinations are rather uncommon, although they might be present. At times some cases are rather restless, pace up and down the ward and frequently pull patches of hair from the scalp; they may even attempt suicide. Occasionally in this condition a state of stupor might develop; consciousness becomes quite clouded, retardation is quite marked, they make no attempts to care for themselves. External stimuli make little or no impressions; they are rather restive, quite fearful, and frequently make unexpected attempts at suicide.

The third group or the mixed phase, there occurs simultaneously varying combinations of some of the fundamental symptoms characteristic of both the manic and depressive phases; this group is most prominently seen when the cases are passing from one group into the other; for instance, the excitement might give way to retardation, their feelings of exaltation to those of a more depressive nature; their flight of ideas to retardation of thought or vice versa.

There are six types of this mixed phase, the first of which is irascible mania. This is a manic condition in which a marked degree of irritability and aggressiveness is present. The second is depressive excitement, which is a condition where the emotional attitude is that of depression, although they are quite restless and fault-finding with their environment.

The third, that of unproductive mania, which is the manic state, although the patients are slow in perceiving external stimuli. There is pressure of activity, but not so marked as in mania, they are irritable and frequently inclined to be mischievous.

The fourth or manic stupor, which often occurs during a pronounced manic state, they become quite dull, take no notice of their environment, are resistive, and frequently have to be fed mechanically.

The fifth division is the depression with a flight of ideas and the sixth the depressed state with flight of ideas and emotional elation; these latter names mention the chief characteristic of their condition.

The course of manic-depressive insanity is marked by the recurrence of the various phases. Some cases clear up between the various stages and are able to attend to their business affairs, returning again to the hospital at their next attack. One patient in mind has been admitted to this hospital seven times. There are several who have been here three or four times. Some of the attacks occur at regular intervals and have earned the name of circular insanity for this disease; others are irregular in their recurrence; frequently they pass from one stage to the other immediately. In a large majority of cases the first attack is that of depression and several depressed periods may be had before a manic period is reached. On the other hand, if the first attack is manic in type, the following attacks are usually manic. The mixed phase does not usually occur until after they have had several attacks of either the depressed or manic phases.

The prognosis in this condition as far as a permanent cure is concerned is bad, but as far as each attack is concerned is favorable, unless the condition is so severe as to cause them to pass directly from one attack into another. Mental deterioration occurs in only a small percentage of the cases.

Under the treatment of this condition, as well as in all the forms of insanities, the first thing to be considered should be the prophylaxis. In view of the pronounced hereditary findings (only twenty per cent. of the cases studied being without taint) and the poor chances of the offspring to escape some form of mental disease, the prevention of intermarriage between persons of such tendencies should be made possible.

But as we have the conditions to combat, they, too, must be considered. The treatment of the various phases differs and is only effective during the attack, with the exception of where the attacks are superinduced by the excessive use of alcoholics and in which the total abstinence might lengthen the intervals between the attacks.

In the treatment of the manic phase all irritating influences should be removed. If possible they should be sent to a hospital, for the home treatment is always more or less unsatisfactory. The activities of the patient should be lessened as much as possible; rest in bed is about the best way to accomplish this. In the use of the baths opinions differ, but are usually controlled by the case. Some physicians prefer warm baths, others cold. If the baths are not available the various packs might be tried. The sedatives, such as the bromides, hyoscine, paraldehyde, and trional are frequently employed. In cases of extreme excitement the case must be carefully watched for symptoms of collapse and strenuous treatment resorted to if required. The general management of the case is also an important item. A nurse who is able to control herself under all circumstances, be free from prejudice, but still be able to maintain the proper discipline for the benefit of the patient, should be selected.

Frequent weighing of the patient is also necessary, so as to keep informed as to the proper nourishing of the case. An increase in weight is also frequently an indication of the mental improvement of the patient.

The treatment of the depressed phase varies according to the condition of the patient; if he is run down physically the general health must be improved; he must be watched carefully to see that sufficient food is consumed; should be weighed frequently. If quite weak he should be placed in bed and, if possible, in the open air. If physically able he should be persuaded to perform some light work, such as weaving of baskets, braiding of rope, or, in fact, anything that will tend to lead his thoughts away from his own condition. Hospitals should have workrooms under capable supervision for this purpose. If the patients are inclined to sleep rather poorly the various hypnotics may be employed. If the continued use of the hypnotics is necessary, these should be varied.

The patient must be guarded continually to prevent suicidal attempts, even though apparently improving, for his recovery may just be an interval between attacks.

A CASE OF MYOPIC REFRACTION RELIEVED BY EYE EDUCATION.

By W. H. BATES, M.D.,

NEW YORK.

For more than ten years the method of eye education in relieving functional disorders of vision has impressed me with its value. The following case is a type of many hundreds benefited and is described with some detail in order to illustrate the method of treatment.

An intelligent man, aged 25, was seen August 30, 1912. Right vision 1/5 normal. Has been wearing constantly for this eye—1.00 D. S.—0.50 D. C. at 180 deg., vision normal. Left vision, 2/3 normal. Wearing a plane glass for this eye.

After an ophthalmoscopical examination the patient was told that he was not near sighted and did not need glasses to improve his vision but that his eye defect was due to improper use and was curable by a little instruction in the art of seeing. To this method of treatment he agreed, followed instructions and obtained normal vision without glasses in forty minutes, which pleased him more than a prescription for glasses.

First, the right or defective eye was covered by a screen. Then the better eye, the left, was instructed in the proper methods of obtaining normal vision with the aid of a Snellen test card at 20 feet. He was told that perfect sight was only possible by regarding one letter of the distant card at a time or by regarding a small part of each letter in turn. It was important to regard one letter on a line in such a manner that the one following it appeared

less distinct. This was in the beginning difficult for him to do because he said he could see all the letters of the same size on one line equally well and at the same time or simultaneously. He was convinced that he did not see with the same distinctness all the letters on one line after he tried to read them when regarding a point several feet to one side of the card. He was urged to make an effort to see clearly one letter while its neighbor appeared less distinct. In a few minutes this was accomplished. The next step required more concentration, namely, to acquire the ability to see the top of a small letter better than the bottom or to see the left side of a small letter better than the right side of the same letter. It was difficult for him to accomplish this because he had a strong tendency or inclination to attempt to see a number of letters simultaneously or to regard all parts of one letter at the same moment. He was anxious to do the proper thing and tried to understand and carry out my suggestions. He was liable to forget the directions and try something else which might occur to him. But by insisting that he try my methods instead of experimenting with his own inclinations he was soon able to say that when he regarded closely one part of a small letter the other parts of the same letter were less distinct. He was learning the proper methods of obtaining normal vision and became conscious of the methods practised by the normal eye, usually unconscious, to see properly and perfectly.

Having now learned the necessity of directing the eye accurately to distant objects in order to obtain good vision, his attention was next called to the importance of a proper focus. He was requested to hold his fore finger at ten inches from his left eye with the tip of the finger placed close to a line from the eye to the large letter on the Snellen card. When he regarded the tip of his finger closely he was unable to distinguish the distant letter at the same time. He was told that this phenomenon was one of great importance as the cause of the defective vision of the other eye, the right, was the fact that the eye was focussed for near vision when regarding distant objects. He learned that he could not see even large letters on the Snellen card at 20 feet when the better eye, the left, was focussed for the near or reading distance. Although self evident to many people he had not realized this fact before. I believe that the few minutes devoted to the demonstration that the normal eye could not see distant objects clearly when focussed for near vision was an important factor in the subsequent rapid relief of the defective vision of the poorer eye, the right, by education. The demonstration was made quickly and in less time than one might expect, about five minutes. At this time it was found that the vision of the left eye had improved from vision of 2/3 to vision normal.

The left or normal eye was then covered by a screen during the time that the right was exercised. He was shown how the vision of the right eye was further lowered when the gaze was directed to one side of the distant card. When he regarded a point three feet or further to one side of the card he was unable to distinguish the large letter. The point of eccentric fixation was brought closer and closer to the card until he was convinced that he saw the letter worse when he looked only a few inches to one side instead of directly at the letter. Central fixation or the ability to direct the eye directly at one point and to hold the eye steady was difficult and was not accomplished immediately. He was surprised when told that he did not practise central fixation. When the effort was made to see a small letter unsuccessfully the eye was seen to move in various directions. I come now to a description of an original procedure which gave him complete relief in some minutes. It has proved of such great value in so many of my cases of real and functional myopia that I feel that it should be emphasized. It has never done harm. It has always been beneficial. All oculists may disagree or oppose my facts with theories while they are unable to stop the increase of many cases of myopia even with glasses. The procedure is as follows:

He was directed to make an effort to see a small object held so close to his eye that it was impossible for him to see it clearly.

For convenience a fine point on the end of my finger nail was the visual object employed. It was held about three inches in front of his eye while he made strenuous efforts to see it, but was not successful. In a short time his vision for distance was tested and found improved. By alternately regarding the finger nail at three inches and the Snellen card at 20 feet the vision rapidly improved from vision 1/5 to the normal. The good result was obtained in less than twenty minutes. He was told that the relief was not due to suggestion, hypnotism, or to some unknown agency, but that he became able to see as he should, normally, because he had learned how to use the eye properly by education.

To prevent a relapse he was recommended to practise daily regarding small letters or small objects at a distance in such a way that he would see one part better than another part of a small letter or other small object. He was to do this with each eye separately, covering or closing the other eye. He was given a Snellen test card for exercises in distant vision.

938 St. Nicholas Avenue.

Neurofibroma of the Supraorbital Nerve in the Orbit.—W. H. Battle reports the case of a girl aged 22 years who, ten years ago, was under his care for a neurofibroma of the left median nerve above the internal condyle of the humerus. He removed it without difficulty, and there had been no trouble with the nerve since. Five or six years ago she came with a pachydermatocele on the right side of the head, behind the ear, two inches in circumference. There was a change in the bone underneath. The portion of scalp affected was excised, and numerous little plexiform neuromata were found. The surface of the skull could be felt to be considerably changed, the external table appeared to be hollowed out, as if there had been pressure over it by a firm tumor. A few days ago she came with neuralgic pains over the right forehead and scalp, which appeared to be due to small neurofibromata in the supraorbital nerve. The patient thought her pain was due to them, but the tumor which appeared to be about the size and shape of a small date-stone, was found on examination of the course of the nerve at the junction of the inner with the outer two-thirds of the orbit. The lesion was awkwardly placed for operation, and it was a rare position for neuromata. She had molluscous tumors about the body, with pigmentation of the skin over them. No other disease or tumors could be found anywhere. Apparently she was naturally dark-skinned, and the author thought it possible from that and other signs there was some mixed blood in her. Her brother had had a painful tumor removed from the right side of his neck, and the mother was said to have tumors on the back of the left forearm.—*Proceedings of the Royal Society of Medicine.*

MEDICAL RECORD.

A Weekly Journal of Medicine and Surgery.

THOMAS L. STEDMAN, A.M., M.D., EDITOR.

PUBLISHERS

WM. WOOD & CO., 51 FIFTH AVENUE.

See fourth page following reading matter for Rates of Subscription information for Contributors and Subscribers.

New York, November 9, 1912.

THE PROBLEM OF THE MENTALLY UNBALANCED AND DEFECTIVES.

No question bulks more largely in all civilized countries than the increase of the insane, the defective, and the mentally unstable. It would be superfluous to discuss the point as to whether the increase is more apparent than real. Although statistics may be to some extent misleading, there can be little doubt that the increase of the various forms of mental defect is only too real. When the conditions of modern life are taken into consideration most of the causes for the increase stare us in the face. The trend of population to overcrowded centers, the conditions under which toil is carried on both in factories and in homes, the high pressure at which the toilers labor, all provide obvious explanations for the large number of individuals whose brains give way under the strain or who by heredity and environment are unfitted for the strenuous battle of life. The most sinister feature of the situation, however, is the fact that it is not only in old overworked, overcrowded, and in some respects poverty-stricken Europe that mental defects and aberrations are daily becoming more evident, but in sparsely populated lands, such as this country and Canada. At the meeting of the Canadian Medical Association, held a few months ago in the far northwest, a somewhat lamentable picture was drawn of the state of affairs with regard to mental disorders in that almost virgin territory. A bitter cry has gone up recently from this State of New York relating to the alarmingly rapid increase of the population of institutions for the insane and feeble minded, and in all parts of the country thinking men and women are bewailing the degeneration of the people mentally and physically. Now, allowing for exaggeration, and probably some exaggeration exists, there is, nevertheless, a sound foundation for these alarmist cries.

A letter contributed to the *New York Times* of Oct. 24, 1912, by Dr. Lewellys F. Barker of Johns Hopkins University provides quite sufficient ground for the statement. This authority says that more than 200,000 of our people are insane, and the number is increasing at the rate of three to four for every increase of 1,000 in the population. Exact data regarding imbeciles, epileptics, and criminals are lacking, but the numbers are known to be large. Barker suggests that support should be given to the National Committee for Mental Hygiene founded in 1909 and gives it as his opinion that there are great fields in which such a committee may advantageously work: First, in supporting and directing original inquiries by experts regarding the problems of mental hygiene; second, in educating the nation to use the knowledge already placed at our disposal; and third, in organizing agencies by which the campaign is to be carried on, and in cooperating with other associations, national and international, which have allied philanthropic aims.

Of course, the root of the matter is to prevent as far as is possible the conditions which tend to produce mental disorders and to create an atmosphere of mental hygiene. The conditions which bring about forms of mental disease are many and varied and the basic remedy lies in social reforms. Syphilis, for example, is a potent factor in the causation of mental derangements and the stamping out of this disease is more a social problem than anything else. As Barker truly says, the task which the National Committee has set itself is an enormous one, but it will not be too great for our heads and hands once our American people have it at heart. Educate the mass of the people as to the causes of insanity and in the course of time these causes will be removed and a race sane in mind and sound in body will be the result.

SEX DETERMINATION.

DRELINCOURT, in the eighteenth century, brought together 262 "groundless hypotheses" concerning the nature of sex and its determination; Blumenbach followed him with the caustic observation that Drelincourt's own theory made the 263d; and subsequent observers have added Blumenbach's theory of "formative impulse" to the scrap heap. Today perhaps the most prominent of the theories of sex determination are the five following: 1. That environmental influences, operating on the sexually undetermined offspring (after fertilization) may at least have a share in determining the sex. 2. That the sex is undetermined until the germ cells unite in fertilization, when it is decided by their relative condition, or by a balancing of the tendencies they bear, neither sperm nor ovum being necessarily decisive. 3. That the sex is fixed at a very early stage by the constitution of the germ cells as such, there being female-producing and male-producing germ cells, predetermined from the beginning and arising independently of environmental influences. 4. That maleness and femaleness are Mendelian characters. 5. That environmental and functional influences, operating through the parent's body, may alter the proportion of effective female-producing and male-producing germ cells.

Concerning all these theories one may venture upon a paraphrase of the "Scotch verdict," that nothing conclusive has as yet been proven by any one of them, or any combination of them. We are, scientifically speaking, after centuries of theorizing and experimentation, about as much in the dark as ever regarding what factors determine sex and as to the possibility of bringing about, by human volition, the sex that might, for reasons of State

or otherwise, be desired. J. Arthur Thompson, Regius Professor of Natural History in Aberdeen University, who (with P. Geddes) has written "The Evolution of Sex," states his conviction that there is no sex determinant or factor at all, but that "a rhythm of bodily changes" settles the sex of the offspring. Throughout sentient, organic nature there are alternatives or antitheses between liberal expenditure of energy and a more conservative habit of storing. These phenomena primarily depend on the ratio between disruptive (catabolic) processes and constructive (anabolic) processes; and the sexes are regarded as expressions of the same contrast within a given species.

From this viewpoint the profound constitutional difference between the male and the female, which makes of the one a sperm-producer and of the other an ovum-producer, is due to an initial difference in the balance of chemical changes. The female seems to be relatively more constructive, whence her greater capacity for sacrifices in maternity; the male relatively the more disruptive, whence his usually more vivid life, his explosive changes in action. (It is, as has been said, that woman is the physiological miser, man the physiological spendthrift.) In Thompson's words, "the sexes express a fundamental difference in the rhythm of bodily storage and discharge." This initial difference not only leads to the primary functional distinction between male and female, but it also determines, either from the start, or after maleness and femaleness have been in part established, what particular expression will be given to a whole series of secondary characters—both structural and functional—whether a masculine or a feminine expression. Many series of facts would lead to the conclusion that each sex cell has a complete equipment of masculine and feminine characters; and perhaps the liberating stimulus which calls the one set or the other into expression or development, is afforded by the conditions of change that have been set up in the cell structure.

Thompson considers that, as regards the general question of the determination of sex, we are probably on safer ground when we pass from the higher animals to such organisms as starfish and sea urchins, in which it is often impossible, without the microscope, to distinguish the two sexes. It were profitable to press the problem to its simplest expressions, as in volvox, a beautiful sphere of cells with whiplike processes, which phenomenon illustrates a body in the making. From this ball of cells reproductive units are sometimes set adrift, dividing then without more ado to form other colonies. But in other conditions, when nutrition is checked, a less direct mode of reproduction occurs: Some of the cells in the ball become large, well-fed elements—the ova; while others, less constructive, fade from green to yellow, and divide and redivide into many minute units—sperm cells.

Sex may change in the course of life, as in the experiment of Prof. F. Braem with a simple Annelid worm (*Ophryotrocha puerilis*). A female which had ripe eggs and showed no trace of double sex was divided in two; the head portion, with thirteen segments, was isolated. In three weeks it had regenerated several segments with lateral feet; it was then killed and found to be male. Braem suggests that in consequence of the amputation the very young indifferent germ cells had developed into male cells, which require less subsistence than ova. It is certain, however, that the reproductive organs had changed from producing eggs to producing sperms; such cases would indicate that sex difference is fundamentally physiological.

NATURE OF ECK'S FISTULA INTOXICATION.

In building up a doctrine of hepatogenous autointoxication due to hepatic insufficiency, pathologists have usually laid great stress on the line of evidence obtainable from the elimination of the portal circulation. Nutriment, chiefly proteins, entering the systemic circulation without a previous so-called detoxicating or purifying of the liver, was apparently shown to be highly toxic to the organism, and the organ was hailed as a "line of defense" from this viewpoint.

That the liver exerts a detoxicating action in certain cases appears to be proven, nor is there anything violent in such a conception, since all the ingesta are temporarily arrested in this gland, and opportunity is afforded for the binding and storage of certain substances, chiefly extraneous toxic agencies, in connection with the anabolic and catabolic activities of the cells. But that the liver has any special function of detoxicating ordinary nutriment is probably insusceptible of proof by Eck's fistula experiments. If the liver is actually eliminated then the fact remains that these animals sometimes keep well for weeks even on an exclusive protein diet. The claim is made, however, that the liver is not eliminated—that the substances which enter the systemic circulation eventually reach the liver again and again by the hepatic artery until the same end is attained as by passage through the portal vein.

How then explain the toxic syndrome which sometimes appears in Eck's fistula dogs?

At a debate last June before the Physicomedical Society of Würzburg (*Muenchener medizinische Wochenschrift*, October 8) the claim was made that hepatic insufficiency does not in the least develop. Bile and urea are produced in their full values. The intoxication sometimes seen can hardly be explained save by an anaphylaxis. The operation, no doubt, prejudices the digestion in some way, so that an autotoxemia develops, comparable with those seen in disease. The liver would, doubtless, widely detoxicate these substances or at least deprive them of any anaphylactic power; but entering the systemic circulation they first sensitize the blood albumin and later produce the characteristic shock. The same class of substances is doubtless responsible for the development of hepatic cirrhosis.

ANAPHYLAXIS AND SHOCK IN GENERAL.

Since it has been learned that anaphylaxis is manifested in certain cases by purely shock or collapse symptoms, the question of an anaphylactic component in so-called traumatic shock is given new

importance. Shock following injury has always been a mysterious phenomenon; for while often attributed in part to hemorrhage and psychic inhibition, to pain, and to the anesthetic used, there is a pronounced element which is not dependent upon any of these factors. The old writers on clinical surgery have often warned us against shock as a sequel of relatively insignificant procedures of minor surgery, notably of puncture of cysts. It was a foregone conclusion that sooner or later this phenomenon would be attributed to an anaphylaxis. The phenomenon has been noted with especial frequency in connection with hydatid cysts, and in past decades attempts were made to show that the possibly absorbed echinococcic fluid was eminently toxic. This claim was naturally disputed, but eventually by French writers the possibility of a pure anaphylaxis was interjected.

At a meeting last summer of a medical society in Hamburg (*Muenchener medizinische Wochenschrift, October* 15) Graetz brought up this subject, and adduced evidence to show the probability of anaphylactic shock following rupture or puncture of echinococcus cysts. It is known that the albumin in the contents of the latter is heterologous, and thus it engenders the formation of antibodies in the blood, so that the possibility of a serodiagnosis has been claimed. The author, however, is as yet noncommittal in regard to the existence of a pure anaphylaxis, for the possibility of a synchronous intoxication must not be excluded outright. Certain cleavage products of the albumin of these cysts are believed to be able to cause an intoxication syndrome which much resembles the symptoms of anaphylaxis. The differences between a simple intoxication and an anaphylaxis are of course sufficiently well known. In the former there is no history of previous sensitization, such as might be supposed to result from the first reaction of the organism toward the incorporation of the parasite.

Reminiscences of Lister.

Since the death of Lister there has been a mass of writing bearing upon his qualities as a surgeon and as a man. From the material it is gathered that Lister was almost an abnormally modest and conscientious man. In these days of self advertisement, ofttimes carried to unseemly extremes, it is at once remarkable and refreshing to meet with a man of this type. On the other hand, it is a matter for regret that the great surgeon carried his conscientious scruples to such lengths that during his lifetime and while pursuing those experiments which ended in the revolution of surgical methods, he refused to publish or in any way to make public the results of his investigations. Sir W. Watson Cheyne probably knew more of Lister's work and life than any man and in his presidential address before the Medical Society of London, on October 14, 1912 (*Lancet*, October 19, 1912), he made his hero the theme of his discourse. In the course of his remarks Cheyne said that the part of Lister's work which concerned what may be termed the experimental stage, although he had convinced himself that he was on the right track with regard to the abolition of septic diseases, he never would publish. Cheyne often urged him to do so, and offered to collect the material for him if only he would publish it, and failing that, to act as Boswell to his Johnson if only he would permit the publication from time to time of records of the actual practice he was carrying out, but Lister's reply was always in the negative. The great objection in his mind was that he felt that until every surgeon was convinced of the necessity for asepsis and of the value of the methods which he advocated, and was efficiently skilled in them, it would be a very serious matter to publish successful results of operations which it would be practically criminal to perform unless complete asepsis were secured. He feared that the publication of such cases might induce others who were neither convinced of the necessity for the aseptic precautions which he advised, nor skilled in that work, to perform similar operations with disastrous results to the patient. He could not but feel that if this occurred he would be a party to such disasters, and that such results would reflect on and prevent the extension of the new method of treating wounds which he looked on as a matter of much more vital importance than the introduction of new methods of dealing with surgical cases. In a few words, Lister was one of those rare men, who in this material age seem to be becoming more rare, who regarded the welfare of mankind as of far more importance than the gaining of fame and money. It is too often the case nowadays that a discovery will be announced before its details have been properly worked out, apparently because the discoverer is afraid he may be forestalled, and not infrequently the commercial aspect is given a prominence which to a man of Lister's way of thinking would be abhorrent. If Lister erred on the side of modesty and self effacement it was a fault on the right side.

Acidosis in Diabetes.

The causation of diabetic coma is still to some extent obscure. Acidosis, according to the latest investigations, clinical and experimental, is the main factor in the pathogenesis of this condition, but there are observers who hold that acidosis does not explain all the features of diabetic coma. H. Montlaur, writing on the subject in the *Medical Press and Circular*, October 16, 1912, points out that Lépine believes that diabetic intoxication is derived from both beta-oxybutyric acid and other concomitant toxins. Morel and others, however, in view of the fact that the reduction of the alkalinity of the blood due to the acidosis does not account for the production of coma, hold that the substances which tend to enhance the toxicity of the acetone bodies belong to the quaternary derivatives of albumin. They believe that the solution of the problem lies in the products of disintegration of the molecule of albumin, the peptides, which are eliminated by the urine as part of the unestimated "organic residue." These peptides may be produced in unduly large quantities, or they may fail to undergo destruction, or it may be that, produced only in normal quantities, they are the outcome of an abnormal process of elaboration. Labbé holds that acidosis is the principal cause of diabetic coma, and in fact says that acid toxicity stands for three-quarters of the toxicity of the condition. In consequence he regards intensive albuminization of the organism as the basis of the treatment of diabetic coma.

News of the Week.

Medical Clinics.—Over two hundred physicians, mostly alumni of the Iowa State University, attended the annual alumni clinics of the University College of Medicine in Iowa City on October 22 and 23. At the opening session President Bowman of the University delivered an address and was followed by the dean of the medical school, who gave the history of the school. In the evening Dr. William Jepson of Sioux City held a general surgical clinic.

The fourth annual reunion and clinic of the Western University Medical Department was held in London, Ontario, on October 21, and was attended by nearly four hundred men. Dr. L. F. Baker of Johns Hopkins University conducted a medical clinic during the afternoon and Dr. William J. Mayo of Rochester, Minn., spoke on cancer of the stomach and intestine, giving a lantern demonstration. The following officers of the alumni were elected: *President*, Dr. Hugh A. McCallum, London; *Vice-President*, Dr. Frederick Guest, St. Thomas; *Secretary*, Dr. E. Spence, London.

Clinical Conference.—The Medical Board of the Children's Hospitals and Schools on Randall's Island, New York, held a clinical conference on Tuesday afternoon, October 29. The following topics with illustrative cases were discussed: Radical mastoid operation in children; Ethmoiditis in Children; Effects of oophorectomy upon the mentality of idiots; Reconstruction of the hip joint by bone grafting; Value of the open-air treatment of pneumonia; Chronic Purulent conjunctivitis; Flaccid cerebral diplegia; Goiter complicating cretinism; Panniculus adiposus and marked enteroptosis relieved by resection of the abdominal muscles; Complete hysterectomy and appendectomy under spinal anesthesia.

No Common Cups.—The Secretary of the Treasury on October 30 issued an order prohibiting interstate carriers from providing any drinking cup, glass, or vessels for common use in cars, vessels, or other conveyances or in depots or waiting rooms used by the passengers of such railways. The regulation does not forbid the use of drinking cups, glasses or vessels, which have been thoroughly cleansed by washing in boiling water after use by each individual, nor the use of sanitary devices for individual use only. The Treasury Department did not find that it had authority of law permitting it to order that common carriers shall furnish individual drinking cups to passengers, its authority extending only to the prohibition of vessels for common use. Several of the States have laws compelling railways to furnish such individual cups, while others merely forbid the use of the common cup as is now done by the Federal Government.

American Surgical Association.—This Association has appointed a committee, consisting of Dr. William L. Estes, South Bethlehem, Pa.; Dr. Thomas W. Huntingdon, San Francisco; Dr. John B. Walker, New York; Dr. Edward Martin, Philadelphia, and Dr. John B. Roberts, *Chairman*, 313 S. 17th street, Philadelphia, to report on the operative and non-operative procedures of closed and open fractures of the long bones and the value of radiography in the study of these injuries. Surgeons who have published papers relating to this subject within the last ten years, will confer a favor by sending two reprints to the chairman of the committee. If no reprints are available, the titles and place of publication are desired.

Street Accidents.—During the month of September 24 persons were killed and 178 seriously injured in accidents on the railway and street car lines of New York City. This is an improvement over last September, when 37 persons were killed and 196 seriously injured. The total number of accidents, however, was increased, numbering 5,901 in September, 1912, as compared to 5,720 in September, 1911, and 5,439 in September, 1910.

Hearing on Tuberculosis Hospital.—Dr. Eugene H. Porter, New York State Commissioner of Health, held a hearing in White Plains, N. Y., on October 28, at which arguments for and against the establishment by the Westchester County Board of Health of a tuberculosis Hospital at Yorktown, were heard. The residents of Yorktown are opposed to having the hospital on the site selected, a two hundred and seventy acre farm; and there is also some opposition from New York City because of its situation in the watershed of Croton Lake and the consequent danger of contamination of New York City's water supply. The decision of the matter rests with the State Board of Health.

New Pennsylvania Hospitals.—The managers of the Children's Hospital of Philadelphia have begun the collection of a fund of $1,000,000 for the erection of new buildings and the formation of an adequate endowment fund. A site having a frontage of 300 feet and comprising one and a half acres, situated on Eighteenth street and extending from Bainbridge to Fitzwater, has already been purchased at a cost of $100,000, provided for by a donation from one of the managers. The contemplated buildings will be set well within the grounds and be surrounded by lawn and shrubbery. Work upon the out-patient annex is to be started at once. Dr. Robert G. LeConte is chairman of the building committee.

The sum of $0,500 has been raised for the establishment of the Abington General Hospital, which is to form a memorial to the two members of the Widener family lost in the foundering of the *Titanic*. Work will be begun as soon as pledges amounting to $100,000 have been secured, although the total amount desired is $250,000.

Montefiore Home.—The corner-stone of the new pavilion of the Montefiore Home at Gunhill road and 210th street, New York, was laid on October 27. The building will, it is estimated, cost $2,000,000. At the dedicatory exercises Mayor Gaynor delivered an address in the course of which he predicted State care for the aged, sick, and infirm at a no very distant day.

Hospital Dedicated.—The Joseph E. Shoenberg Memorial Hospital Building, which is a part of the National Jewish Hospital for Consumptives at Denver, Col., was dedicated on October 27. The building was erected at a cost of $40,000. At the same time announcement was made of a gift of $25,000 for the endowment fund of the hospital.

X-Rays in Gynecology.—Dr. Foveau de Courmelles of Paris has been asked to make a report on the use of *x*-rays and radium in gynecology for an address to be delivered before the combined sections of radiography and gynecology of the Seventeenth Congress of International Medicine, to be held in London on August 12 and 13, 1913. In order that the report may be as complete as possible, Dr. Foveau de Courmelles, who may be ad-

dressed at 26, rue de Châteaudun, Paris, requests that his colleagues send him their detailed observations on this important question.

Gifts to Charities.—By the will of the late Mrs. M. C. Dodge of New York, the Adirondack Cottage Sanitarium at Trudeau, N. Y., receives a gift of $10,000.

By the will of the late Laura A. F. Pichou of Philadelphia all of the books contained in her library are bequeathed to the Pennsylvania Hospital for the use of patients, while of her estate of $11,200, one-fourth each is devised to the German Hospital and the Home for Incurables of Philadelphia, for the establishment of free beds, and one-fourth to the Pennsylvania Hospital to be applied to the endowment fund.

Personals.—Dr. Paul Segond of Paris, professor of clinical surgery in the Faculty of Medicine of the University of Paris, and surgeon in chief of the Salpêtrière, died on October 27 from uremia.

Dr. Simon Flexner of the Rockefeller Institute, New York, delivered the annual Huxley Lecture to the Faculty and students of the Charing Cross Hospital, London, on October 31.

Dr. Anthony Bassler has been appointed clinical professor of medicine in the New York Polyclinic Medical School and Hospital.

Texas State Homeopathic Medical Association.—At the annual meeting held in Dallas on October 22 and 23, the following officers were elected: *President*, Dr. Frank H. Anthony, Dallas; *Vice-Presidents*, Dr. Charles C. Bowes, Greenville; Dr. T. E. Williams, Shreveport, La.; *Secretary*, Dr. J. H. Bass, Austin; *Treasurer*, Dr. W. D. Gorton, Austin.

Mississippi Valley Medical Association.—The following officers were elected at the annual meeting held in Chicago on October 23 and 24: *President*, Dr. Albert E. Sterne, Indianapolis, Ind.; *Vice-Presidents*, Dr. D'Orsay Hecht, Chicago; Dr. Hugh Cabot, Boston; *Secretary*, Dr. Henry Enos Tuley, Louisville, Ky.; *Treasurer*, Dr. Samuel C. Stanton, Chicago. New Orleans was selected for the meeting place next year.

Medical Society of Virginia.—At the annual meeting held in Norfolk on October 24 the following officers were elected for the ensuing year: *President*, Dr. Southgate Leigh, Norfolk; *Vice-Presidents*, Dr. H. S. MacLean, Richmond, and Dr. M. M. Pearson, Bristol, Tenn.; *Treasurer*, Dr. Mark W. Peyser, Richmond; *Secretary*, Dr. Paulus A. Irving, Farmville.

Wabash County (Ill.) Medical Association.—The annual meeting of this association was held at Mt. Carmel on October 22, when the following officers were elected: *President*, Dr. P. G. Manley, Mt. Carmel; *Vice-President*, Dr. John J. McIntosh, Allendale; *Secretary*, Dr. Edwin R. Lescher, Mt. Carmel; *Treasurer*, Dr. John B. Maxwell, Mt. Carmel; *Censor*, Dr. W. H. Roberson, Mt. Carmel.

Charleston County (S. C.) Medical Association.—On Friday, October 25, the Charleston County Medical Association was formed, with the following officers: *President*, Dr. J. M. Thompson; *Vice-President*, Dr. William H. Johnson; *Treasurer*, Dr. H. J. Prioleau; *Secretary*, Dr. M. M. Edwards.

Obituary Notes.—Dr. John W. Woods of New York, a graduate of the New York University Medical College in 1892, visiting physician to the Northwestern Dispensary, and a member of the New York State and County Medical Societies, died suddenly on October 28, in the Polyclinic Hospital, of pneumonia, at the age of 51 years.

Dr. Arthur Tracy Cabot of Boston died at his home in that city on November 4 at the age of 60 years. He was born in Boston and was graduated in medicine from Harvard in 1876. Upon returning from a period of post-graduate study in Europe he was appointed attending surgeon to the Massachusetts General Hospital and held this position for a number of years, being appointed consulting surgeon at the end of his active service. He was a member of the American Surgical Association, the American Association of Genito-Urinary Surgeons, the American Medical Association, and was an ex-president of the Massachusetts Medical Society.

Dr. William Herbert Pattee of Manchester, N. H., a graduate of the University of Vermont College of Medicine, Burlington, in 1877, a member of the American Medical Association and the New Hampshire State and Hillsboro County Medical Societies, died at his home on October 21, aged 57 years.

Dr. Dennis J. Sullivan of Providence, R. I., a graduate of the Bellevue Hospital Medical College, New York, in 1876, died at his home suddenly on October 20, aged 62 years.

Dr. Ralph Sherwood of St. Albans, Vt., a graduate of the Berkshire Medical College, Pittsfield, Mass., in 1863, a surgeon in the United States Army during the Civil War, and a member of the Vermont State and Franklin County Medical Societies, died at his home on October 19, aged 70 years.

Dr. James Warren Stitt of Berkeley, Cal., a graduate of the Bellevue Hospital Medical College, New York, in 1878, died at his home on October 14, after a long illness, aged 58 years.

Dr. William Lenneker of Chicago, Ill., a graduate of the Missouri Medical College, St. Louis, in 1882, died at his home on October 15, aged 63 years.

Dr. John E. Link of West Terre Haute, Indiana, a graduate of the Northwestern University Medical School, Chicago, in 1865, and a veteran of the Civil War, died at his home on October 13, aged 73 years.

Dr. Frederick G. Cretors of Paris, Ill., a graduate of the Chicago Homeopathic Medical College in 1901, and a member of the Illinois State and Edgar County Medical Societies, died suddenly at the Mercy Hospital, Chicago, on October 18, aged 45 years.

Obituary.

MAJ.-GEN. ROBERT MAITLAND O'REILLY.

MEDICAL CORPS, U. S. ARMY.

General O'Reilly, whose death occurred at his home in Washington on Saturday of last week, was born in Philadelphia January 14, 1845. During the Civil War he was a medical student at the University of Pennsylvania, and was appointed a medical cadet in the U. S. Army in 1864. At the close of the war he resumed his studies and was graduated in 1866. The following year he entered the regular army as assistant surgeon and passed through the various grades until, in the fall of 1902, he was appointed Surgeon-General of the army, with the rank of Brigadier-General.

Gen. O'Reilly served in a number of Indian campaigns in the West and Southwest, was with the regular troops in the strike troubles of 1877 about Baltimore and Pittsburgh, and at the beginning of the war with Spain was appointed chief surgeon of

volunteers, with the rank of lieutenant-colonel, serving as chief surgeon of the Fourth Army Corps. At the end of the war he was a member of the Evacuation Commission at Havana. While surgeon-general he was earnest in his advocacy of anti-typhoid inoculations and was largely instrumental in having them employed in the army.

In January, 1909, Gen. O'Reilly was retired for age, at which time he received the rank of major-general for Civil War service, being, it is said, the only medical officer of the regular army who ever held this rank.

Correspondence.

OUR LONDON LETTER.

(From Our Regular Correspondent)

INSURANCE DIFFICULTIES AND THE CHANCELLOR—ROYAL SOCIETY OF MEDICINE—INJURIES TO KNEE—WEST END SOCIETY—ROYAL HOSPITAL FOR DISEASES OF THE CHEST—A NEW DEPARTURE—ITEMS—OBITUARY.

London, Oct. 18, 1912.

At the meeting of the Cabinet on Wednesday "it is understood" that the question of the doctors' remuneration under the Insurance Act was not discussed. It is "understood" in the same way that the Chancellor's promised statement for this week is put off until next.

The Council of the Royal College of Surgeons at a special meeting yesterday elected Mr. Edmund Owen to the vacancy occasioned by the lamented death of Mr. Clinton Dent.

Mr. Lloyd George attended the dinner of the Journalists' Union, and, responding to a toast, boasted of the success of his "stamp-licking" plan. He said stamps had been affixed to insurance cards at the rate of £12,400,000 a week, and last week the number exceeded £15,000,000. He had had no complaint from great employers of labor, and many had told him they had had no difficulty, though booming trade might have something to do with that. He looked forward confidently to the time when the act, which he admitted to be "in many respects a revolutionary one," began to work. It must be somewhat disconcerting to this complacent self-confidence to find so many interests protesting against the provisions which concern them—most of all, the clubs and unions, whose votes he expected to gain. Here is a sample of how the workingman may meet an offer which he thinks unfair: Mr. Stutters, Chief Ranger of the Ancient Order of Foresters, has written to the Chancellor to ask how he means to secure a proper medical service under his act. Until it was passed, he says, arrangements were made on agreed terms, but widespread trouble began when the Government disturbed existing customs. "The medical profession—and, I think, quite properly—have put forward certain demands and they advance a threat that unless these are conceded they will decline to accept service." He adds that, recognizing the right of any body to say what is the real value of their services, he does not complain of them, but, on the contrary, is constrained to support them in the determination not "to permit even a Chancellor of the Exchequer to fix remuneration for services rendered without first consulting them as to its being adequate." Such usurpation of individual rights, he holds, must be fought to the end. Remarks made by the Chancellor as to increased cost he puts aside, telling him as responsible for financing his act it is his business to find the ways and means. Then he repeats his question as to how the Government means to secure his society the measure of medical benefit it has hitherto enjoyed, adding: "It had better be recognized once for all that nothing short of the quality of attention hitherto enjoyed—attention ungrudgingly given by the doctors—will satisfy." The reply of the Chancellor through his secretary only refers to Mr. Masterman's statement in the House of Commons as to possible monetary equivalent, and to this Mr. Stutters at once retorts that could only be "the sum claimed by the doctors" for their services. Any "less is not equivalent." He goes on to remark that the Government are suffering the penalty of legislation in a hurry and their error of judgment in failing to secure the cooperation of the profession instead of "this miserable exhibition of bargaining." They will find no disposition among insured persons to assist them in evading their obligations, "nor can it be supposed that the medical profession will surrender an impregnable position." The Government's loud talk of freedom of the democracy does not square with a hint of compulsory subscription to a national service in substitution for voluntary selection, nor with its enormous increase of officialism. He closes with a repetition of his question, and asks for a reply "germane to the point."

At the Royal Society of Medicine on the 8th inst. the surgical section had before it two papers on injuries to the semilunar cartilages. Mr. A. J. Walton read one dealing chiefly with anatomical points, from which he inferred there is a tendency toward displacement on full extension, increasing with the degree of force put forth. The tendency is most marked at the anterior end of the internal cartilage, as this part is narrower and, owing to the screw action, in full extension is more forcibly compressed between the tibia and femur than anywhere, and is here loosely attached. He found no evidence of a tendency to fracture or displacement when the joint is not fully extended. He had investigated seventy-seven cases at the London Hospital, and found the lesions identical with those artificially produced by hyperextension and the terminal screw action. The histories and etiological factors confirmed his opinion. The second paper was by Mr. Albert M. Martin of Newcastle, and based on his personal experience of 449 cases, all operated on during the period 1900-1911. All made good recoveries, there being no case of joint infection or instability of the joint. In some cases there was complaint of unrelieved symptoms; otherwise the results were all that could be desired. Two hundred and eighty-two patients were miners, who are very liable to this injury from sudden wrenching or twisting while the knees are flexed. Eighty-two happened when playing football. In 92 per cent. it was the internal cartilage. The injury might be a simple longitudinal split or a portion might be quite detached. If it lay in its normal position it might be easily overlooked. It might be curled up and only attached at each end. A split at posterior part might only be shown by a strong pull on the anterior. A tear across the cartilage, starting from any point on the knee border, or a split through the thickness, the under portion thus able to engage between the joint surfaces, or a small pedunculated disc with rounded edges might be found, resulting from the free border having been torn. In a few cases the cartilage had been mutilated beyond recognition. With regard to

treatment, Mr. Martin held operation necessary for men engaged in manual labor if no contraindications existed; it was also desirable for men and women intending to continue outdoor sports. The best time to operate is after the first week or ten days. He used a transverse incision and removed the detached piece and also the part remaining. In nearly all cases the joints were as good as before. He was skeptical of cures by rest.

Mr. McAdam Eccles remarked that the external cartilage was the more movable at the circumference, but much more strongly tethered at the extremities, and so could move more with less likelihood of being torn. It was almost impossible to say the exact injury before exploring, but when signs and symptoms suggested definite injury the case should be treated as such. He advocated plaster-of-Paris over a thick layer of cotton wool immediately after the accident, and kept on for four weeks, followed by passive movements, and massage for another four weeks, as giving a chance of union. But if symptoms recurred, removal of the cartilage, which he never sutured.

The West London Medico-Chi. opened its thirty-first session on the 4th inst. when the new president, Dr. G. P. Shuter, as his first act, presented his predecessor with the Keeley memorial medal which it is the custom of this society to present to each retiring president as a memento of his tenure of the chief office. The gift was acknowledged by Mr. Eccles (retiring president) and some official business transacted, after which Dr. Shuter delivered his inaugural address in which he sketched in a most interesting way the history of conasthesia by nitrous oxide, dividing it into three periods: (1) From Davy's researches, in 1800, to its use by Horace Wells in 1844 in dentistry. (2) From then to 1864 when it was revived after a period of neglect. (3) From that revival until the present day. The improvements in instruments and in the preparation of the gas and its supply were also passed in review by Dr. Shuter.

Yesterday a tuberculosis department was opened at the Royal Hospital for diseases of the chest. It is intended to establish a dispensary under the Insurance Act, and to provide training for medical officers to such institutions and to sanatoria. The departure is at the cost of a generous anonymous benefactor, who makes his gift on condition that provision is to be made for research work as well as for scientific instruction. The new department includes a lecture room to accommodate 100 persons, an *x*-ray room, a dental room, an electrocardiograph room, an operating theater, three laboratories equipped for microscopic and vaccine work, outpatient accommodation for about 200 patients, and the usual consulting rooms and other offices. Sir William Osler presided at the opening ceremony, at which the profession was well represented. He considered the association of a tuberculin dispensary under the act with a special hospital as an interesting development to be recommended to every hospital that specializes in tuberculosis. The plan proposed for filing cases and contacts he commends as a model.

Professor Nietzer, secretary of the German Central Committee for Preventing Tuberculosis, gave an address on the work among children. He said that at first the committee was mainly concerned with the care of curable cases, but latterly it had given more attention to preventive methods. They now saw the necessity of beginning with the child, for they found that though the incidence of the disease was steadily decreasing in Germany the children did not participate in this decrease. Recent researches showed that the majority of cases were infected in early life and that most likely through the close intercourse of the members of the family. This should be the basis of preventive methods.

The Industrial Diseases Committee, sitting at the Home Office, is considering whether Dupuytress's contraction, cowpox, and clonic spasm, apart from nystagmus, should be scheduled under the Workmen's Compensation Act, so as to enable workmen to claim for disablement due to their occupation.

Hospitals are suffering much from the fall in securities of late years. Sir E. Elles, treasurer of the Surrey County Society, told the governors at a meeting on Monday that if they were obliged to realize their investments at the present time it would entail a loss of £10,000.

Dr. F. H. Low, honorary secretary of the Röntgen Society and vice-president of the West London Medico-Chirurgical Society, died on the 8th inst., after a short illness, at the age of 58. He had been *x*-ray physician at several hospitals, and done much to establish their departments.

The death is reported of Dr. Robert Laing, Medical Health Officer of Blyth. He was a Durham student and took several medals. He qualified L.R.C.P., Edinburgh, and M.R.C.S., England, 1869. In 1889 he added the D.P.H., Cantab., and has held several health appointments. He was a Justice of the Peace for the county of Northumberland.

THE FIFTEENTH INTERNATIONAL CONGRESS OF HYGIENE AND DEMOGRAPHY.

(Special Report to the MEDICAL RECORD.)

WORKINGMEN'S INSURANCE IN GERMANY—WOMEN IN INDUSTRIAL LIFE—INDUSTRIAL ACCIDENTS AND TRADE DISEASES IN THE UNITED STATES—NOTIFICATION OF INDUSTRIAL ACCIDENTS—ALCOHOLISM IN RELATION TO ACCIDENTS, SICKNESS, AND MORTALITY—SPREAD OF COMMUNICABLE DISEASES THROUGH TRAFFIC—STATE AND NATIONAL SUPERVISION OF TUBERCULOSIS—DISSEMINATION OF TYPHOID FEVER.

IN the Section on Demography Ministerialrat Dr. Friedrich Zahn, Direktor d. K. Bayer, Statistischen Landesamts, Munich, Germany, read a paper on "Workingmen's Insurance and the Care of the Poor in Germany." The relations between Workingmen's Insurance and the care of the poor bring two questions into prominence: (1) Has the Workingmen's Insurance produced a lessening effect in the care of the poor? (2) Is there a relation between the Workingmen's Insurance and the increase of the German poor budget? Enlightenment on these questions is to be desired. The German Workingmen's Insurance has actually lessened the care of the poor. There are now in round numbers 13,000,000 persons insured against sickness, 15,000,000 against invalidism, and old age, and 24,000,000 against accident. This includes not only the upper class of laborers, but also the broad masses of wage-workers and with them a noteworthy part of the earlier body of dependents on the administration for the care of the poor. Over 7,674 millions of marks (nearly $1,918,500,000) were expended for workingmen's insurance in the period between 1885-1909;

1.8 million marks (nearly $450,000) on an average daily to the advantage of those insured. By reason of this, results are accomplished in sickness, accident, disability and old age, and these come also to the share of the family. The insurances are permanent and the extent of the same suffices at present in many ways for the alleviation of the state of need and will continue to improve. It produces besides an energetic struggle against the causes of disturbances of the industrial life and for that reason results in an extensive prophylactic activity of the Labor Insurance organs, so that the Workingmen's Insurance has straightway become the foundation and cornerstone for our preventive social hygiene. The moral influence in this connection is not to be overlooked. The ameliorating influence of the Workingmen's Insurance is most evident in small, poor communities where the care of the poor must be restricted to the most needy; the care of the poor is a heavy expense to the community. The large cities can, on account of their financial condition which as a rule is more favorable, practice a more broad-minded care of the poor. They devote means released by the Workingmen's Insurance to new cases of assistance hitherto left unnoticed and to new and more intensive support of single cases. The author discussed the rapid increase of population in the last twenty-five years, also the powerful and swift process of placing affairs under municipal control. He discussed further the elevation of the welfare and betterment of the mode of living which have appeared with our recent economic development; he also discussed the increase in the cost of living. Dr. Zahn also read a paper on "Women in Industrial Life—An International Statistical Examination." He said that the most precious possession of a nation is the nation itself, its national strength. The organic national capital (wealth) must be used sparingly, so that without injury to its inner worth new evolutionary values may continually develop as the interest and compound interest on this capital. The woman is a most valuable productive and reproductive factor of this national capital. Her work as mother and educator of the working forces, as wife, as the soul of the family, as a working force in industrial pursuits outside the home, as a fellow worker in the service of public interests, is extremely important for the entire advancement in the making of a living. The performance of these various industrial occupations by women has experienced great transformations during the last decade, but not to the advantage of the productive and reproductive strength of women. For the sake of preserving the family, and furthering culture and morals, as well as in the interest of political economy and the economy of nations, a greater economy of women is needed. At the present time the national and international statistics relating to the participation of woman in industrial pursuits for a livelihood are very incomplete and require greater study and development.

During the afternoon at the New National Museum there was held a joint session of the Section on Occupation and the Section on Military, Naval, and Tropical (Colonial) Hygiene. The first symposium considered was the "Measurement of the Healthfulness of Occupations," and this was opened by Frederick L. Hoffman, LL.D., Statistician, Prudential Insurance Company, Newark, N. J. He read a paper on "Industrial Accidents and Trade Diseases in the United States," and emphasized the necessity for accurate records of industrial accidents and industrial diseases. He suggested the enactment of compulsory notification laws. The utility of the proportionate mortality method is emphasized as the most useful means available in the United States for the practical needs of industrial hygiene. He gives a brief outline of the industrial accident problem, stating that approximately 25,000 deaths annually result from industrial accidents among approximately 30,000,000 males employed in gainful occupations. He estimates that about 15,000 fatal accidents occurring annually among persons employed in industry are not directly attributable to industry. In view of the immense importance of industrial hygiene in a nation which is to-day foremost in industrial activity, it would seem eminently proper that the whole problem should be considered by a national commission, in conformity with the principles advanced in the Memorial to the President of the United States, and presented to him at the request of the First International Congress on Industrial Diseases, held in Chicago in 1911.

Robert E. Chaddock, Ph.D., Associate Professor of Statistics, Columbia University, New York, read a paper on "Reporting of Industrial Accidents." He reviewed the nature of the inquiries made by the various States concerning industrial accidents. One aim of the paper was to promote a clearer understanding of the nature of the problems, in the solution of which statistical data are essential. Such an understanding was preliminary to the collection of the facts themselves, and should be their guide as to what facts to collect in the future, and how to collect and arrange them. Mr. Henry J. Harris, Chief of the Division of Documents, Library of Congress, Washington, D. C., read a paper on the "Present Position of Accident Statistics in the United States." This paper was followed by one on "Demography of Industries and Professions," by M. Lucien March, Directeur de la Statistique Générale de la France, Paris, France. In France in 1906 they had obtained a double classication of individuals, on the one hand according to the industry to which they belong, on the other according to their special occupation. To obtain reliable statistics of occupational mortality it would be necessary to establish two tables based on the same principle and requiring the same control, the same precision, one for the number of living and the other for the number of deceased.

The rest of the afternoon was devoted in this joint session to the consideration of the "Relation of Alcoholism to Accident, Sickness, and Mortality." Dr. Jacques Bertillon, Chief of the Bureau of Municipal Statistics, Paris, France, read a paper "Concerning the Existing Relation Between Phthisis and Alcoholism," a very close one. Every one knows that alcohol attacks the liver of its victims, but let us add that twice as often it attacks the lungs, by causing tuberculosis, pneumonia or bronchopneumonia. Alcohol may be called the principal cause of phthisis. Edward Bunnell Phelps, editor *The American Underwriter*, New York, read a paper on the "Mortality From Alcohol in the United States—the Results of a Recent Investigation of the Contributory Relation of Alcohol With Each of the Assigned Causes of Adult Mortality." These results were published recently in book form under the title of "The Mortality of Alcohol." The total arrived at for an estimated population of 86,874,990 was 65,897 deaths in which

alcohol might have figured as a factor, or 5.1 per cent. of the supposed total mortality at all ages and 7.7 per cent. of the supposed adult mortality at age 20 and upward. This approximation of about 66,000 deaths has received strong confirmation since the publication of Mr. Phelps's book.

Dr. William F. Boos of Boston, Mass., read a paper on "Alcohol as a Predisposing Cause of Accidents and Occupational Disease." A German physician finds that alcoholic workmen between the ages of 25 and 44 have over three times as many accidents resulting in injuries as all the other workmen put together; and that the days of illness resulting from such injuries are nearly four times as many as those incurred by all the workmen. It was also determined that if the accidents caused by the use of alcohol could be eliminated, 7 per cent. of all accidents would be prevented and the saving to the German sick benefit societies for the year 1897 alone would have been 4,500,000 marks. The seriousness of the accident at Corning on the Lackawanna Railroad, on July 4th, does not lie so much in the loss of thirty-nine lives because an engineer was drunk, as in the fact that it was possible for the engineer to enter his cab in a drunken condition. We need thorough control of all railroad employees. The first step in this direction has been taken by the management of the elevated and underground railways of Berlin, which employ careful and responsible officials to whom all the men must report before they go on duty.

The Section on Microbiology and that on the Control of Infectious Diseases held a joint meeting devoted to the discussion of "The Spread of Communicable Diseases Through Traffic," in which Dr. Eduardo Liceaga of Mexico City, Mexico; Dr. Shibasaburo Kitasato, Tokyo, Japan; Surgeon General Blue of the United States Public Health Service; Assistant Surgeon-General William Colby Rucker, Dr. W. R. Watson, Director of Sanitation, of Porto Rico; Dr. William F. Snow, Secretary of the State Board of Health of California; Dr. Harold B. Wood of Rochester, Minn., and Passed Assistant Surgeon Allan J. McLaughlin took part. There was a decided unanimity of opinion as to the spread of plague, which is summed up by saying that "the problem of the eradication of plague is the problem of the extermination of the rat." Nothing less than a world-wide campaign will do this. The first element in preventing rats from taking passage in ships is a ratproof waterfront. As it is not practicable to secure the adoption of world-wide measures for extermination periodical fumigation of ships is desirable. No portion of the vessel should be overlooked. Attention was called to the need of getting rid of the marmot and ground squirrel. Whereas the acute form of plague affects rats, squirrels are subject to a chronic form of the disease which serves to perpetuate it. Dr. William F. Snow declared that we need a rigid State and national supervision of the migration of tuberculosis patients. He also approved England's new plan of compulsory insurance in order to provide adequate sanatorium treatment for tuberculosis patients. As to the dissemination of typhoid fever, Dr. Allen Freeman said preventive efforts have been confined almost entirely to cities. The principal factors in transmitting typhoid infection between urban districts and from rural to urban districts are: by persons; carriers, temporary or permanent; persons in the incubative stage of the disease, and persons actually sick with typhoid; by food and drink, including water, dairy products, garden truck, fruits and shellfish. A careful and comprehensive campaign against the disease will result in a large reduction in the amount of infection thus transmitted. Dr. Harold B. Wood thought the country's typhoid was rural and could be ameliorated by the establishment of bureaus for the collection of sociological and health statistics and for public instruction and gratuitous advice. Morbidity reports should include location and kind of occupation. Better trained whole time rural health officers having wide jurisdiction are needed. In giving advice use judgment to advise methods which can and will be adopted under local conditions.

Passed Assistant Surgeon Allan J. McLaughlin said that to prevent waterborne disease in lake and river traffic it would be necessary to proceed along the following lines: 1. Popular education is necessary to prevent drinking unpurified surface water. 2. Public water supplies in communities engaged in interstate traffic should conform to United States standards. 3. United States standards should be based upon the bacterial count and the quantitative estimation of *B. coli* and should be the minimum requirements to prevent the spread of disease, such as typhoid fever or Asiatic cholera, in interstate traffic, the various States retaining the right to impose additional requirements, consistent with State laws where such laws exist. 4. United States regulation is necessary requiring vessels engaged in interstate traffic to fill their water tanks only from public water supplies certified as safe and conforming to United States standards. 5. Inspection of vessels by United States officers and by state and municipal officers duly qualified to enforce this regulation. In the discussion of these papers it was stated that the problem of abolishing typhoid fever was the greatest problem before sanitarians because the control of typhoid fever would mean the control of other communicable diseases, and in order to accomplish this a large State force of inspectors was needed; this was often difficult to secure as different portions of the same State have very different ideas as to the need of medical inspection.

Progress of Medical Science.

Boston Medical and Surgical Journal.

October 24, 1912.

1. Muscle Training in the Treatment of Infantile Paralysis. W. G. Wright
2. Scattering Notes on Arthritic Disease. H. W. Marshall.
3. The Excretion of Formaldehyde by the Kidneys of Patients Taking Urotropin: A Study of Burnam's Test. O. R. T. L'Esperance.
4. Two Cases of Injury of the Vena Cava During the Removal of Pyelonephritic Kidneys. A. T. Cabot.
5. Three Cases of Utero-Vesico-Vaginal Fistula. E. B. Young.
6. Mucous Cancer of the Bladder. By A. L. Chute and A. H. Crosbie.

1. Muscle Training in Infantile Paralysis.—W. G. Wright concludes as the result of six years' experience as an assistant in the treatment of infantile paralysis by means of muscle training, massage, and electricity that better results have been obtained from the combination when physician and parents cooperated than when the management of the exercises has been left to an unskilled gymnast or masseur, who has neither the scientific knowledge of the physician nor the patience and enthusiasm of the parent. The training of the muscles should be begun as soon as the patient can move his limbs freely without pain. In most cases this will be from three to six weeks after the initial attack. It is possible also to accomplish a great deal for cases that have been neglected for years.

3. **Excretion of Formaldehyde Following Administration of Urotropin.**—O. R. T. L'Esperance notes that when Burnham's test is applied to the urine of patients taking urotropin it is found that about 50 per cent. of these patients excrete formaldehyde. Age, sex, well or sick individuals, normal or pathological conditions of the kidneys, and the reaction of the urine do not influence the ratio of excreting and non-excreting kidneys. The time of the appearance of the drug in the urine is about one hour after ingestion by mouth. The excretion continues for from four and one-half to six hours, with a maximum at about two hours. In view of these facts it is necessary in order to get uninterrupted excretion to repeat the administration of the drug every four hours. The reaction of the urine is of no importance. Alkalies taken with or in combination with urotropin have no effect on the excretion. The duration of the excretion of formaldehyde is about four to six hours. The increase of dosage does not affect the excretion in negative urines. Urotropin is practically symptomless in an average dose. The urine of all patients taking urotropin should be tested for formaldehyde. Patients not excreting formaldehyde are symptomless regardless of the amount of urotropin taken.

New York Medical Journal.

October 26, 1912.

1. The Inheritance of Acquired Characters. J. Wright.
2. Membranous Perienteritis. A. E. Isaacs.
3. Pedunculated Sarcoma and Myxoma of Larynx. A. M. MacWhinnie.
4. Fractures of the Skull. E. P. Maerader.
5. Medical Economics. T. F. Reilly.
6. Ten Sex Talks to Girls. IX. I. D. Steinhardt.
7. Specific Therapy of Cancer. I. Levin.
8. The Pathological Relations of Urine to Mental and Nervous Diseases. S. R. Klein.
9. Femoral Varix. P. T. Geyerman.

2. **Membranous Perienteritis.**—By A. E. Isaacs. (See MEDICAL RECORD, Vol. 81, page 1208.)

5. **Medical Economics.**—T. F. Reilly states that medical economics includes the study of a vast number of subjects. From a business standpoint it covers: (1) The importance of honor and probity in all transactions; (2) the fundamental principles underlying a physician's compensation, dealing with the subject of fees both for ordinary and extraordinary work and for operations; (3) the necessity of modern methods of medical bookkeeping; (4) the importance of collections; (5) how to secure prompt payment; (6) the various extra-practice means of obtaining a livelihood; the evils and dangers of lodge practice; (7) the abuse of medical charity; (8) the dishonesty of division of fees; (9) the value of cooperation as opposed to the old spirit of rivalry; the absolute necessity of organization and its advantages; finally medical ethics is of prime importance, both as a guide to proper living, as well as to success from a business standpoint.

7. **The Specific Treatment of Cancer.**—I. Levin believes that ultimately a specific remedy will be found, at least in experimental cancer. But at present all the results are unsatisfactory. The true nature of the therapeutic action of the substances is not known. The same autolyzed tissue, the same chemical combination of eosin and selenium may be active in one series of experiments and not in another. It will require years of laboratory research before real light is thrown on the subject. Even then, there will still remain unsolved the most difficult question as to the manner in which the results can be transferred to the treatment of human cancer. To the profession at large the most practical advice which a laboratory worker can give is to wait at least five years before trying a new specific cancer cure, no matter how great the reputation of the man who advocates it. Meanwhile, in early diagnosis and radical operative treatment lies the only hope of the patient.

8. **Urinary Changes in Nervous Diseases.**—S. R. Klein points out that quantitative changes in the urine are often observed in diseases of the nervous system. Attacks of hysterical excitement are followed by copious polyuria of short duration, and in all patients of the neurotic type any nerve tension may induce a milder degree of polyuria which may continue for days or for weeks. In such cases the urine is light in color and of low specific gravity, differing from the normal excretion only by its extreme dilution. Less frequently, on the other hand, oliguria may occur; even complete anuria has been met with in hysterical women, a condition not to be confounded with the frequently encountered hysterical retention of urine. Mendel of Berlin has observed that in 90 per cent. of epileptic cases there is excess of uric acid, also of urea and phosphates. In cases of neurasthenia, Defleury observed a diminution in volume, with high specific gravity, and an increase of earthy phosphates in relation to the alkaline phosphates; he also noticed an increase in the chlorides, and lowering of the oxidation coefficient. The occurrence of an excess of phosphates in the urine in cases of nervous disease was first noted in relation to meningitis. Albumin is frequently found in the urine after attacks of apoplexy, in cerebral growths, and in various inflammatory processes affecting the brain. Occasionally sugar may also be present, most frequently when hemorrhage takes place into the fourth ventricle. In Graves' disease polyuria frequently occurs, with or without the presence of sugar. In various forms of mental derangement, delirium tremens, paranoia, and melancholia sugar has been found in the urine. In 20 per cent. of melancholic cases Arndt detected alimentary glycosuria. Indicanuria is found mostly in cases of melancholia, paranoia, mania, and especially delirium tremens.

Journal of the American Medical Association.

October 26, 1912.

1. Injuries of the Spinal Column, with and without Fracture and Dislocation. E. D. Fisher.
2. An Epidemic of Typhoid Fever in Philadelphia. J. S. Neff.
3. Some Results of the Treatment of the Baltimore Drinking-Water by Calcium Hypochlorite. W. R. Stokes and F. W. Hachtel.
4. The Fallacy of Testing Food Materials by Animal Inoculation. W. T. Sedgwick.
5. A Preliminary Report on a Hitherto Unrecognized Six-Day Fever in Ancon Canal Zone. W. F. Deeks.
6. Aphasia and Agraphia in Some Practical Surgical Relations. C. K. Mills and E. Martin.
7. The Need for Genetic Studies for Pulmonary Tuberculosis. H. E. Jordan.
8. Psoriasis. The Value of Baths and of Maceration in Its Treatment. D. W. Montgomery.
9. Protein Metabolism in Late Pregnancy and the Puerperium. J. R. Murlin and H. C. Bailey.
10. Books as Carriers of Scarlet Fever Infection. O. B. Nesbit.
11. Recent Advances in Our Knowledge of Scarlet Fever. K. K. Koessler.
12. The Artificial Culture of Filarial Embryos: A Preliminary Note. C. Wellman and F. M. Johns.
13. Surgery of Intramedullary Affections of the Spinal Cord. C. A. Elsberg.
14. Immunization Against Typhoid of Eight Hundred and Ninety-Eight Patients. P. G. Weston.
15. The Quantitative Examination of Albumin in the Sputum in Pulmonary Tuberculosis. B. O. Works.
16. Unilateral Kidney Hemorrhage Controlled by Injection of Human Blood-Serum. B. S. Barringer.
17. Spontaneous Hemorrhage of the New-Born with Recovery. V. M. Reichard.
18. Diphtheritic Serum Used to Control Bleeding in a Hemophiliac. M. J. Perkins.
19. A Case of Hemophilia. E. E. Claybrook.
20. Carbon Monoxide Poisoning with Acute Symptoms. M. O'Malley.

1. **Injuries of the Spinal Column.**—E. D. Fisher discusses the operative treatment of traumatisms of the cord uncomplicated by fractures or dislocations of the spinal column. The author would depend more largely on the sensory disturbance than on any other symptoms in deciding in regard to the operation. When there is absolute loss of sensation, together with the usual loss of reflexes, and rectal and vesical paralysis and well-marked transverse demarcation of anesthesia, the case is regarded unfavorably for operation. Any variation from that one condition indicates the possibility of a good result from operation. Since many cases have been reported of gradual return of sensation without an operation, the

author would almost always wait for this and until all sensory improvement had ceased before beginning to operate. When it ceases or the condition becomes worse operation should be no longer delayed. After a paralysis has existed for several months operation is almost futile. When the symptoms have not changed from the early condition of loss of reflexes, continued loss of sensation and a tendency to contraction of the paralyzed muscles, it seems that operation is useless, whether done in a few months or many months after the injury. The author would operate when there is the slightest chance of recovery, because in the hands of a skilful surgeon there should not be any special danger in the operation itself.

5. **A Six-Day Fever in the Canal Zone.**—W. E. Deeks describes an epidemic of a peculiar tropical fever which prevailed in Panama last summer. Two clerks who handled the incoming foreign and domestic mail exclusively in the Ancon postoffice first showed symptoms of the fever in April. From them it spread to the other three clerks and to individuals outside, and at the date of the report was spreading in Panama. At first the disease was taken for malaria, but no parasites were found in the blood and anopheles breeding places were lacking. The chief features of the disease are: the high infectiousness, probably antedating the fever; the lack of prodromi; the abrupt onset with chills and a fever temperature of 101.4°; the six days' course with slight morning remissions and more or less abrupt ending, generally without recurrence; the practically normal pulse and respiratory rates; the splenic enlargement; the unchanged blood-picture; the anorexia and after-depression, greater than after malaria. The incubation period is apparently ten days. Widal reactions were negative. The author thinks this disease probably identical with the seven-day fever referred to by Castellani, and that this is its first appearance in the Canal Zone since the American occupation, having been probably introduced through the mails. Though some of the cases have been very severe, there have been no fatal ones.

7. **Psoriasis.**—Dr. W. Montgomery has found that baths of pure warm water act powerfully and beneficently on psoriasis. Sulphur baths made by the addition of potassium sulphide may act badly, especially when the skin is in an erethistic, irritable condition. Tar and permanganate of potassium are often valuable additions to baths given for psoriasis. The addition of the blander salts, such as bicarbonate of soda, boracic acid and common salt probably decrease the effect of the bath by reducing the osmotic pressure of the water. Maceration under impermeable coverings acts in much the same way as baths.

8. **Protein Metabolism in Late Pregnancy and Puerperium.**—J. R. Murlin and H. C. Bailey conclude that the average of many determinations shows that the nitrogen factors of the urine in the last month of pregnancy are the same or but slightly different from those in the non-pregnant. Normal women in the last month of pregnancy may have an ammonia-nitrogen as high as 17 per cent. and a combined amino-acid and undetermined nitrogen of 10 per cent. Percentage figures are deceiving and of no value, for the total nitrogen is dependent on the amount of food absorbed, and this is affected by intake, nitrogen content, catharsis, etc. With all the clinical signs of pre-eclampsia, the nitrogen partition may be normal, even up to and for twenty-four hours following the development of convulsions. Following convulsions the ammonia factor may or may not be high, depending, we believe, on the development of ammonia within the bladder, owing to contamination by the catheter. The nitrogen partition as an evidence of metabolic processes cannot be said to offer an index to the pre-eclamptic or the eclamptic condition.

9. **Books as Carriers of Scarlet Fever.**—O. R. Nesbit notes that (1) if books act as carriers, it is only immediately after being contaminated with the discharges of the patient; yet the author's investigation has failed to reveal a single instance of this kind. (2) Books that have been used by scarlet fever patients do not long contain the infection in such a way as to transmit the disease to man. (3) Any book which has been handled by a scarlet fever patient should be burned or fumigated. The most practical method for general book disinfection at this time is the Beebee carbogasoline method. This consists in using gas-machine gasoline and 2 per cent. phenol crystals; the books are immersed in this mixture for twenty minutes, removed and placed before an electric fan for two minutes, and then set on end for from twenty-four to forty-eight hours.

11. **Cultivation of Filarial Embryos.**—C. Wellman and F. M. Jones present a preliminary note on their successful experiments with the culture in artificial media of the embryos of the *Filaria immitis*, (Leidy). Experiments were devised to determine the influence of various whole bloods, serums and other media, and also the effects of temperatures, air, etc., on dog's blood at 28° C. The embryos die out in from three to eight days at 37° C. Other media, such as hemoglobin, agar, bouillon, citrated dog blood and human blood were less successful. The best results were obtained with dextrose dog serum at low temperatures, and it is rather curious that, after the low temperature, the next best temperature for producing the growth of the parasites is as high as 40° C. Cultures contaminated with bacteria in many cases gave as good results as sterile ones, especially at low temperatures, and even at room temperature the embryos seem to thrive in the presence of certain bacteria.

The Lancet.

October 19, 1912.

1. The Surgery of the Peritoneum. H. Macnaughton-Jones.
2. Amebic Colitis in India: Prevalence, Diagnosis, and Emetine Cure. L. Rogers.
3. Injuries to the Semilunar Cartilages: A Personal Experience of 449 Cases of Operation. A. M. Martin.
4. On the Changes Induced in Blood by Feeding: A Study in Cellular Physiology. G. Mann and J. G. Gage.
5. A Note on a Case of Double Cataract: The Case of General Booth. C. Higgens.
6. Actinomycosis Occurring in Tuberculous Subjects. Three Cases. J. B. Slattery.
7. A Case of Rupture of a Hemorrhagic Corpus Luteum into an Intraligamentary Cyst, Resembling Ruptured Ectopic Pregnancy. S. G. Luker.

1. **Surgery of the Peritoneum.**—By H. Macnaughton-Jones. (See MEDICAL RECORD, October 12, 1912, page 671.)

3. **Injuries to the Semilunar Cartilage.**—A. M. Martin remarks that the bulk of the sufferers from torn semilunar cartilage give a typical history, and emphasizes the fact that in the majority of cases one has to diagnose the condition from what one is told. It may be that when the physician first sees the patient the primary tear occurred months or years previously, and the subsequent attacks of "something going wrong with the joint" have been comparatively slight, consisting, perhaps, of little more than experiencing a click or a snap at the inner side of the knee with pain in the same situation. The patient then finds that momentarily the joint locks, *i. e.*, he is unable to extend it completely; then suddenly, after moving his knee himself or after somebody moves it for him, another click or snap is experienced, and full power of movement is again regained. Attacks such as these occur more or less frequently and at various intervals after the primary tear, and are often followed by no effusion, the only symptom remaining being a tender point at the inner or outer side of the patella somewhere in the line of the articulation, according as it is the internal or external cartilage that is injured. These subsequent attacks are often determined by very slight causes, such as catching the bedclothes with the toes, etc. When the primary tear takes place the symptoms are much more severe, and are often

as follows. In consequence of a severe wrench or twist the patient is suddenly seized with severe pain. The pain is at first often felt over the whole joint, later becoming localized at the inner or outer side, and is frequently so bad as to cause faintness and vomiting. At the same time a click or snap is felt, or a feeling of something slipping. If running, he falls to the ground, and finds he is unable to completely extend the knee. In a few hours swelling occurs, the result of effusion in the joint, and this, in consequence of rest, disappears in the course of two or three weeks. In some cases the inability to extend persists for a week or more, and in others only disappears when an anesthetic is given and certain manipulative procedures carried out or the offending cartilage is removed. For some weeks after the accident, and after all swelling has disappeared, a tender point persists at the inner or outer side of the patella according as the internal or external cartilage has been torn. In deciding upon a line of treatment the question arises as to whether it is necessary for the patient to have a perfectly sound joint or not. If he is engaged in manual labor the answer must be in the affirmative, and in the absence of any contraindication, such as intercurrent disease, operation is demanded. This decision, the author maintains, must also apply to active men and women who are still wishful to spend their leisure in open-air sports, such as football, cricket, hockey, shooting, and riding.

4. Changes Induced in Blood by Feeding.—G. Mann and J. G. Gage report as the result of their investigation that during the digestion period there is a marked increase in the staining intensity of all nuclei; the rim of cytoplasm in the lymphocytes becomes narrower; the granules in the leucocytes decrease both in size and number, and the leucocytes may also show a diminution in size. As far as the deeper staining of the nuclei is concerned two explanations suggest themselves. One may assume, since there is an actual increase in the number of white cells after a meal, that these new cells in the circulation, being younger, are therefore smaller, and that for the same reason they stain more deeply. Analogously younger leucocytes might contain fewer and smaller granules. This explanation of the change in the microscopic appearance of the blood does not seem to the authors to be the correct one, as one would have to assume either a vast increase in the number of new cells or a correspondingly large destruction of those white cells, which were circulating in the blood before food was taken, to produce the great changes we have found to occur. The second explanation is based on the fact that the nucleated corpuscles in the blood must get nourishment from the blood plasma and must metabolize as long as they are alive. One would further expect the nucleated corpuscles to be feeding at such times when the blood plasma contains the most food material—that is, while food is being absorbed from the alimentary canal. There is thus definite evidence that the metabolism of all nucleated cells is inseparable from the increase in the nucleoprotein radical in that cell, and one has therefore to solve the problem of the manufacture of purin substances from non-purin radicals. It is more difficult to account for the diminution in the size of the neutrophile corpuscles. The authors suggest the explanation that the irritability and the contractility of the white corpuscles are increased in feeding, in consequence of which fed cells are more likely to become spherical and less likely to be spread out by the pressure of the glass slide used in making a film; and further than this, they also maintain that the increased osmotic pressure in the blood plasma during the absorption of food may cause a certain amount of exosmosis, from which probably follows a marked shrinkage of the white cells apart from the diminution caused by the partial disappearance of the zymogen granules.

British Medical Journal.

October 19, 1912.

1. The Maternity Ward at St. Thomas's Hospital, London, and Its Work During 1911. J. S. Fairbairn and J. M. Wyatt.
2. The Significance of Albuminuria in Pregnancy. E. H. Siedeberg.
3. A Persistent Occipito-transverse Presentation: Labor Obstructed at the Pelvic Outlet. H. Chapple.
4. A Plea for a Universal Standard in the Observation of the Morbidity of Childbed. A. W. Russell.
5. Some Remarks, with Statistics, on the Treatment of 1,305 School Children (London County Council) at the Royal London Ophthalmic Hospital (Moorfields). F. Moxon.
6. Transitory Bigeminal Pulse. Sir Lauder Brunton.

2. Albuminuria in Pregnancy.—E. H. Siedeberg states that the proportion of pregnancies in which albumin is present is a very large one. Out of 1,127 cases albumin was present in 289, or 25.6 per cent. There is a remarkable preponderance of complications in cases in which albuminuria has been present. The latter is only the visible sign of profound metabolic changes which are taking place in the body.

3. Persistent Occipito-Transverse Presentation.—H. Chapple emphasizes the necessity of always determining in a case of labor the size and shape of the pelvic outlet. In forming an estimate of the amount of obstruction likely to occur at the pelvic outlet we should be guided both by the distance between the ischial tuberosities and by the subpubic angle. The existence at the pelvic outlet of a presentation is here described as an occipito-transverse. The rational treatment of such a presentation, should it persist, consists in an application of forceps in an oblique diameter of the outlet, and while traction is being made the forceps should be rotated into the opposite oblique, with the result that the occiput is swung under the symphysis and then delivery is promptly effected in the usual way.

4. A Standard of Childbed Morbidity.—A. W. Russell makes a plea for a uniform standard for the scientific records of morbidity in the puerperium. For this purpose only thermometers of ascertained correctness should be used. The observation should always be made in one place, preferably the mouth, and extend over a fixed time. The temperature should be taken at stated intervals and at the same time of the day, and the first day should be included. The record should include all abortions and also all deaths with a previous morbidity. Both temperature and pulse should be taken, and the normal lower limit in each should be determined finally by resolution of the International Congress for Obstetrics and Gynecology, and thus become a recognized, universal, uniform standard of morbidity for use in all scientific communications—a manifest improvement.

6. Transitory Bigeminal Pulse.—Sir Lauder Brunton reports a rare case in which there was a bigeminal pulse without any apparent cause other than the slight excitement of applying the sphygmograph. The patient was a young man, aged 19, who had been suffering from albuminuria for more than two years; he also had enlarged glands behind his sternomastoids, and in the axillæ and left groin. The pulse was small, soft, and regular. The tension was only 97. The urine contained a few swollen renal cells, very few casts, and no crystals. With the exception of slackness he had no symptoms, and when excited showed considerable activity and would play four sets of tennis one after the other. He had no other complaint. His systolic tension 108 and the diastolic 60. The cardiac dullness and sounds were perfectly normal. There was still a large amount of albumin; he had several glands in the back of the neck, in the groins, and in the front of the abdomen. His pulse was quite regular, but while the author was taking it it assumed a bigeminal character. The author believes that the peculiar rhythm of the pulse was due to the partial interference of two rhythms—muscular or nervous, or both—though the exact *modus operandi* may require a prolonged investigation and discussion.

Berliner klinische Wochenschrift

October 14, 1912.

Principles of Up-to-Date Tuberculin Treatment.—Möllers claims that the most practicable and efficacious treatment of human tuberculosis consists of a combination of hygiene and a diet as carried out in sanatoria and of the specific tuberculin treatment. In the initial stages selected cases may also benefit by these principles in dispensary practice. The characteristic of to-day's tuberculin treatment is its mild "insidious" method in which the full dosage is attained with maximal avoidance of reaction. The selection of a particular make of tuberculin is of less significance than the choice of the method. Treatment should not be schematized, but strongly individualized, regard being had to individual susceptibility and the course of the disease. The most appropriate form of administration is the subcutaneous. Permanent cure does not, as a rule, follow a single cure. In many cases the treatment must be renewed throughout one or more years. These principles of treatment should not be left wholly to specialists in sanatoria, but should be carried out, the author says, by the profession at large.

Apical Emphysema.—Ország considers the relationship of this condition to tuberculosis. We know that a circumscribed emphysema may not occur in this locality and the possibility of tuberculosis must be borne in mind, because in such a case diagnosis of the latter would be obscured. It is assumed that in lesions in the apex the so-called Krönig's area is diminished in extent, but in certain affections it is increased—apical emphysema, cavities, relaxation and pneumothorax. The decrease of intensity of a dulled percussion sound over the apex is not unconditionally a sign of a decrease in the amount of infiltration, for it may be due to the supervention of apical emphysema. In the examination of the apices both the gentle and the vigorous method of percussion should be undertaken in different intensities.

The Iodine Therapy of Tuberculosis.—Nieveling has been testing this ancient resource and announces the following conclusions: Iodine promotes expectoration through rendering the sputum less tenacious. It also favors respiration, but whether through the first-mentioned property or others is not discussed. The cardiac action is often benefited, the beat becoming stronger, and palpitation is overcome. Iodine exerts no influence over fever. The healing and cicatrization of cavities seem to be promoted. In general, the author believes that iodine can do all that creosote does and do it better. He appears to depend on some of the organic iodine compounds as substitutes for potassium iodide. The germ of the idea of an iodine therapy for phthisis, as far as modern practice extends, is the known power of this remedy over asthma.

Practical Studies of Bile in Vivo.—Királyfi has made many studies of living bile from the bacteriological and chemical viewpoints. Medical cases were alone used as material, the bile being obtained by the natural passage. Of special interest is the diagnosis in this connection of latent typhoid. A Boldyreff oil breakfast was first given, this causing the appearance in the stomach of a mixture of bile and pancreatic juice. Conclusions reached after examination of 60 subjects are in part as follows: The upper portion of the duodenum is usually sterile in the normal. A diagnosis of cholecystitis is usually justified if the bile shows infection with pyogenic germs, but absence of finds does not justify the opposite conclusion that this affection is absent. Again in actual gastric disease biliary finds may be masked. Of great significance was the recognition of Eberth's bacillus in pure culture, even in cases giving negative Widal. As a rule, an unusual albumin content of the bile means an infection and may check up the bacterial find, but the negative results possess no corresponding significance.

Münchener medizinische Wochenschrift.

October 8 and 15, 1912.

Non-operative Treatment of Cancer.—Czerny discusses all the methods thus far recommended under this head, which when summed up make a considerable showing, and in view of the fact that 50,000 die every year in Germany from cancer, the quest for non-operative procedures for delayed and relapsing cases must be praiseworthy. We know that nature sometimes, however rarely, cures or arrests malignancy and that it sometimes yields to other diseases, notably erysipelas. The various products known by such names as cancroin, antimeristem, etc., probably act as toxins only and have no true specificity. Favorable results referable to them may be reckoned with those due to Coley's serum. All these are imitations of what we see in nature. Cancer is usually regarded as an anomaly of metabolism, which makes possible the active manifestations; but attempts to cure or prevent it from this viewpoint are not attended with success. Immune- and antisera accomplish nothing. Of recent years chemotherapy, involving the selective destruction of the tumor cell has been and is still being extensively tested. The idea is by no means new and the ancient use of arsenic belongs here. A competitor is the use of radiant energy in its various forms, while fulguration also deserves mention although it is practically electrosurgery. The hope of the future in addition to all surgical and local procedures seems to be in a combination of active remedies—salvarsan or other arsenical, thorium and other radiations and in fact of any resource which does no harm. Czerny uses silica inwardly as a routine remedy.

Telangiectatic Granuloma.—Konjetzny makes an attempt to throw light on the causation and pathology of this affection at a time when our knowledge is at a minimum. At present the dispute is still forward that it is a granuloma on the one hand and a true tumor on the other. Recently the latter view has been making converts. There is of course the possibility that different processes present a common clinical picture. The author has studied two cases and has not the slightest doubt that both were examples of proliferating angioma. The author is not the first to note that these formations may appear on the site of a minute congenital angioma. The author's second case is peculiar in that it occurred on the tongue in the form of a pedunculated structure resembling a strawberry. It developed after the patient had bitten his tongue, and bled copiously. The author looked in vain for any specific formations. As the tongue is a favorite site for congenital angioma, the most plausible view is that embryonal tissue becomes activated to proliferation as a result of traumatism.

Contagiousness of Warts.—Stern describes briefly a small episode involving the possibility of the transmission of ordinary warts. Two servant girls who had worked in the same establishment for a long period had typical multiple flat warts on the backs of the hands. One girl developed later ordinary prominent fissuring warts between the fingers. The author constructs a sequence as follows: One maid had had the flat warts for about nine months when the other first began to show them. Transmission was probably effected through a towel used habitually in common. The later appearance of proliferating warts on the soft thin skin between the fingers which occurred in the girl first infected was an example of local extension and is not necessarily transmissible in that form.

Thyroid Preparations for Sterility.—Weil mentions the astonishing results of hormone physiology, pathology and therapy, and selects for special consideration the apparent correlation between the thyroid and ovary, which comprises not merely one but a series of possibilities, some

antagonistic, some complemental or synergistic. During menstruation and pregnancy the thyroid swells, while in castrates the latter organ may be seen to be atrophic. It occurred to the author to test thyroid preparations in primary sterility assumed to be due to ovarian insufficiency. A barren woman with simple goiter received thyroid preparations on general principles and in the course of two or three months became pregnant. The author then exhibited the remedy to two other barren women who aside from a slight enlargement of the thyroid showed nothing to suggest a reason for failure to conceive. After several months conception took place in both women. Of four pregnancies while taking thyroid two ended in abortion while one conception is recent and the only case which went to term required forceps. Whether these results are coincidences or indicate a general insufficiency for child bearing is not argued. There appears to be no doubt that the thyroid hormone artificially supplied determined a physiological congestion of the ovary which promoted conception. On the other hand none of these women appeared to have had any trouble in connection with ovulation and menstruation, so that a rationale for conception is not suggested.

Diffuse Gonorrheal Peritonitis.—Albrecht has controlled four cases of this affection of the gynecological type. Owing to the somewhat rare and disputed incidence of this condition the author gives each case in some detail. One of these may be repeated here. The patient was a girl aged 18, single, who while getting over a menstrual period developed sharp abdominal pains with the entire picture later of diffuse peritonitis. Although the pain and soreness were most marked to the left the diagnosis of perforating appendicitis was made. In the hospital this diagnosis did not appear to be warranted. Incidental examination of the genitals showed acute gonorrhea, which with the relatively mild character of the symptoms gave rise to the diagnosis of gonorrheal pelviperitonitis. The case evidently not demanding any immediate surgical intervention was treated with posture, ice bags and intestinal evacuation. After temporary benefit the patient became much worse and the full picture of diffuse septic peritonitis was not long in developing. The original diagnosis of perforative appendicitis was now made and laparotomy performed. The inflammation was seen to have extended from the pelvis. The tubes were markedly swollen, discharging pus into the latter. Gonococci were cultivated from the peritoneal pus. Despite the apparent severity of the case the patient rapidly improved after cleansing and closure of the abdominal cavity, thus bearing out Döderlein's teachings. The gonococcus may attain such virulence as to infect the peritoneum but nevertheless the prognosis may be good.

Drug Treatment of Tuberculosis Pulmonalis.—Hecht enumerates the drugs which aid in the management of tuberculosis. Pyramidon is almost indispensable for the reduction of high temperatures, and has come to be looked upon as a quasi-specific. Preparations of the creosote type, notably guaiacol, are also popular, and seem to act favorably upon the symptoms of the disease, both physical and rational. General tonics which contain quinine, arsenic, iron and strychnia in combination with some of the alleged specifics find much vogue. Among the latter the author enumerates a supposed antibactericide, introduced about 15 years ago, but fallen into disuse. It is said to be a camphor (alantol) from the root of a species of ailanthus.

Deutsche medizinische Wochenschrift.

October 17, 1912.

Goiter Heart.—Bauer attempts a description of the combined cardiac symptoms of goiter familiarly spoken of as goiter heart. He recognizes an erethetic and a torpid form and ascribes both to dysthyroidism. In endemic goiter there is a cardiac form which differs from the erethetic and is characterized by an accidental systolic murmur most marked over the pulmonic artery by an accentuation of the second pulmonary sound and a slight widening of the area of cardiac dulness to the left. The apex beat is not more pronounced than normal nor are there either acceleration of the pulse or any striking subjective symptoms. This form of goiter heart is probably thyreotoxic like the others and may be termed the "torpid" form to bring it into sharp contrast with Kraus's erethetic form. There are numerous transitions between normal, chlorotic and thyroid hearts.

Pancreas in Chronic Alcoholism.—Lissauer states that the pancreas frequently shows organic disease in alcoholics and that the alterations involve both parenchyma and connective tissue. We may see an interstitial pancreatitis due to inflammation of the connective tissue and a fatty degeneration of the parenchyma, and both these lesions may be regarded as especially ethylogenic, as the author has not encountered them save in alcoholics. The two types of lesion conform to the finds in the livers of alcoholics—fatty liver and cirrhosis. Friedreich has already described "drunkards' pancreas," so that the author claims no priority. In theory alcoholics should be prone to pancreatic diabetes and, as a matter of fact, they are known to be subject to the latter.

Rationale of the Tuberculin Reaction.—Meyer and Schmitz state that despite all efforts this reaction remains a mystery. We only know certain truths which bear directly or indirectly on the subject. The authors have carried out a research with bovine bacilli and tuberculin upon rabbits, which are very sensitive to the latter. They believe that they have shown the existence of a reactive substance in the erythrocytes of the tuberculous animal which is absent in the healthy subject. When tuberculin is injected in minimal amounts it is taken up by the erythrocytes and carried to the focus of the disease, where a receptor apparatus binds it and at the same time a hyperemia is set up. The combination of receptor plus tuberculin is a toxin and sets up a general reaction. Eventually with repeated injections the receptors are used up, no more combination toxin is formed and acquired immunity results. Abderhalden has also recently shown by the optical method that the blood plasma of the tuberculous is able to disintegrate the peptone of the tubercle bacillus, while healthy plasma has no such power. He brings this discovery in relationship with his own, but this inference does not seem directly forthcoming.

An Alleged Prophylactic for Tuberculosis.—Jarosch under a proprietary name discusses the recent free use of aluminium chloride as a prophylactic in pulmonary tuberculosis. The drug had previously been shown to exert great antiseptic power in local catarrhal conditions. It is now being used as a mouth wash and gargle and as an inhalation in a number of sanatoria where tuberculosis subjects run the risk of contaminating one another. It has been noted that to this prophylactic action is added a definite curative property for patients who began to use the inhalation as a disinfectant only for the common good began to exhibit direct improvement in symptoms referred to the upper air passages.

A Case of Ununited Fracture of the Ulna Treated by Bridging the Gap with a Slice Sawn from the Tibia.—C. H. Fagge reports the case of a boy, aged 11, who was admitted into Guy's Hospital on September 16, 1910. About two months before admission he had fallen, breaking both bones of the right forearm. On admission there was a marked deformity with large bony bosses at the middle of both bones and complete loss of pronation and supination. Examination under the X-ray screen showed that this was due to cross-union, with much overlapping of the fragments of both bones. On September 30 the site of the fractures was exposed, a wedge including callus was sawn from the radius and the ends were joined by a Lane's four-hole plate: the ulna was divided and plated in the same way.—*Proceedings of the Royal Society of Medicine.*

Insurance Medicine.

SUGGESTIONS TO MEDICAL EXAMINERS.

BY THE MEDICAL EDITOR.

COMPLETION OF THE EXAMINER'S REPORT.

ERRORS AND OMISSIONS.—The examiner should review every answer in his report before forwarding the papers to the company so as to assure himself that there are no omissions or incomplete answers. If all necessary information is supplied and errors revised at this time, both the examiner and the company will be spared the trouble and annoyance of further correspondence, and the agent will not incur the danger of losing his business through delay which might have been avoided. It is most important for the agent to receive the policy for delivery as soon as possible after the examination has been made on account of the liability of the applicant to change his mind, or to become influenced by the arguments of busy rivals who are always in the field.

A record of the omissions and incomplete answers for each examiner has been kept at the home office of the writer's company, and it shows that many examiners who are undoubtedly well qualified and competent cause considerable correspondence, trouble, and delay by not properly completing their reports.

ALTERATIONS AND ERASURES.—The medical examiner's report should be free from ditto marks, alterations, interlineations, or erasures; furthermore, it must be kept in mind that a dash does not constitute an answer to a question. An application is an actual legal contract and must be drawn up with the requirements of the law in mind. Corrections are, however, unavoidable at times, and, when demanded, should be made by drawing a line in ink through the words at fault; the correction should then be duly attested by the initials of the examiner with date of the attestation. This procedure is especially important in the blanks of companies operating under the laws of a State which require that photographed copies of applications be attached to the policies.

CONFIDENTIAL INFORMATION.—Whenever an examiner declines or postpones an applicant he should mail a confidential letter to the company *at once*, giving his action and the cause for it. Furthermore, even if he recommends the applicant for insurance, the examiner should inform the company by means of a confidential letter as to anything brought out in the course of the examination which may affect the insurability of the risk, even though the examiner is not certain that this information will prevent the issuance of insurance to the applicant. Many companies supply their medical examiners with blanks and addressed envelopes to be used for this purpose.

This procedure gives the examiner an opportunity to express his private opinion of the real insurable worth of the applicant to the company. It happens, not infrequently, that an examiner is reluctant or even unwilling to incorporate certain information in his report for the reason that it might hurt his own interests or those of a friend or patient if these facts were known in his community. The examiner in such cases may be fearful that the secret would be divulged were it to come to the eyes of the agent or manager in writing. It is the manifest duty of an examiner, however, to give the company the benefit of his knowledge of everything of an adverse nature affecting the risk, and he can do this quietly and without any publicity by means of a confidential letter. The items which render the risk questionable may occur in the family history, in the personal record of diseases or injury, or in the matter of habits or environments.

In order that these letters may prove of value to the company they must be written and mailed immediately after the examination and investigation of the applicant is completed. The information contained in such letters will always be treated by the company as strictly confidential, and the examiner need not, therefore, hesitate to furnish facts of any nature.

Confidential letters are especially important for the reason that the examiner's report is sometimes lost and the company has then no record of the adverse information unless notified by one of these letters. Another reason is that in the case of companies which allow their agents to receive the report from the examiner, some agents will occasionally suppress or destroy an unfavorable report in the hope of getting a more complacent examiner to recommend the risk.

Trauma and Pulmonary Actinomycosis.—Rauth reports a case of actinomycosis of the lungs in which the question of the relationship of the latter with accident came up. The subject was a young locksmith who, while lifting a heavy load, felt a lancinating pain on the left side of the chest. At the same time the latter came in sudden contact with the object lifted—an automobile axle. Thereafter he began to have pains in the back and left side, so that he was soon forced to give up his work. He did not improve and sought the clinic, where he was found to be in high fever, with the heart dilated and a systolic murmur at its base. The fever was apparently due to pleurisy, as a friction murmur became audible. There was diminished resonance over the left upper lobe. The evidence day by day pointed to some process in the latter locality which was not tuberculous. Finally a swelling appeared on the back, to the left of the middle line between the fifth and twelfth dorsal vertebræ. Exploratory puncture led to the diagnosis of actinomycosis. Death occurred seven months after inception of the disease, and autopsy left no doubts as to the correctness of the diagnosis. The pleurisy had disappeared without traces and it became apparent that this lesion had not been due to the fungus. The author assumes that actinomycosis was originally present in the hilus of the lung in a latent state and that the overstrain and concussion—which also caused pleurisy—mobilized the fungus and thereby enabled it to set up active disease in the lung.—*Zeitschrift für Versicherungsmedizin*, July, 1912.

The Selection and Training of the Medical Examiner.—A paper with this title was read before the Medical Section of the American Life Convention, held in Chicago Sept. 8, 1912, by Dr. E. A. Babler, of St. Louis. Dr. Babler thought that the question of selecting and training a local examiner was of such great importance that the convention should have a committee to be known as "The Committee on Examiners," with such duties and powers as would be necessary to secure for the members of the convention the best of service in every locality in which the companies represented at the convention did business.

Book Reviews.

Surgical Clinics of John B. Murphy, M.D., at Mercy Hospital, Chicago. Volume I, Number III. Octavo of 174 pages, illustrated. Published bi-monthly. Price per year: Paper, $8.00; Cloth, $12.00. Philadelphia and London: W. B. Saunders Company, 1912.

The present number is a continuation of the series, and following an account of the cases exhibited on previous occasions, there are clinical discussions of several bone cases, tuberculosis of the intestine, cystic goiter, tumor of the kidney, cholelithiasis, cerebral hemorrhage, and an account of the so-called five diagnostic methods frequently referred to by Dr. Murphy.

Fever-Nursing. Designed for the use of Professional and Other Nurses, and especially as a text-book for Nurses in training. By J. C. Wilson, A.M., M.D. Author of "A Text-book Treatise on the Continued Fevers," and "A Handbook of Medical Diagnosis," etc. Seventh edition, revised and enlarged. Price $1.00. Philadelphia and London: J. B. Lippincott Company.

This little book is too well known to need any extensive notice. The present edition has been revised and brought up to date. The work is thoroughly reliable, and will form a useful addition to the library of every nurse.

Aids to Ophthalmology. By N. Bishop Harman, M.A., M.B. Cantab., F.R.C.S.Eng., Lecturer in Ophthalmology, West London Post-Graduate College; Assistant Ophthalmic Surgeon, West London Hospital; Ophthalmic Surgeon to the Belgrave Hospital for Children; Chief Clinical Assistant, Royal London Ophthalmic Hospital, Moorfields; Oculist, London County Council Blind Schools; Late Examiner in Anatomy, Cambridge University; Lecturer in Anatomy, King's and Caius Colleges, Cambridge; Senior Ophthalmic Assistant, The Middlesex Hospital. With 100 illustrations. Fifth edition. Price $1.00. New York: William Wood and Company, 1912.

We are not surprised to see that this compend has reached a fifth edition. The book has undergone a thorough revision, and is larger than the previous edition by about fifty pages. The chapters on Glaucoma, Optic Neuritis, and Muscle Balance have been amplified; the section on Refraction has been recast; rare diseases are intentionally omitted; and the student will find this volume, as formerly, one of the best of a good series.

Lehrbuch der Krankheiten des Säuglings. Von A. Lesage, Médecin des Hôpitaux in Paris. Übersetzt und mit Anmerkungen versehen von Prof. Dr. Rudolf Fischl in Prag. Price 12 marks. Leipzig: Verlag von Georg Thieme, 1912.

The purpose of this work is the discussion of the diseases of the nursling whose physiological peculiarities are bound up with its delicate constitution, its rapid growth, and its special mode of nourishment. The pathology of the nursling reflects these peculiarities. The first part of this volume deals with the physiology of the normal infant, a knowledge of which is essential to a proper understanding of the diseases affecting it. The author notes that many conditions during infancy that are denominated gastroenteritis are in reality a clinical manifestation of a general morbid derangement, such as septicemia or meningitis, and that the scope of strictly local disorders of the digestive organs has within recent years become narrower and narrower. The author describes the newer conceptions regarding spasmophilia, the disturbance of equilibrium of the bodily temperature, heat stroke, summer diarrhea, scarlatina, scarlatinal albuminuria, the cachexias and the anesthesia of the weaning period, the dermatolymphatic cachexia, the septic infections, cerebrospinal meningitis, tuberculous meningitis, and the care of infants during the first three months of life. The German translator has shown a nice discrimination in choosing this work as a means of introducing French pediatric conceptions to his countrymen and has admirably acquitted the task of editing and supplementing the original. To the English reader this work provides the unusual opportunity of viewing French pediatrics through German eyes.

Die Vasomotorisch-trophischen Neurosen. Eine Monographie, von Dr. R. Cassirer, Privatdozent an der Universitat Berlin. Zweite umgearbeitete und vermehrte Auflage. Mit 24 Abbildungen in Text und 24 Tafeln. Price 30 marks. Berlin: Verlag von S. Karger, 1912.

During the twelve years that have elapsed since the first edition of this work appeared many additions have been made to the subject of the trophic neuroses, which account for the large size of the present edition, which consists of 988 pages of text, together with a series of 24 plates. The titles of the chapters are as follows: Anatomical and physiological introduction; the acroparesthesias and allied conditions; erythromelalgia; Raynaud's disease; chronic acroasphyxia; sclerodermia; acute circumscribed edema, and multiple neurotic cutaneous gangrene. The vast ramifications of the trophic neuroses into the various domains of medicine is seen in the synopsis of the topics discussed in the chapter on acute circumscribed edema. These include rheumatic affections, intoxications, psychical and physical traumata, cutaneous edemas, swellings of the mucous membrane of the upper air passages, gastrointestinal manifestations, urticaria, purpura with transient edema, serum sickness, chronic neuropathic edema, trophedema, etc. The author has presented his subject with characteristic German thoroughness. The extensive bibliography appended to the volume gives only a hint of the vast amount of labor expended by the author in developing his theme. This work will undoubtedly be valued by all neurologists as an important contribution to the literature of the trophic neuroses.

Tuberculin Treatment. By Clive Riviere, M.D. (Lond.), F.R.C.P., Physician East London Hospital for Children, Shadwell; Physician to Out-patients, City of London Hospital for Diseases of the Chest, Victoria Park; and Egbert Morland, M.B. and B.Sc. (Lond.), M.D., Beme, of Arosa Switzerland; Visiting Physician to the English Sanatorium (Villa Gentiana). Price $2.00. London: Henry Frowde, Oxford University Press; Hodder & Houghton, 1912.

The methods of tuberculin treatment have been developed to a greater extent in England than anywhere else. The present manual is the fruit of a ripe experience acquired in the application of the methods by two separate workers who were about to publish individual manuals on the subject when they decided to merge the two books into one. In this manner they have been able to widen the scope of the entire volume, for the personal experience of the writers was in different fields. The text is subdivided into three parts. Part I discusses the general lines of tuberculin administration. It deals with the action of tubercle products in general, the tuberculin reaction, the standard of dosage, the route of administration, the selection of cases, etc. Part II discusses the method of immunization with tolerance (Koch) or the treatment of autotoxic tuberculosis. Part III deals with the method of immunization without tolerance (Wright), or the treatment of localized tuberculosis. The theme of this volume is a complicated one, and one difficult to master, but the authors have succeeded in presenting the subject in a skilful manner. The book is compact and well printed, and suitable as a working manual.

Infant Mortality and Milk Stations. Special report dealing with the problem of reducing infant mortality. Work carried on in ten largest cities of the United States. Together with details of a demonstration by public and private agencies in New York City during 1911 to determine the value of milk station work as a practical means of reducing infant mortality. Edited by Philip Van Ingen, M.D., Member of the New York Milk Committee and Medical Director of the Committee for the Reduction of Infant Mortality, and Paul Emmons Taylor, Secretary of the New York Milk Committee and Director of the Committee for the Reduction of Infant Mortality. Price $1.00. New York: The New York Milk Committee, 1912.

The title page of this volume fully indicates its content and scope. No better brief has ever been prepared in advocacy of the campaign for the prevention of infant mortality. In the first chapter there is stated the problem, and statistics are presented showing the conditions regarding infant mortality that obtain in foreign communities and in the United States. In Chapter II is discussed the campaign against infant mortality in New York City prior to 1911. The next chapter describes this campaign as it was carried out in 1911. Chapter IV shows by means of comparative tables the results of this campaign. There then follows a description of the milk stations of the New York Milk Committee. The titles of the succeeding chapters are as follows: Campaigns in other cities, general conclusions, the extension of relief through milk stations, the establishment and operation of milk and health stations and the extension of milk stations' activities. The book is illustrated with a large number of photogravures of milk stations, charts, circulars, etc.

Society Reports.

MEDICAL SOCIETY OF THE STATE OF NEW YORK.

FIRST DISTRICT BRANCH.

Sixth Annual Meeting, Held at Poughkeepsie, October 4, 1912.

THE PRESIDENT, DR. DANIEL BAILEY HARDENBERGH OF MIDDLETOWN, IN THE CHAIR.

Amendments to the By-Law.—The following amendments to the by-law, proposed at the meeting held in Yonkers, October 12, 1911, was acted upon and passed: Amend Section 3, Chapter II, by striking out the words "on January 1st of" and substituting the words "at the close of the annual meeting of the Medical Society of the State of New York."

President's Address.—Dr. DANIEL B. HARDENBERGH of Middletown delivered this address (see page 843).

The Owen Bill.—Hon. RICHARD E. CONNELL of Washington, D. C., member of the House of Representatives, said that he had been invited to speak on the measure introduced in the Senate by Hon. Robert L. Owen of Oklahoma, providing for the establishment of a National Health Department, which, in short, was intended to establish a department of government possessing the powers of a board of health—powers in our time so tremendous and so necessary when conditions called for their application. Senator Owen called his measure "A Bill for Race Conservation—A Conservation of Human Life and Efficiency." Briefly epitomized, the bill provided that there should be at the seat of government an establishment, known as the United States Public Health Service, and a director of health, who should be the head thereof. The director should be appointed by the president. As assistants to the director of health, the bill provided for three commissioners of health, two of whom should be skilled sanitarians, and one a skilled statistician, also to be appointed by the President. The one sentence in the bill told the whole purpose of such a department of government. It was in Section III as follows: "That it shall be the duty of the Health Service to collect and disseminate information relating to the public health and to enforce the observance of all regulations and laws of the United States relating to health: Provided, That this act shall not be construed as attempting to authorize the health service to exercise, or attempt to exercise, without express invitation from the chief executive, or other proper authority of the State, any function belonging exclusively to such State, or to enter any premises without consent of the owner or occupant thereof; but the director of health, upon request of the chief executive, or other proper authority, of any State, Territory, the District of Columbia, or any insular possession, may detail for limited periods an officer or officers, employee or employees, from the health service to assist the health authorities of such State, Territory, District, or insular possession, in protecting the health of the people of such jurisdiction."

At the outset the bill had encountered powerful opposition founded on the belief that the purpose of the medical profession which had been urging this department was to favor, by law and the great powers which went with such a bureau, one school of medicine to the exclusion of all others. On this point, Senator Owen, in one of his recent speeches in the Senate, said: "I am entirely opposed to promoting one school of medicine over another school of medicine. My purpose in urging a department of public health has been to establish a department of human conservation, educational rather than regulative, which would deal with the matter from an educational standpoint, so as to make effective and efficient the knowledge which we are slowly acquiring with regard to the preservation of human life." Then, in order to meet the objection which was brought forward by the League of Medical Freedom, the friends of the bill voluntarily presented this amendment by way of emphasizing the sincerity of their purpose: "And provided further: That the health service established by this act shall have no power to regulate the practice of medicine or the practice of healing, or to interfere with the right of a citizen to employ the practitioner of his choice, and all appointments within the health service, including the head of the service, shall be made without discrimination in favor of or against, any school of medicine, or of healing." Such a bureau would not attempt to heal people, or to treat plagues, or fevers, or epidemics, because its mission would be to prevent all these, leading the great power of the government to the saving science of sanitation. Such a bureau would deal with sanitary engineering, sanitary construction of streets, alleys, house-sewage, water-supply, milk-supply, and food-supplies in general. It would have to do with the proper care of markets, the control of insect life, which was so frequently the cause of disease, with the extermination of the house-fly, and with the education of the people through authoritative publications, the schools, and special instructors on the rules of right living. These were but a few of the purposes set forth in the debates in the Senate on the Owen Bill.

The present Congress established a bureau to be devoted to the investigation and remedying of conditions surrounding children and their employment and at its head was placed Miss Julia C. Lathrop, a graduate of Vassar College. This bureau expected to set up standards of cleanliness and to demand that the souls of children should not be stifled in loathsome employments. It was not his purpose to discuss the mission of the League of Medical Freedom, for his confidence in the American people and the spirit of the government was such that he knew an injustice to an honest project had but to be pointed out to be remedied. That humanity had suffered at the hands of the quack, the impostor, and the unscrupulous vender of nostrums and humbug remedies, there could be no doubt. But these were not going to be exterminated by an Act of Congress. They could not save people from the consequences of their own credulity, ignorance, or mistake by an act of the legislature. This much the government could do. It could cultivate among the people an intelligent understanding of health conditions, from the use of the bath to the necessity of pure air. It could point out the consequences to the human race of the violation of the laws of health. It could lend its power to the work of cleanliness in places from which disease might spring if neglected. Mr. Connell closed his paper by paying a tribute to the unselfish patriotism of the medical profession which would, if it could, prevent disease and sickness of all kinds, thus sacrificing its own calling for the good of the human race. What profession ever undertook a more noble work?

Functional Nervous Diseases Due to Eyestrain.—Dr. PETER A. CALLAN of New York read this paper and presented the following conclusions: In all functional neuroses involving the head and torso, the eyes should be carefully examined and in order to do so the ciliary muscle must be fully paralyzed and then the usual tests employed, the ophthalmoscope, shadow test, and lenses, not neglecting the ocular muscles. Correcting lenses should be prescribed and constantly worn and in no other way could the eyes be excluded as causative agents of an existing neurosis. The slighest refractive error, especially astigmatism, should be corrected. He had seen the best results from the weakest cylinders. An ocular error in the weak was capable of originating or keeping up a vicious circle of disturbance that would have no positive effect on the robust. There was no uniformity in symptoms due to eyestrain. They found hyperemia, conjunctival irritation of the eyelids, chalazia, blepharitis, photophobia, twitching of eyelids, etc. Again they met with patients who apparently had eye symptoms, but only suffered from headaches, or were nervous without any apparent cause; others were only troubled when they traveled by train, or were present at a ball game, or in the theater, or influenced by the moving effects of the cinematograph. Patients with high degrees of refractive errors soon learned their ocular limitations, and thereby avoided eyestrain; this was not the case in persons with medium or slight amounts. School children were not infrequently punished or regarded as stupid because of ocular conditions beyond their control.

Progressive Curvature of the Radius (Madelung's Deformity).—Dr. HENRY LING TAYLOR of New York read this paper. (See page 752.)

Dr. A. JACOBI of New York, president of the American Medical Association, thanked the members for their kind and warm reception. When the Medical Society of the State of New York resolved upon an innovation establishing the district societies it did a great deal toward the uplifting of the profession, bringing in contact a number of men who ordinarily did not meet one another. There was added a great influence to the various county societies. There was no more forlorn condition to be noted than that of a doctor living alone, a hermit's life. There was no more forlorn hermit than the doctor who meant to be a doctor day and night. That was one reason why the county societies were doing so much good; the district societies were doing more good; the State societies even more good than the county and district societies. And this was why the American Medical Association comprising 34,000 to 35,000 physicians in the United States gave an unusual advantage not only to the societies but to the in-

dividual members of these societies. Dr. Jacobi said that he was always instructed when he attended county or district societies; at these meetings he always learned something. All who joined these societies had the same advantage he had. This was why he always answered one who asked what he should do after having passed his examination—"Join your county society." He believed that he had every reason to congratulate himself because this district branch had invited him to be present and join in their proceedings. Yet there was much for them to do. In the State of New York there were between 13,000 and 14,000 physicians, while in the State Society there were only about 7,000 members. Of these 7,000 only about 3,450 belonged to the American Medical Association. He asked why were there not more members?

Dr. JOHN CALHOUN OTIS of Poughkeepsie expressed his appreciation of having been nominated and elected the presiding officer for the coming year; he also appreciated the responsibilities of having to preside over the First District Branch. Incidentally he said that no colleges in the world gave better instruction to their students than those in America and no better service was given than in the American hospitals. There was a great field in preventive medicine, particularly in diseases afflicting the kidney, in cancer, etc. In many diseases there was much to be done and it behooved the first district branch to take up a consideration of the diseases about which they knew so little.

Pyloric Stenosis in Infants.—Dr. CHARLES GILMORE KERLEY of New York read this paper. That true pyloric stenosis was a congenital condition was accepted by most authors. There were three types of this disease in infants, the spasmodic, the hypertrophic, and the combined type, Pfaundler noted that the first vomiting, or onset of the disease, was between the fourth and fourteenth days in 50 per cent. of the cases; from the second to the third week in 25 per cent.; and from the third to the sixth week in 25 per cent. According to Ibrahim's investigations of 206 cases there was a rapidly ascending curve in the first month and a reduced frequency with advancing age. According to Ibrahim males were affected about four times as often as females. Pyloric stenosis was one of the diseases upon which a great deal of theorizing had been done. Prominent and among the most universally recognized theories up to 1897 were those of Hirschprung and John Thomson. According to the former there was a congenital defect, a primary pathologically increased quantitative development of the pyloric wall which constricted the lumen, while Thomson contended that the essential lesion was not muscular but primarily a nervous one. There was to date no convincing evidence that the spasm was set up by erroneous finding or by hyperacidity. In hypertrophic stenosis hyperacidity was often the case. During recent years most authorities considered the condition as primarily spasmodic; by some this condition was considered a primary hypertrophy with a secondary spasmodic element added. The findings at post mortem were remarkably uniform. The alimentary canal below the pylorus was perfectly normal. The esophagus was sometimes noticeably dilated, sometimes of normal caliber. The stomach was usually much dilated. Finkelstein reported a case in which the thickening was due to an increase in the longitudinal fibers. The lumen varied in size, sometimes so small as barely to admit a fine probe. The test of functional potency by hydrostatic pressure was fallacious for the redundant folds of mucous membrane might act as valves. Vomiting was usually the only active symptom of the stenosis whether spasmodic or due to stricture. The vomiting had never, in his experience, appeared before the second week except in spasmodic cases in which it appeared at birth, or after the eighth week. The stools were normal and there was no suggestion of gastric disturbance. The vomiting might occur after each feeding but more frequently two or three feedings were retained and then a large amount was ejected. The vomiting was forcible in character. With the vomiting there was an associated constipation, loss in weight, and a voracious appetite. The child did not appear ill except for the wasting and moderate prostration. In all young infants that developed persistent vomiting with constipation or even without this latter symptom, stenosis of the pylorus should be looked for. As to the differential diagnosis between hypertrophic stenosis, pyloric spasm, and the combined type, it might be said that palpable pylorus might be looked upon as a hypertrophic pylorus and a pylorus that showed sufficient thickening to be palpable required operation. In the spasmodic cases there appeared to be vomiting periods. In some instances there would be no vomiting for a day or two. Cases of this type offered the best chance of cure without operation. In the combined type there was moderate hypertrophy and spasm; the stenosis might be intermittent and moderate in degree. It was possible for a considerable quantity of the stomach contents to pass into the intestine, if but small quantities of food were given at one time. The prognosis was dependent largely upon the type of the lesion. The age of the child, and the severe nature of the operation, meant that it would always show considerable mortality. Cases with palpable tumor should be given the advantage of immediate operation. There were comparatively few of the spasmodic pyloric cases without involvement of the muscular structure and in such cases the prognosis was good and all should recover. In the combined cases the prognosis was largely dependent upon the management. In the presence of tumor the treatment should be operation followed by breast milk feeding. Postoperative vomiting rarely caused trouble. Regurgitation might be obviated by bringing the force of gravity into play by placing the head and shoulders of the child on a high pillow. These children needed fluid badly and the Murphy drip should be used after the operation. Twelve hours after operation teaspoonful doses of water or breast milk might be given at one-half hour intervals. Later the amount of nourishment and the method of feeding must be determined in each case. The stomach should be washed out daily with 5 per cent. bicarbonate of soda solution. Where breast milk could not be obtained he had secured the best results by the use of fat-free cow's milk diluted with gruel or evaporated unsweetened condensed milk. The presence of fat and sugar in the stomach caused irritation. Dr. Kerley said he did not look with favor on opium or the bromides, and thought that little could be expected from them. When the vomiting continued and there was progressive loss of weight and strength operation should not be delayed. Rectal medication would be useful for a day or two only and should not be used oftener than twice in twenty-four hours. Local treatment was of little or no value.

A Consideration of Diet in Acute Diseases.—Dr. W. STANTON GLEASON of Newburgh read this paper. He said that the principles of food economics were by no means new and that even in the time of Moses certain laws were in force governing the use as food of the flesh of fish, meat, and fowl. These laws, although religious in character, carried an underlying hygienic truth and value. This early knowledge, although rudimentary, had its influence, but it has been left for this generation to perfect in detail the practical application of the value of foods, as to their quantity, quality and heat-producing elements as applied to the even sustenance of the individual. European investigators were the pioneers in this line. To-day, however, through the work of the United States Department of Agriculture, the Carnegie Nutrition Laboratory, and various educational institutions, they were well in the vanguard of progress. Dr. Gleason reviewed in a brief manner the general question of modern dietetics. He considered typhoid fever as a type in the application of modern diet in acute disease. This disease from its duration and consequent drain upon the body fluids and tissues with the accompanying perversion of the digestive and assimilative processes, imposed a special responsibility in making the proper adjustment of food to meet the varying changes produced by prolonged pyrexia. They had two conditions constantly present in typhoid fever, increased combustion and diminished assimilation. Their adaptation of nourishment must therefore be influenced by the age of the patient, the intensity of the fever, and the condition of the digestive and excretory organs. Each case should be carefully studied and individualized, and the physician should be as solicitous in regard to food requirements as in regard to symptoms. He believed that Coleman's plan of nourishing the patient in typhoid fever represented the modern trend in feeding. It was important to remember that the typhoid fever patient required about 35 calories per kilograms of weight, and in determining the exact amount of nourishment, it was only necessary to know the approximate weight of the individual. From his personal observation, all acute diseases responded well to the caloric standard of food requirements, applying judicious qualifications as the case demanded.

Urgent Surgery in Association with Uterine Fibroids.—Dr. JAMES E. SADLIER of Poughkeepsie read this paper. He reported several cases.

Gallstones.—Dr. PARKER SYMS of New York read this paper. He said that gallstones were of very common occurrence and though they gave rise to a distinct train of symptoms, their importance and significance were scarcely recognized. Gallstones were more common in women than in men. They were rare in youth, belonging particularly to the middle period of life. They seldom exhibited symptoms before the twenty-fifth year. They were always the result of infection, depending upon their formation on a

change in the character of the bile. They were frequently formed around a nucleus which might be merely a mass of thickened bile or a mass of mucus or some epithelium which had been shed during the process of inflammation. The infection might be due to one of a large variety of pathogenic bacteria, or there might occur a mixed infection. As in all infectious lesions of the alimentary tract, the colon bacillus played a very important part. This was also true of the bacillus of typhoid fever. The invasion of the biliary passages took place undoubtedly by one of three different routes: (1) by direct ascent from the duodenum through the common duct; (2) through the lymphatic system; (3) through the portal system, this being the most common. The mechanism of gallstone production was really dependent upon morbid changes in the character of the bile. They were dependent upon an inflammation of the mucous membrane, the result of infection. The very acute cases were not the ones that formed stones; it was the chronic, long-continued inflammation that produced gallstones. They might form in any part of the biliary system, but the majority found their origin in the gall-bladder. In studying the etiology of gallstones one should bear in mind the fact that there was a close association between the liver with the biliary system, the stomach, the intestines, and the pancreas. This was true embryologically, histologically, physiologically, and pathologically. Gallstones might produce infection and inflammation of the biliary tracts; they might produce infection of the liver; adhesions, involving any of the organs in this region, resulting in deformity, obstruction, and impaired function; they might produce pancreatitis or glycosuria, and, last but not least, they were the most potent cause of cancer of the biliary system. In fact gallstones were a pre-cancerous condition. While they were known to be caused by infection and inflammation it was equally true that they tended to provoke further infection and to keep up and produce inflammation. The so-called latent gallstone, doing no harm, did not exist. It produced at least a mild form of inflammation and irritation, and at any time might set up a most violent and destructive inflammatory process. Because of long irritation gallstones frequently caused cancer, and this was particularly true in cases of cancer of the gall-bladder; cancer of the gall-bladder was said to be preceded by gallstones in 95 per cent. of the cases. Gallstones might incite a chronic hepatitis, a form of cirrhosis, and frequently were the cause of a chronic pancreatitis. Infection might be transmitted to the pancreas from the bile-passages, and this was particularly liable to occur when a stone was impacted in the common duct. In the operative treatment of gallstones, pancreatitis as a complication should be borne in mind, for it rendered drainage essential to a complete cure. In discussing the diagnosis Dr. Syms said that it was unfortunate that the clear-cut classic picture of gallstone colic was rare rather than common. There had been a mistaken idea that in the majority of the cases gallstones did not cause symptoms; the fact that the symptoms were so frequently overlooked was owing to indifference on the part of the patients, or to ignorance on the part of their physicians. In the majority of the cases the gallstones were at rest and were not causing active and violent irritation; the gall-bladder and bile-ducts were chronically inflamed The symptoms would be those of a chronic inflammation, mostly those of a chronic dyspepsia, and the patients would have sour eructations, belching of gas, a sense of fullness, and tension after eating. They usually suffered from constipation. These were the cases in which the diagnosis was not easily made; they should be carefully watched. After considering the correlation of certain diseases of the stomach, the biliary tract, and the appendix, Dr. Syms considered the indications for operation. The mere diagnosis of gallstones alone was sufficient to warrant an operation. This opinion was based on the fact that all gallstones were doing more or less harm. If one operated during the early stages one should be able to accomplish the necessary object by means of a simple and a safe procedure and the chance of radical and permanent cure was much greater than it would be if one waited until complications had set in. Nearly all the complications were the result of delay. All things being equal, the death rate in biliary surgery bore a distinct relation to the period of the disease. Cancer resulted from delay because of the prolonged irritation. As all cases of gallstones were dependent upon infection, drainage was of the utmost importance and should be a routine procedure. For this reason the gall-bladder should be preserved unless there was some strong reason for its removal. Drainage should be continued until clear bile was flowing.

The Present Status of Medical Therapeutics.—Dr. Andrew Victor Jova of Newburgh said that to one who had followed the progress of medical science the vast improvements in many of its branches was certainly astonishing; but yet there was much to be desired in others. Modern medicine had been successful in many ways, but it had failed in its principal aim, the cure of disease. Many of our drugs employed relieved symptoms, but very few of them cured. Every ten years the pharmacopœia was revised, and a number of new remedies added to an already superabundant list until its products and preparations were now numbered by the thousands. Yet he asked, with all this array of medicines, how much had been accomplished. How many of the drugs had made good their pretensions of cure? The great majority of them, he believed, appeared to-day and were forgotten to-morrow. After many years of honest and arduous work drug therapy had been a failure, for we were to-day not far from where we began years ago. Materia medica, with its long list of drugs and preparations, had been a disappointment, and the newer remedies clothed in their long scientific names with the unpronounceable array of consonants a greater failure still. It might be argued that even though drugs cured but few diseases, yet they alleviated symptoms, relieved pain, and placed the patient in a more favorable condition for recovery; but we could not deny the fact that much was accomplished almost as well by the old practitioners when they had fewer drugs at their command. When we came to compare the value of the old and the new remedies we would realize how little progress had been made in drug therapy during the last century. The salicylates, opium, quinine, digitalis, iodide of potassium, the bromides, iron, and castor oil had found no successful competitor for their respective uses. We could draw but one conclusion, namely, that our present drug therapy, with few exceptions, had been a failure, and that conservatism in the administration of drugs should be exercised until a more satisfactory method had been found.

D. A. Jacobi of New York was of the opinion that those who refused to use drugs did not do their whole duty toward the profession or to the public; the older he got the more he used remedies. He, therefore, felt inclined to criticise the reader of the paper and hoped that he would mend his ways.

The Relation of Prolonged Pregnancies to Some Cerebral Lesions and the Backward Mental States.—Dr. Henry Lyle Winter of Cornwall said that it had taken him over fifteen years to collect 75 cases in which he could be sure of the duration of gestation, and of these 42 were idiots and 33 imbeciles. Inquiry among medical friends developed the fact that about 5 per cent. of all pregnancies were prolonged beyond the normal limit, but this was undoubtedly a movable percentage and it was, of course, absolutely impossible to even guess at the percentage of prolonged pregnancies which yielded mentally deficient children. In examining the histories of the mentally deficient which had come under his care he found that over 46 per cent. of the idiots, over 25 per cent. of the imbeciles, less than 5 per cent. of the feeble-minded and one-half of 1 per cent. of the backward children presented histories of abnormal births. The percentages he gave were worked out from the histories of 62 idiots, 105 imbeciles, 143 feeble-minded, and 400 backward children. Of the 75 cases in which the duration of pregnancy was reasonably certain 24 (32 per cent.) were instrumental births. Labor was normal in the others. In the 24 cases the cause might or might not have resulted during delivery. Dr. Winter presented a brain which was removed from a case of imbecility, one of the group of 75 presenting definite histories. This birth was normal. There was a cystic degeneration of the cortex where it apparently had its origin superficially. The brain presented was like several others which he had seen in similar cases. In all of the brains he had examined the lesions were over the parietal and occipital cortex. He thought that the figures be presented permitted the assumption that the fetal brain might be injured and probably by the maternal parts. Over-long pregnancies placed the infant brain in jeopardy in two ways through accident before birth and during birth. To avoid both of these dangers he urged the necessity of determining the date of the beginning of pregnancy in every case and the terminating it at term. He suggested that where choice was possible podalic version was less likely to result in an injury to the child's brain than a forceps delivery.

The Old Method of Treatment of Syphilis Versus the New.—Dr. Mihran B. Parounagian of New York read this paper. He said that it was not his purpose to cast any reflection upon salvarsan or to deprecate in a way the

marvels which he had seen it perform; indeed, the greatest skeptics were now convinced of its high efficiency. In his paper he compared the new with the old methods of treatment and presented what he considered the rational treatment of syphilis which was as follows: In the fresh case of syphilis in an adult, after demonstrating the presence of the spirochetes, (1) excision if possible of the primary sore, particularly before the eruptive stage, as this would remove an important focus of spirochetes. If the excision was not practical, inunctions of calomel ointment, 33 per cent., should be applied to the initial sore. (2) Injection (intravenous) of three or four doses of salvarsan, if possible in rapid succession, and then, notwithstanding the absence of clinical symptoms and a possible negative Wassermann reaction, the patient should be subjected to a vigorous course of mercury. For those having the advantages of large clinical and hospital facilities, and who could follow their patients for years, the treatment with salvarsan alone might suffice. But for the general practitioner, who saw his patients in a more transient way, the combination treatment should be employed. That was the patient should be given the chance of cure which salvarsan held out, but he should not be denied the benefits which followed the use of mercury. If for any reason it was incumbent upon the practitioner to choose between two remedies, in the light of the experimental stage of salvarsan at the present day, and in justice to the time-honored remedy, which had survived for four centuries, he believed mercury should be given the choice, at least for the present.

Election of Officers.—*President*, Dr. John Calhoun Otis, Poughkeepsie; *Vice-President*, Dr. Henry Lyle Winter, Cornwall; *Secretary*, Dr. Charles Ellery Denison, New York City; *Treasurer*, Dr. Nathan A. Warren, Yonkers.

Philadelphia Pediatric Society.

At a meeting held October 8 Dr. G. Victor Janvier exhibited "A Girl of Six Years with Diabetes." The patient was an emaciated, pallid child, with excessive appetite and thirst, passing large amounts of urine containing a high percentage of sugar. There was no history of traumatism and no family history of diabetes, and no other etiological factor could be elicited. Owing to the indifference of the mother and the inability to restrain the child treatment had yielded no special result. Dr. Horace J. Williams demonstrated "A Case of Abdominal Tuberculosis." The patient was a girl, between 3 and 4 years old, with a number of nodular masses in the abdomen and also yielding a positive cutaneous reaction to the tuberculin. There were occasional irregular elevations of temperature, and at one time symptoms of intestinal obstruction developed, but subsided after an enema of olive oil. Dr. W. Estell Lee exhibited "A Baby Aged Six Months Operated on for Intussusception Ten Days Ago." The little patient was at first seized with symptoms of intestinal obstruction, associated with discharge of blood and mucus from the bowel, but without the presence of an appreciable abdominal tumor. After two days the symptoms subsided suddenly, and the child appeared well. After a brief interval, however, there was a recurrence of the symptoms, and now a mass could be palpated in the right upper quadrant of the abdomen. The abdomen was opened and an intussusception of the ascending colon found. The abnormal condition was corrected, a retaining suture introduced in the cecum, and the abdominal wall closed. Recovery ensued without complication. Dr. Marina Taylor demonstrated "A Case of Alopecia Areata." The patient was a boy, about six years of age, who had fallen and injured the back of his head, lacerating the scalp. From this point as a center the hair began to fall out and the process continued until the entire scalp was denuded and even the eyebrows had fallen out. Under treatment with electricity and tonics great improvement took place, but at a later date the morbid process renewed its appearance, and under treatment with cantharides, chrysarobin, and other measures there appeared to be promise of restoration of the hair. The disorder was thought to be a trophoneurosis originating from possible injury to nerves in connection with the laceration of the scalp. No other member of the family presented a similar or analogous condition. Dr. John F. Sinclair exhibited "A Case of Enteritis with Interesting Complications." The patient was an infant, five or six weeks old, admitted to the Babies' Hospital with symptoms of ileocolitis. While under observation it developed bronchopneumonia and later cellulitis of the scalp. On quite a number of occasions the temperature fell below the 93° level, but eventually the child recovered, although at times it appeared moribund.

Pathological Society of Philadelphia.

At a stated meeting held October 10 Dr. R. M. Keilty demonstrated a specimen of "Intestinal Intussusception," illustrating an interesting factor in the development of this condition. As had already been pointed out by Dr. Allen J. Smith it was found that both the serous and mucous surfaces of the internal portion of the intussuscepting bowel were thrown into numerous small folds apparently as a resulting contraction of the interlying muscular coat. The appearance suggested that the intussuscepting portion of the bowel played an active part in drawing the intussuscepted portion within the lumen of the bowel. Dr. Kenneth M. Lynch exhibited on behalf of Dr. B. C. Hirst and himself specimens of "Congenital Cystic Kidneys Interfering with Delivery." The lower extremities of the fetus had been torn off in the efforts to effect delivery, and cesarean section was necessary to extract the remainder of the body. The obstruction to labor was found to be due to greatly enlarged cystic kidneys. Dr. Lynch exhibited also specimens of "Cystic Kidneys and Cystic Liver." These were obtained from a man, about 53 years old, who presented a mass in each flank and hypochondrium, made up of fluctuating nodules, and who died of uremia. At one time there had been hematuria, but secretion of urine went on almost to the last. There was some elevation of temperature, with chills. After death, the diagnosis of cystic kidneys was confirmed, and in addition a number of cysts were found in the liver. The gall-bladder contained calculi and the common duct was obstructed by a stone. Multiple abscesses also were present in the liver. Dr. Paul A. Lewis presented a communication entitled "The Bacteriological Examination of Selected Cases of Tuberculosis." He reported the results of a careful bacteriological study of glands removed from the neck of a girl about 20 years old. In section, in culture and in subculture only human tubercle bacilli were found. In a second case, a man formerly engaged as a butcher, and suffering with cough, presented a tubercle on one of his fingers, together with evidences of tuberculosis of the lungs. In this instance bovine tubercle bacilli were found in sections of the tissue from the finger and in cultures, while human tubercle bacilli were found in the sputum and in cultures. Drs. W. H. F. Addison and Leo Loeb presented a communication entitled "Regeneration of the Epithelium in Guinea-pig and Pigeon." They found marked differences between the normal epidemics of these two animals, that of the guinea pig containing more layers of cells, and the cells being larger, containing larger nuclei and exhibiting more mitoses. Precisely similar conditions were observed in the same animals during the process of regeneration in artificially induced wounds. That the conditions noted were inherent in the tissues of the respective animals was shown by the fact that they were present also when portions of epidermis were excised and transplanted to subcutaneous pockets in animals of the same kind. Dr. Karl F. Meyer presented a communication entitled "Hemorrhagic Septicemia of Cattle in Pennsylvania." He reported the results of a study of a number of cases of this disease observed during the past summer, in all of which the specific bipolar bacillus was found as the causative agent. The symptomatology and pathology of the disorder were described by Dr. Crawford.

State Medical Licensing Boards.

STATE BOARD EXAMINATION QUESTIONS.

Pennsylvania State Board of Medical Examiners.

December, 1911.

ANATOMY.

1. Give the external landmarks of the palmar and plantar arches.
2. What is meant by the portal circulation? Describe the same.
3. Describe the male bladder and its relations.
4. Describe the general distribution of the veins of the leg.
5. Describe the spermatic cord, giving its relations to other anatomical structures.
6. Describe the medulla oblongata.
7. Describe the wrist joint.
8. Give the anatomical relations of the axillary artery.
9. Give the external landmarks of the cerebral sinuses.
10. Give the form, position, and relations of the right kidney.

PHYSIOLOGY.

1. State the source of urea. Where is it formed, and what is the amount normally eliminated in 24 hours?
2. Discuss the factors entering into the formation of the first and second sounds of the normal heart.
3. Discuss in detail the physiological functions of the Eustachian tubes.
4. Give the physiology of digestion—(*a*) in the mouth; (*b*) in the stomach.
5. Describe the mechanism of contraction of the pupil

MATERIA MEDICA.

1. Write three prescriptions each containing a drug of the following classes: (*a*) Carminative; (*b*) Diuretic; (*c*) Stimulant.
2. Name the preparations of hyoscyamus and their doses
3. Name a drug obtained from an animal; from an insect.
4. Give the doses of the following: (*a*) Tinctura aconiti radicis; (*b*) Corrosive sublimate; (*c*) Amyl nitrite; (*d*) Silver nitrate.
5. Give the official name of nux vomica; name its preparations, and give the dose of each.

CHEMISTRY.

1. Give a method of conducting a test for the detection of free hydrochloric acid in the stomach.
2. Give a brief description of a test for blood in the feces.
3. Describe a test for arsenic in the tissues.
4. Describe Fehling's test for sugar in the urine and state how you would determine whether the reaction is that of sugar or some other reducing agent.
5. What is cholesterin? Give a test for its presence in urine.

PATHOLOGY.

1. Describe the gross and microscopic appearance of epithelioma of the lip.
2. Describe the pathology of (*a*) a furuncle; (*b*) a carbuncle.
3. Define and describe necrosis of bone.
4. Give the pathological changes which are characteristic of round ulcer of the stomach.
5. Describe the tissue changes in suppurative peritonsillitis (quinsy).

DIAGNOSIS.

1. What systemic diseases can be differentiated by the use of the ophthalmoscope?
2. Diagnose glaucoma from cataract.
3. Diagnose paralysis agitans, differentiating multiple sclerosis and senile tremor.
4. Diagnose progressive pernicious anemia.
5. Differentiate erysipelas, eczema, and tinea circinata.

PRACTICE AND THERAPEUTICS

1. What are the symptoms of aneurysm of the arch of the aorta?
2. Under what circumstances would you perform a lumbar puncture?
3. Describe the method you would follow in using salvarsan in the treatment of tertiary syphilis.
4. What are the symptoms of syphilitic iritis and how would you treat it?
5. Outline the symptoms and treatment of a case of ulcerative stomatitis.
6. What are the symptoms of acute poisoning with corrosive sublimate (bichloride of mercury) and how would you treat it?
7. Outline the management and treatment of a case of diphtheria
8. Name the indications and contraindications in the use of the preparations of opium
9. Outline the treatment of a case of cardiac dropsy.
10. Under what circumstances are the following drugs indicated as cathartics? (*a*) Oleum tiglii (croton oil), (*b*) Oleum ricini (castor oil), (*c*) Hydrargyri chloridum mite (calomel).

ANSWERS TO STATE BOARD EXAMINATION QUESTIONS.

PENNSYLVANIA STATE BOARD OF MEDICAL EXAMINERS

December, 1911.

ANATOMY.

1. *Palmar arches.* The line of the *superficial palmar arch* crosses the palm in a line with the thumb separated widely from the fingers. The *deep palmar arch* lies in a line half an inch nearer to the wrist than the superficial.

Plantar arteries. The course of the *external plantar artery* corresponds with a line drawn from the hollow behind the inner ankle obliquely across the sole nearly to the base of the fifth metatarsal bone; from thence the artery turns transversely across the foot, lying deeply near the bases of the metatarsal bones, till it inosculates with the dorsal artery of the foot in the first interosseous space. The course of the *internal plantar* corresponds with a line drawn from the inner side of the os calcis to the middle of the great toe. (From Holden's *Landmarks.*)

2. By the *portal circulation* is meant the capillary circulation of venous blood in the liver, between the portal and hepatic veins.

Portal circulation: "The hepatic artery and the portal vein convey blood to the liver. The artery carries arterial blood, and the vein food-laden venous blood from the walls of the alimentary canal, and from the spleen and pancreas. Both vessels enter the liver at the transverse fissure, and they ramify in its interior, breaking up into small terminal branches which run between the lobules and send fine capillary branches into their substance; from these latter branches the blood passes into the capillary tributaries of the intralobular veins, thence to the sublobular veins, and from the sublobular veins to the hepatic veins, which terminate on the posterior surface of the liver in the inferior vena cava." (Bain's *Medical Practice.*)

3. The *male bladder* is a musculo-membranous pouch, situated in the pelvis, behind the pubes and in front of the rectum. It has a superior surface, antero-inferior surface, two lateral surfaces, a base or fundus, and a summit or apex. It is retained in its place by the two anterior ligaments, two lateral ligaments, and the urachus; there are also five false ligaments formed by folds of the peritoneum. Internally, on the floor, is the trigone, between the openings of the two ureters and the urethra. The anterior part of the bladder is uncovered by peritoneum, and is in relation with the triangular ligament, the symphysis pubis, and the pubo-prostatic ligament. Above it is covered with peritoneum and is in relation with the rectum and small intestines. The base is in relation with the rectovesical pouch, vasa deferentia, and seminal vesicles, all of which separate it from the rectum. It is supplied by the superior, middle, and inferior vesical arteries; and the pelvic plexus of the sympathetic, and the third and fourth sacral nerves.

4. The veins of the leg comprise two sets: the superficial and deep. The superficial set is composed of the internal or long saphenous, and the external or short saphenous. The deep set contains the posterior tibial and the anterior tibial.

The *saphenous veins* are formed from the dorsal venous arch. The *internal saphenous* begins at the inner end of this arch, on the inner side of the foot; it passes upward in front of the internal malleolus, then upward and backward with the internal saphenous nerve, behind the internal condyle of the femur, then upward and outward to the inner side of front of thigh, through the saphenous opening, to empty into the femoral vein. The *external saphenous* begins at the outer end of the arch, on the outer side of the foot; it passes upward behind the external malleolus, up along the outer side of the tendo Achillis, with external saphenous nerve, to the popliteal space, where it enters the popliteal vein. The deep veins accompany the arteries; the posterior tibials receive the peroneal veins, and unite with the anterior tibials to form the popliteal.

5. The *spermatic cord* consists of the vas deferens with artery to the vas, spermatic artery, and pampiniform plexus of veins forming spermatic vein above, sympathetic nerves, the cremasteric artery, the genital branch of the genitocrural nerve, lymphatics, together with some areolar tissue; it extends from the internal abdominal ring to the testis, passing in its course along the inguinal canal, from which it emerges by the external abdominal ring, and thence in front of the pubes to the scrotum. The vas deferens is placed at the back of the cord. Its relations are those of the inguinal canal in which it lies. *Behind* Peritoneum, transversalis fascia, conjoined tendon, and triangular fascia. *In front:* Internal oblique, and aponeurosis of external oblique. *Below:* Poupart's ligament and transversalis fascia. *Above:* Internal oblique and transversalis.

6. The *medulla oblongata* is the lowest part of the encephalon, and is continuous below with the spinal cord. It extends from the lower margin of the pons to the lower margin of the foramen magnum. It lies in the basilar groove of the occipital bone; its dorsal surface is between the cerebellar hemispheres. It forms the lower part of the floor of the fourth ventricle. It is about one inch long, half inch wide, and half inch thick. It has anterior and

posterior median fissures, which are continuous with those of the spinal cord.

7. The *wrist-joint* is a condyloid joint, formed by the lower end of the radius and the triangular fibro-cartilage above; and by the scaphoid, semilunar, and cuneiform bones below. It is united by the following ligaments: External lateral, internal lateral, anterior, and posterior; it is lined by a synovial membrane. The joint is capable of flexion, extension, abduction, adduction, and circumduction.

8. Relations of Axillary Artery. *In front:* Skin; fascia; pectoralis major and minor; costo-coracoid membrane; external anterior thoracic, inner head of median and internal cutaneous nerves; cephalic and acromiothoracic veins. *Behind:* First intercostal, serratus magnus, subscapularis, and tendons of latissimus dorsi and teres major muscles; posterior thoracic, internal anterior thoracic, musculospiral, and circumflex nerves, also posterior cord of brachial plexus. *Outer side:* Coracobrachialis; brachial plexus, and median and musculocutaneous nerves. *Inner side:* Axillary vein; ulnar, lesser internal cutaneous, and internal anterior thoracic nerves, and inner cord of brachial plexus.

9. The *superior longitudinal sinus* is marked by a straight line drawn over the top of the scalp from the root of the nose to the external occipital protuberance. The *lateral sinuses*, by a line drawn from the external occipital protuberance to the base of the mastoid process, and thence to the tip of the mastoid process.

10. The *form* is that of a flattened bean. *Position:* It is situated in the back part of the abdomen, near the spinal column, behind the peritoneum, the top being on a level with the twelfth rib, and the lower end on a level with the third lumbar vertebra. *Relations of right kidney: In front*, right lobe of liver, duodenum, hepatic flexure of colon. *Behind*, diaphragm, quadratus lumborum, psoas, last dorsal and iliohypogastric and ilioinguinal nerves, pleura, last intercostal space, and twelfth rib.

PHYSIOLOGY.

1. *Urea* is derived from proteins in the body; it is formed in the liver. About 500 grains is normally eliminated in 24 hours.

2. There are two normal heart sounds which follow in quick succession, and are succeeded by a pause. The first, or systolic, sound is dull and somewhat prolonged; the second, or diastolic, sound is sharper and shorter. The *causes* producing the *first* sound of the heart are not definitely ascertained; the following are supposed to be causatory factors: (1) The vibration and closure of the auriculoventricular valves, (2) the muscular sound produced by the contraction of the ventricles, and (3) the cardiac impulse against the chest wall. The *second* sound is caused by the vibration due to the closure of the semilunar valves.

3. *The functions of the Eustachian tubes:* (1) To maintain equality of atmospheric pressure on each side of the tympanic membrane; (2) to prevent echo, by allowing sound waves to pass from the middle ear; (3) to act as a drainage canal for the middle ear.

4. Digestion. (1) *In the mouth* the food is crushed, mixed with saliva, and reduced to a pulp; a certain amount of starch converted into maltose and rendered slightly alkaline. Fats and proteids are unaltered. (2) *In the stomach*, the contents are rendered acid, conversion of starch into sugar ceases, connective tissue of fats is dissolved and fats are set free. Proteids are dissolved and peptones formed. The albuminous foods are dissolved for the most part, and a grumous mixture of peptones, liquid fats, and starches is formed, which is termed chyme, and is gradually passed through the pylorus into the intestine.

5. "In the changes which take place in the iris, two sets of nerves are involved: (1) Those of the third nerve or oculomotor, and (2) those of sympathetic origin. The third nerve supplies the circular fibers, and consequently section of this nerve paralyzes these fibers, and dilatation of the pupil occurs. When the third nerve is stimulated, the circular fibers contract, causing a diminution in the size of the pupil. The sympathetic supplies the radiating fibers and its section paralyzes those fibers, causing contraction of the pupil, while its stimulation produces dilatation. When light falls upon the retina this portion of the eye is stimulated, and the impression is carried by the optic nerve to the brain, and there motor impulses are generated which are transmitted through the third nerve to the sphincter of the iris, causing it to contract; this is, therefore, a reflex act" (Raymond's *Physiology.*)

MATERIA MEDICA.

1. *(a) Carminative.*

℞. Chloralis, gr. xvj.
Potassii bromidi, gr. xxxij.
Aquæ menthæ piperitæ, ℥ij. M.

Sig: One teaspoonful in warm water every four hours.

(b) Diuretic.

℞. Potassii acetatis.
Potassii bicarbonatis.
Potassii citratis, *aa*, ℥ij.
Aquæ destillatæ, q.s. ad ℥viij. M.

Sig: One tablespoonful in water after each meal.

(c) Stimulant.

℞. Ammonii carbonatis, ℥ijss.
Syrupi acaciæ, ℥jss.
Aqua destillatæ, q.s. ad ℥iij. M.

Sig: One teaspoonful every two hours.

2. Hyoscyamus, 4 grains; Extractum hyoscyami, 1 grain; Fluidextractum hyoscyami, 3 minims; Tinctura hyoscyami, 15 minims; Hyoscinæ hydrobromidum, 1/128 grain; Hyoscyaminæ hydrobromidum, 1/128 grain; Hyoscyaminæ sulphas, 1/128 grain.

3. *Drug obtained from an animal:* Pepsin; *from an insect:* Cantharides.

4. Tinctura aconiti, 10 minims; corrosive sublimate, 1/20 grain; amyl nitrite, 3 minims; silver nitrate, 1/5 grain.

5. Nux vomica. *Official name:* Nux vomica.. The *official preparations and doses* are: Nux vomica, one grain; extract of nux vomica, one-quarter of a grain; fluid extract of nux vomica, one minim; tincture of nux vomica, ten minims; strychnine, one-sixty-fourth of a grain; strychnine sulphate, one sixty-fourth of a grain; strychnine nitrate, one sixty-fourth of a grain.

CHEMISTRY.

1. *Test for free hydrochloric acid in the stomach:* Mix a few drops of the filtered gastric juice and Boas' reagent in a porcelain dish, and slowly evaporate to dryness. A rose red color, which fades on cooling, indicates the presence of free hydrochloric acid. (Boas' reagent consists of 5 parts of sublimed resorcinol and 3 of cane sugar in 100 of alcohol.)

2. *Test for blood in the feces:* "Mix fresh each time the following solution: Benzidine, amount that will stay on small end of penknife. Glacial acetic acid, 2 c.c.; hydrogen peroxide, 1 c.c. *If solid*, mix material to be examined with small amount of water. Put drop on slide and place cover slip over it. Allow few drops benzidine solution to flow around edge. Blue or green color will develop at line of contact in presence of blood. *For liquid.* If opaque, proceed as above; if translucent, place a few c.c. in a conical glass and allow benzidine solution to flow slowly down edge. A blue ring will develop in presence of blood." (Greene's *Medical Diagnosis.*)

3. *Test of arsenic:* Reinsch's test is as follows: To the suspected fluid add a little pure HCl; suspend in the fluid a small strip of bright copper foil, and boil. If a deposit forms on the copper, remove the copper, wash it with pure water, dry on filter paper, but be careful not to rub off the deposit. Coil up the copper, and put it into a clean dry glass tube, open at both ends, and apply heat at the part where the copper is. If arsenic is present there will appear in the cold part of the tube a mirror, which will be found on microscopical examination to consist of octahedral crystals of arsenic trioxide.

4. *Fehling's test:* Place in a test-tube a few c.c. of the liquid prepared as stated below, and boil; no reddish tinge should be observable, even after five minutes' repose. Add the liquid under examination gradually, and boil after each addition. In the presence of sugar a yellow or red precipitate is formed. In the presence of *traces* of glucose only a small amount of precipitate is produced, which adheres to the glass, and is best seen when the blue liquid is poured out.

[The reagent must be kept in two solutions, which are to be mixed immediately before use. Solution I consists of 34.653 gms. of crystallized $CuSO_4$, dissolved in water to 500 c.c; and Solution II of 130 gms. of Rochelle salt dissolved to 500 c.c. in NaHO solution of sp. gr. 1.12. When required for use equal volumes of the two solutions are mixed, and the mixture diluted with four volumes of water.]

If the test with Fehling's solution is positive another sample should be examined by the *fermentation test*, which is absolutely reliable, glucose being practically the only fermentable substance ever found in urine.

5. *Cholesterin* is an unsaturated monatomic alcohol, with the empirical formula $C_{27}H_{45}OH$, but of unknown con-

stitution. It is found chiefly in bile, but also in blood, nerve tissue, brain. The crystals may be found on microscopical examination; heat these on a slide with a drop of sulphuric acid and water, and the edges of the crystals become red.

PATHOLOGY.

1. An *epithelioma of the lip* is of the squamous variety. It is a nodular, wart-like elevation, tending to become ulcerated on the surface. "Histologically there are seen branching columns of epithelial cells extending downward from the papillæ of the skin into the deeper structures. These consist of large translucent squamous cells which show a tendency to arrange themselves in certain places concentrically to form epithelial *perles*. The latter frequently undergo a horny transformation and sometimes even calcareous change. Metastasis is frequently seen in the neighboring lymphatic glands." (Stengel's *Pathology.*)

2. "*Furuncles and carbuncles* result from infection with the *Staphylococcus aureus*, which enters the orifices of the ducts of the skin under the influence of friction and pressure. A *Furuncle* results when the infection is located in a hair follicle or sebaceous gland. A hard, painful, conical swelling develops, to which, so long as the skin retains its normal appearance, the term 'blind boil' is applied. Usually, however, the skin becomes red, and after a time breaks, giving exit to a drop or two of thick pus. After an interval of from six to ten days a soft white slough is discharged; this is known as the 'core,' and consists of the necrosed hair follicle or sebaceous gland. After the separation of the core the boil heals rapidly, leaving a small depressed scar. *Carbuncle* may be looked upon as an aggregation of boils, and is characterized by a densely hard base and a brownish-red discoloration of the skin. A carbuncle is usually about the size of a dollar-piece, but it may continue to enlarge until it attains the size of a dinner plate. As time goes on several points of suppuration appear, and when these burst there are formed a number of openings in the skin, giving it a cribriform appearance; these openings exude pus. The different openings ultimately fuse and a large adherent, grayish-white slough is exposed. The separation of this slough is a tedious process and the patient may become exhausted by pain, discharge, and septic absorption. When the slough is finally thrown off a deep gap is left, which takes a long time to heal." (Thomson and Miles' *Surgery.*)

3. "*Necrosis* refers to the destruction of large portions of bone, as a result of interference with the blood-supply or from the extension of disease from the periosteum or neighboring bone. The dead piece remains as a sequestrum; part having been absorbed, the rest remains in a cavity surrounded by granulation tissue and pus. It acts as a foreign body, and constantly keeps up a suppurative reaction in the adjacent structures. A fistulous opening or cloaca, communicating with the exterior, generally forms, and the pus continues to discharge through it. This may continue for years if the sequestrum is so large that it cannot pass through the opening. When it does escape or become absorbed, healing takes place." (McConnell's *Pathology.*)

4. *Round ulcer* "consists in a rapid localized destruction of the mucosa and submucosa, or sometimes of all the coats, with consequent perforation. It is single or multiple and has its most frequent seat on the posterior wall or on the lesser curvature near the pyloric end. The edges of the ulcer, which is nearly circular, are well defined as though punched out, and funnel-shaped, the wide orifice being at the mucosa. The size of the ulcer varies from 0.5 to 6 or 7 cm., but if perforation occurs the hole is generally quite small, not larger than a goose-quill. A patch of fibrinous lymph usually forms on the serous surface opposite the ulcer, which is thus often attached to neighboring structures, and so perforation is prevented, or if this event happen extravasation is limited. The ulcer in course of time heals, becoming permanently attached to a neighboring viscus, usually the liver, and its base covered with cicatricial tissue, but it is questionable whether the epithelium is regenerated over the area." (Hewlett's *Pathology.*)

5. There is a tonsillitis, in which the "tonsils are swollen and hyperemic, and there is abundant secretion of mucopus. The inflammation mainly affects the crypts, which become greatly swollen and filled with foul purulent material. From here the inflammation may extend into the substance of the organ leading to tonsillar abscess, and, as an after-result of the follicular disturbance, the contents of the crypts may become inspissated, cheesy, and intensely foul smelling; still later they may become the seat of calcareous deposits, forming concrements. Where there is abscess formation the process may infiltrate through the deeper tissue extending into the cellular tissue around about, with much inflammatory edema, setting up the condition known as quinsy, or it may be peritonsillar abscess." (Adami and McCrae's *Pathology.*)

DIAGNOSIS.

1. The *ophthalmoscope* may be of aid in diagnosing: Brain tumors, abscess of the brain, anemia of the brain, cerebral aneurysm, tabes dorsalis, multiple sclerosis, exophthalmic goiter, nephritis, diabetes, hypertrophy of the left ventricle of the heart, fatty degeneration of the heart, syphilis, alcoholic or tobacco poisoning.

2. *Glaucoma* is a diseased condition of the eye, produced by increased intraocular pressure and resulting in excavation and atrophy of the optic disc, and blindness. It is due to increase of the contents of the eye, hypersecretion, retention, old age, gout, rheumatism, nephritis. *Symptoms:* Visual disturbances, increased ocular tension, hazy and anesthetic cornea, sluggish and dilated pupil, shallow anterior chamber, ciliary neuralgia, cupping of optic disc, blindness.

Cataract is an opacity of the lens on its capsule, and is characterized by diminished acuteness of vision, the patient "sees spots" which occupy a fixed position in the field, diplopia, myopia; there are no inflammatory symptoms.

3. *Paralysis agitans* is diagnosed by the muscular rigidity, the slowness of movement, the characteristic festinating gait, expressionless face, and coarse vibratory tremor. *Multiple sclerosis* shows increased reflexes and intention tremor. *Senile tremor* usually attacks the head first, and the rigidity and facies of paralysis agitans are absent.

4. *Progressive pernicious anemia* is diagnosed by the great reduction in the number of the red corpuscles, the relatively high hemoglobin percentage, diminished leucocytes; every abnormality of the red cells may be present, such as poikilocytes, macrocytes, microcytes, and nucleated red cells (normoblasts and megaloblasts).

5.

ERYSIPELAS.	ECZEMA ERYTHEMATOSUM.
1. Sudden onset with chill and marked constitutional symptoms.	1. No constitutional symptoms.
2. Eruptions sharply marginated.	2. Fades into surrounding skin.
3. Glazed, shining surface; great edema.	3. Dull, scaly surface; slight infiltration.
4. Color, violaceous.	4. Color, bright or dull red.
5. Burning pain.	5. Itching more marked.
6. Occurrence of discrete vesicles or blebs.	6. Vesicles occur in patches if at all.
7. Progressive peripheral spreading.	7. Spreading irregular.
8. Runs an acute course.	8. Runs a chronic course.
9. Contagious.	9. Not contagious.

TINEA CIRCINATA.	ECZEMA SQUAMOSUM.
1. Contagious.	1. Noncontagious.
2. Patches circular.	2. Patches irregular.
3. Patches marginated.	3. Patches ill defined.
4. Patches ring-shaped; clear in center.	4. Patches not clear in center.
5. Eruption proceeds with uniform peripheral extension and central healing.	5. Irregular extension and healing.
6. Trichophyton fungus in scales.	6. Scales free from fungus.

(From *Cyclopedia of Medicine and Surgery.*)

PRACTICE AND THERAPEUTICS.

1. *Symptoms of aneurysm of the arch of the aorta.* "The onset is usually gradual, with evidences of arteriosclerosis and failing health. Pain, which may be paroxysmal or continuous, is a constant symptom. Dyspnea is also common and may be constant with acute exacerbations, or may be remittent. Occasionally dysphagia occurs. A slight cough from pressure on the recurrent laryngeal nerve, with more or less alterations in the voice, may be present. The pupils are dilated or contracted, or are irregular in some cases, due to pressure on the sympathetic nerve. There are disorders of the circulation, a gradual loss of flesh, and a careworn expression of the face." (Hughes' *Practice of Medicine.*)

2. *Lumbar puncture* may be performed for anesthesia, for diagnosis, and for treatment. It is used to diminish intracranial pressure as in tuberculous meningitis; in

uremic convulsions; to differentiate between epidemic cerebrospinal meningitis and anterior poliomyelitis; to administer antitetanic or antimeningococcic serum.

3. The method of giving salvarsan intravenously is thus described by Hirsch: "Two graduated glass containers of 250 c.c. capacity are used. Into one is poured 150 to 200 c.c. of sterile salvarsan solution. The other is filled with a like volume of sterile saline solution (made with sterile distilled water and chemically pure sodium chloride). The saline solution is allowed to flow out of the needle so as to expel all air from the tube. The stop-cock is now reversed, allowing the salvarsan solution to flow out of the needle, thereby expelling all air from its tubing. The stop-cock is now reversed to its former position until the saline solution is running in a slow, even stream from the needle. The desired site of puncture is selected on the arm or at the elbow, and the needle is gently pushed or thrust through the skin into the vein. Meanwhile the saline solution is continuously running from it. The needle is held at about an angle of 10 to 15 degrees to the skin surface, depending on the prominence and caliber of the vein. Care must be exercised not to push the needle through both walls of the vein. This can be avoided by not introducing too long a surface of the needle into the tissues. The patient's arm having been carefully cleansed, a ligature in the form of an ordinary soft rubber catheter or tubing is tied around the middle of the arm, above the selected site of puncture, and the patient is requested to tighten the fist so as to make the superficial veins more prominent. Some prefer to expose the vein in all cases. As soon as the needle has entered the vein the rubber ligature is released by an assistant, the stop-cock of the needle is reversed, and the salvarsan solution flows through the needle into the vein. Hence there is no danger of any salvarsan solution getting into the subcutaneous tissues. The intravenous injection must be given slowly, not less than ten minutes being spent in the process; and the solution must be quite warm when poured into the container so as to allow for its cooling when flowing into the apparatus; when it enters the vein the solution should be about the temperature of the blood. An ideal intravenous injection is painless."

4. Syphilitic iritis. The *symptoms* are intense pain in the forehead and face, lacrymation, photophobia, dimness of vision, pericorneal injection, loss of luster of the iris, and hazy, distorted, and immobile pupil. The course of the disease is from two to four weeks. Synechias often result.

Treatment: Atropine, dionine, the application of leeches to the temples, hot fomentations, absolute rest in bed, protection from the light, light diet, purgatives, abstinence from alcohol, avoidance of all use of the eyes for near work, constitutional treatment for the syphilis, and paracentesis, and iridectomy.

5. Ulcerative stomatitis. The *symptoms* include slight constitutional disturbances, reddened and swollen gums, pain and salivation, acrid, irritating, and offensive saliva, foul breath, hemorrhages from the mucous membrane on pressure, etc. The *treatment* should first be directed toward the diet and hygiene of the patient. Salicylate of soda, borax, or hydrogen dioxide may be used in mouth washes. Potassium chlorate should be administered internally (gr. 10-20 in 24 hours to child 1 year of age) and also should be used locally. (Pocket *Cyclopedia.*)

6. *Symptoms* of poisoning by corrosive sublimate are: A burning pain in the mouth, pharynx, and stomach; the mouth and tongue are white; the vomitus is white, with shreds of mucous membrane, and tinged with blood; there may be bloody stools, also salivation. *Treatment:* The antidote is white of egg, but too much must not be given at one time; this should be followed by an emetic.

7. In *diphtheria* the patient must be isolated for at least three weeks after the throat is free from bacteria or till discharge from mouth or throat has ceased. At the earliest period antitoxin must be used; dosage is about 2,000 to 8,000 units; strict antiseptic precautions must be observed. The throat and nasal fossæ may be irrigated with antiseptic solutions. Symptoms are treated as they arise; tonics are needed.

8. Opium. *Therapeutic uses:* As an anodyne, a hemostatic, in inflammations, as an expectorant, in diarrhea, in manias and diabetes, as an antispasmodic, in insomnia, as a diaphoretic, in many respiratory affections, and to prevent or lessen shock. *Contraindications:* In young children, also in excessive bronchial secretion in old people, in cerebral congestion, and in the second stage of lobar pneumonia.

9. *Cardiac dropsy* is treated by purgatives, stimulants, diuretics, diaphoretics, puncture or incision of the skin and connective tissues. Infusion of digitalis and caffeine, calomel, and squill are of service.

10. *Oleum tiglii* is used when prompt evacuation of the bowel is required; in intestinal obstruction from accumulated feces, and lead colic, and in apoplexy. *Oleum ricini* is indicated whenever a laxative is required; in dyspepsia, in constipation, for children, at the beginning of almost any disease. *Hydrargyri chloridum mite* is used in diarrhea, bilious attacks, hepatic congestion or cirrhosis.

(*To be concluded.*)

Books Received.

The Medical Record *is pleased to receive all new publications which may be sent to it, and an acknowledgment will promptly be made of their receipt under this heading, but it must be with the distinct understanding that it is under no obligation to notice or review any publication received by it which in the judgment of its editor will not be of interest to its readers.*

Pathology of the Eye. By P. H. Adams, M.A., M.B., D.O. (Oxon.), F.R.C.S. 194 pages, with 43 illustrations; flexible cloth; price $1.50. Oxford University Press, Publishers, New York.

X-Ray Diagnosis and Treatment. By W. J. S. Bythell, B.A. (Cantab.), M.D. (Vict.), and A. E. Barclay, M.D. (Cantab.), M.R.C.S., L.R.C.P. 147 pages, with 118 illustrations; cloth; price $5.50. Oxford University Press, Publishers, New York.

The Pituitary Body and Its Disorders. By Harvey Cushing, M.D. 341 pages, with 319 illustrations; cloth; price $4.00. J. B. Lippincott Company, Publishers, Philadelphia, Pa.

Ueber Sauglingsernaehrung. By Dr. Ernst Schloss. 231 pages; paper; price 6 M. S. Karger, Publisher, Berlin.

The Pituitary Body and Its Disorders. By Harvey Cushing, M.D. 341 pages, with 319 illustrations. J. B. Lippincott Company, Publishers, Philadelphia.

Fresh Air and How to Use It. By Thomas Spees Carrington, M.D. 250 pages, with 150 illustrations; cloth; price $1.00. Published by the National Association for the Study and Prevention of Tuberculosis.

Medical, Surgical, and Obstetrical Report of the Emerson Hospital. 91 pages; paper. Published by the Emerson Hospital, Forest Hills, Boston.

Leitfaden der Praktischen Kriegschirurgie. By DeW. von Oettingen. 377 pages; price 9.50 M.; paper. Theodor Steinkopff, Publisher, Dresden, Germany.

Pharmacology and Therapeutics. By Horio C. Wood, Jr., M.D., 420 pages; cloth; price $4.00. J. B. Lippincott Company, Philadelphia, Pa.

Practical Anatomy. By John C. Heisler, M.D. 789 pages, 366 illustrations; cloth; price $4.50. J. B. Lippincott Company, Publishers, Philadelphia, Pa.

The Healthy Baby. By Roger H. Dennett, M.D. 235 pages; cloth; price $1.00 net. The Macmillan Company, Publishers, New York.

The Practical Medicine Series—Vol. III. The Eye, Ear, Nose, and Throat. Edited by Casey A. Wood, C.M., M.D., C.C.L., Albert H. Andrews, M.D., and Gustavus P. Head, M.D. 358 pages; illustrated; cloth; price $1.25. The Year Book Publishers, Chicago, Ill., Publishers.

Studies in Cancer and Allied Subjects.—Vol. II. Pathology. Conducted under the George Crocker Special Research Fund at Columbia University. 267 pages; illustrated; cloth. Columbia University Press, Publishers, New York.

Tuberculin Treatment. By Clive Riviere, M.D., F.R.C.P., and Egbert Morland, M.B., B.Sc., M.D. 277 pages; paper; price, $2.00. Oxford University Press, Publishers, New York.

Gonococcal Infections. By Major C. E. Pollock and Major L. W. Harrison. 222 pages; paper; price $2.00. Oxford University Press, Publishers, New York.

Kidney Diseases. By W. P. Herringham, M.D., F.R.C.P., and Herbert Williamson, M.D., F.R.C.P. 378 pages; illustrated; cloth; price $5.50. Oxford University Press, Publishers, New York.

Infant Mortality and Milk Stations. Edited by Philip Van Ingen and Paul Emmons Taylor. 176 pages; illustrated; paper; price $1.00. The New York Milk Committee, Publishers.

Bibliographische Monatsschrift. Internationale Zeitschraft für die Gesammte Literatur der Medizin. Vol. I. By H. Albert Hellmers. 108 pages; paper; price for 12 numbers 36 M. Rettig & Kollmorgen, Publishers, Hamburg.

Miscellany.

Cooperation Between Medical Men and Midwives.—In spite of the opinions of those idealists who believe that only skilled obstetricians should be permitted to manage a case of labor, there will be, at any rate for a long time to come, a demand for the trained and intelligent midwife. The masterly address of Dr. Jacobi at the last meeting of the American Medical Association brought out the important fact that the midwives serve faithfully a large proportion of child-bearing women. G. Ernest Herman, of London, in his book on "Difficult Labor," even advocates the cooperation between medical men and midwivese. He says: "Many women cannot afford the fee which a busy doctor requires for conducting the birth of a child, and they therefore engage midwives. The usual relation between midwife and doctor has been that the case was left entirely to the midwife until the patient asked for help of the doctor; and sometimes the midwife did not find out that there was anything wrong until the patient's state had become dangerous. Then sometimes the doctor arrived too late to save the patient. This was not using either midwife or doctor to the best advantage. The better course would be that the patient at the first indication of labor or on the day on which delivery is expected, should send for or go to the doctor. He should then examine the patient, ascertain the position of the child, measure the pelvis (unless previous deliveries have proved it to be normal), estimate the size of the child in relation to the pelvis, and see that the vagina and vulva are healthy. If everything is normal he can then leave the case to the midwife. She can watch the progress of labor, tie the cord, and press out the placenta, as well as the doctor. If there are any special features in the case he can instruct the midwife about them. If the case is so abnormal that operative delivery is plainly called for, the early discovery of the need for operation will enable it to be done in the best possible circumstances." The following narrative indicates the important place which the midwife filled at a time when it was considered almost a crime for a male physician to act the part of accoucheur.

An Old Midwife's Tale.—W. H. Allport presents an interesting account of Louise Bourgeois, the celebrated midwife at the court of Henry IV and Marie de Medici. The daughter of a middle-class family, the *sage femme jurée*, was born in the Faubourg St. Germaine, near Paris, in 1563. She married a barber surgeon named Martin Boursier, who was intimately associated with Ambrose Paré. Through the influence of the latter and because of her many personal and professional excellencies, Louise, at the age of thirty-six, was called to Fontainebleau to attend Marie de Medici. How she presided at the birth of a dauphin—the first for eighty years and the future King Louis XIII, who first saw the light at Fontainebleau, September 27, 1601, she describes in her own naive and archaic style:

"The night of the 26th of September, at midnight, the king sent for me to come to the queen, who was feeling ill. I was sleeping in the queen's dressing-room, where were also the ladies-in-waiting. These ladies, often finding me asleep, had previously played jokes on me by giving false alarms, and in such a manner that I thought this was one of the same. I heard myself called by some one named Pierrot, who did not give me time to fasten my clothes—he hurried me so! Entering the bed-chamber of the queen, the king asked me—'Is this the midwife?' 'Somebody said to him—'Yes'—and he said to me—'Come, come, midwife, my wife is ill—look and see if it is really her confinement—she is in great pain.' Having examined, I assured him that such was the case. At the same moment the king said to the queen—'My dear, do you remember what I have said to you a good many times about the necessity of having the princes of the blood at your accouchement (to prevent substitution)—I beg of you to permit it—it is for the future greatness of you and your child'—to which the queen replied that she had always resolved to do whatever would please him. 'I know well, my dear, that you wish to do all that I desire, but I know your nature, which is timid and embarrassed, so that I fear if you do not make a great resolution, seeing them may prevent your confinement. That is why I beg of you not to be shocked, because it is according to the custom which always takes place at the first confinement of queens.' The pains pressed the queen, and at each pain the king embraced her, and asked me if it was time to send for the princes, reiterating that I must warn him in time, as it was an affair of the greatest importance that they should be there. I told him I would not fail to do so when it was time.

"About an hour after midnight, the king, overcome with impatience, seeing the queen suffer, and thinking that she would give birth to the child and the princes would not have time to get there, sent to seek for them. They were Messieurs the princes de Conti, de Soissons, and de Montpensier. The king said, waiting for them: 'If ever any one has never seen three princes in deep trouble, one will soon see them now. These are three princes very full of pity and good nature, who, seeing my wife in labor, would give most of their possessions to be far away from here.' All three came before the two hours, and were there about half an hour. The king, having learned from me that the delivery was not very near, told them to hold themselves in readiness until he called. M. de la Riviere, first physician of the king; M. de Laurens, first of the queen; M. Herouard, also physician of the king, with M. Guillemeau, surgeon of the king, were called to see the queen, and also retired nearby. In the meanwhile the great bedroom of Fontainebleau, which is near the king's bedroom, was prepared for the confinement of the queen. In it there was a great bed of crimson red velvet, ornamented with gold, near the bed of accouchement. There were also two pavilions, large and small, attached to the floor. The large pavilion was stretched and fastened like a tent by its four corners with cords; it was of beautiful Holland linen, about twenty ells square. In the middle of the large tent there was a little one of the same linen, and under this was put the bed of accouchement. Here the queen was put to bed on coming out of her bedchamber. The ladies whom the king had desired especially called to the accouchement of the queen were summoned. There were carried under the pavilion a chair, some folding seats, and some stools for the king, madame his sister, and Madame de Nemours, to sit in. The obstetrical chair was also brought in; it was covered with crimson velvet. About 4 o'clock in the morning a great colic mingling itself among the travail of the queen gave

her terrible pain without helping her along. From time to time the king made one of the doctors come to see the queen and speak to me so that I might know what was taking place. The colic made the queen suffer more than the travail, and even kept her from it. The doctors asked me, 'If this were a woman and you were alone with the case what would you do?' I proposed to them some remedies, which they ordered at once from the apothecary, who proffered to them others in the Italian style, which he said in similar cases had done much good. There were also two old and wise Italian maiden ladies with the queen, who had assisted at the birth of many children and had attended many accouchements in their own country. The queen, to show her friendship for them, had wanted them at her confinement to serve her as lady's maids. The relics of Madame Sainte Marguerite were on the table in the bedroom, and two holy men from Saint-Germain-des-Prez prayed God without ceasing. The king said he did not wish any one to give any advice excepting the doctors, and that we should agree together, so that I can say I never saw anywhere such tranquillity and peaceful spirit because of the good order which the king brought there, and the assurances which the queen gave him.

"To combat the insupportable colic, it was necessary to use a great many remedies. The queen's sickness lasted twenty-two and one-fourth hours, and her courage was an admirable thing. She discerned clearly the first pains as well as those last ones when the terrible colic came. During all the time she was in travail the king never left her once, excepting when he went out for something to eat; then he sent constantly for news from her, and madame, his sister, did the same. When the remedies had driven away the colic and the queen's real labor commenced I saw that she restrained her cries. I begged of her not to suppress them for fear her throat would swell. The king said to her: 'My dear, do what your midwife tells you—cry, that your throat may not swell.' She desired to be confined in her chair, and being seated, the princes who were beneath the large pavilion sat face to face with her. I was on a little seat before the queen. I placed M. le Dauphin in his linen wrappings, so that no one knew, excepting myself, what sex the child was. I wrapped him up well—this I understood was what I had to do. The king came near to me. I looked closely at the face of the child and saw he looked very feeble because of the great pain which he had endured. I asked for some wine from M. de Lozeray, one of the first valets de chambre of the king. He brought a bottle—I asked him for a teaspoon—the king took the bottle, which he held. I said to him, 'Sire, if it was any other child I would put the wine in my mouth and give it to him that way, because of his great feebleness.' The king put the bottle against my mouth and said 'do to it as you would to another.' I filled my mouth with the wine and thus gave it to the child. At that instant he was conscious and tasted the wine which I had given him.

"The king then went over to impress the princes with the weakness of the queen, then opened the bedrooom door and invited in all the people that were out in the antechamber and the grand cabinet. I believe there were 200 persons, so that one could not move through the room to carry the queen to her bed. I was infinitely angry at seeing this. I said there was no reason for everyone coming in here; that the queen was not yet through with her confinement. The king heard me and tapped me on the shoulder and said, 'Keep still, keep still, midwife—don't be angry—this child belongs to the whole world, and everyone must rejoice over him.' It was half past 10 o'clock at night, Thursday, the 27th of September, 1601, day of Saint Cosme and Saint Damien, nine months and fourteen days after the marriage of the queen.

"The valets de la chambre of the king and queen were called. They carried the obstetrical chair near the bed and the queen was then moved. Something was administered to her for her weakness, and having given her the service which was necessary, I took charge of M. le Dauphin, whom Madame de Montglas gave back to me. M. Herouard commenced then to wait on the child. He bade me wash it entirely in wine and water, and to look it all over before I bandaged it. The king brought up the princes and several noblemen to see it; all those belonging to the household of the king and queen saw the child, and then made places for others. Everyone was so glad they could scarcely express themselves. They all embraced each other without regard to who they were; they were so transported with joy they did not know what they did. I was told that through the entire town all night there were bonfires and the noise of trumpets and drums. Casks of wine were broken open, to be drunk to the health of the king and queen and the dauphin, and the messengers were sent out post-haste to all foreign countries to carry the news, and through all the provinces and towns of France.

"The twenty-ninth of this same month I went to see M. le Dauphin; the page, Biri, opened the door for me. I saw the room full: the king, madame his sister, the princes and the princesses were there, because they were just going to baptize M. le Dauphin. I was about to retire, but the king saw me and said, 'Come in, come in, you need never stay out.' He then said to Madame and the princes: 'I have seen many persons, but I never have seen any so resolute, be it man or woman, in war or elsewhere, as is this woman here; she held my son in her lap and looked at the whole world with those eyes as cold as if she held nothing at all—instead of a dauphin, and it has been eighty years since one was born in France!' I replied to this, 'I have said to your majesty, Sire, that it was necessary for the health of the queen.' 'That is true,' said the king, 'and I did not tell it to my wife until it was all over, so that the joy would not upset her. Never a woman did better than you did; if you had done any different, my wife would have died. Hereafter, I shall always call you *Ma Résolue!*'

"The king did me the honor to ask if I wished to be the nurse of M. le Dauphin, and that I could have the same wages as the wet nurse. I begged his majesty to allow me to continue my profession, so that I would always be more capable of serving the queen, and so that he would always have near her an honest woman who understood her well. I remained near the queen to serve her in her bed one month, then eight days afterward, awaiting the return of his majesty from Paris, who had asked me to wait for him."—*American Journal of Obstetrics and Diseases of Women and Children*, May, 1912.

The Physician's Attitude of Compliance.—Benjamin Rush, in an address to students, once said that the physician should not oppose unnecessarily the simple whims and prescriptions of his patients. He should yield to them in matters of little consequence, but should at all times maintain an inflexible attitude over them in matters that are essential to life.

Medical Record

A Weekly Journal of Medicine and Surgery

Vol. 82, No. 20.
Whole No. 2193.

NEW YORK, NOVEMBER 16, 1912.

$5.00 Per Annum.
Single Copies, 15c.

Original Articles.

AN OPERATION FOR EXTREME CASES OF PROCIDENTIA, WITH RECTOCELE AND CYSTOCELE

BASED ON ANATOMICAL, PHYSIOLOGICAL, AND DYNAMIC PRINCIPLES, WITH REPORT OF CASES.*

BY J. RIDDLE GOFFE, M.D.,

NEW YORK.

PROFESSOR OF GYNECOLOGY AT THE NEW YORK POLYCLINIC AND DARTMOUTH COLLEGE MEDICAL SCHOOL; ATTENDING SURGEON TO THE WOMAN'S HOSPITAL; ATTENDING GYNECOLOGIST TO THE POLYCLINIC HOSPITAL; CONSULTING GYNECOLOGIST, N. Y. CITY HOSPITAL; MT. VERNON HOSPITAL; ST. JOSEPH'S HOSPITAL, YONKERS, AND THE LAWRENCE HOSPITAL, BRONXVILLE.

No more interesting subject nor one more heavily fraught with promise of far-reaching and most beneficial results has attracted the attention of abdominal and pelvic surgeons during recent years than the dynamics of the closed cavities of the body. Through these investigations we are beginning to get some light on the causes of ptoses and methods of cure. A knowledge of the cause, the etiology, of pathologic conditions is the first step in the solution of the problem. This holds throughout the whole realm of medicine and surgery, but nowhere does it apply more conspicuously than in the treatment and cure of organic displacements.

Immediately there looms up before us the subject of intra-abdominal pressure, and therein has lurked a great mystery.

The laws of hydrostatic pressure have been accepted by some as the key to the problem, and upon these laws have been constructed complete and elaborate theories which, at first blush, seem to be quite convincing. In the elaboration of the details of intraabdominal pressure, however, they fail to answer satisfactorily many important questions, and we are driven to the conclusion that fluids, either in equilibrium or under active pressure, do not tell the whole story. Careful investigation reveals many reasons for this. In studying this subject we must take into consideration the following facts: (1) The abdominal and pelvic cavities, whether considered individually or as one continuous chamber, have both elastic and inelastic walls; (2) that the interior conformation is most irregular and made up of reflecting planes of pressure at various and varying angles to each other; (3) that within these cavities are many organs of various shapes and density which transmit and reflect pressure with varying degrees of facility and speed; (4) that some of these identical organs at successive and alternating periods contain solids, liquids, and gases; (5) that these tissues are all vital tissues acting under physiological laws.

The dynamics, therefore, of the abdominal cavities are not restricted to hydraulics, and we must follow the ramifications of pressure when applied upon any part of the surface of the cavities guided by the laws of reflection and deflection, of transmission through vital tissue, and all constantly modified by psychological action.

Without dwelling upon pressure as relating to the abdominal cavity, our interest is more directly concerned in this discussion with conditions in the pelvis. In this cavity the application of pressure is psychologically directed toward expulsion of the contents either of the uterus, the bladder, or the bowel. Here is where we have the most striking illustration of the importance of deflecting planes in directing expulsive force into the axis of the pelvic outlet. This mechanism of deflection and the importance of understanding the action of the deflecting planes is pronouncedly exemplified in the corkscrew progress of the fetal head through the various straits of the pelvis. In this the bony planes play the most conspicuous part. In the evacuation of the bowels, however, we have the intraabdominal pressure coming down into the pelvis, which, to accomplish its desired result, must likewise be deflected into the axis of the pelvic outlet. Under these circumstances the resultant of these forces which finally determines their ultimate effect, and which we must follow if we wish to determine their action, exerts itself most directly upon the posterior face of the uterus and its broad ligaments. This plane of tissue is thereby forced down to a lower level in the pelvis until its progress is interrupted by the resistance of its ligaments, more especially the cardinal ligaments, and in extreme instances by the crest of the perineum. At this stage the longer arm of the uterine lever (*i. e.* fundus) is arrested by this resistance, while the posterior freepole of the uterus (*i. e.* the cervix) is forced further down, thus tilting up the fundus, thereby deflecting the pressure backward and downward upon the rectum in the axis of the outlet. As Sturmdorf says: "Were this pressure to continue without deflection, this upward tilt of the anterior arm of the uterus must continue, and, extending beyond the perpendicular, would retrovert the uterus and force its long axis into line with that of the vaginal outlet." The uterus in this position would fall into the direct axis of the expulsive planes, where it is subjected to such irresistible pressure that the ligaments give way and prolapsus uteri ensues, with its accompanying complications of rectocele and cystocele.

To my mind the importance of this deflecting plane of tissue represented by the uterus and its broad ligaments, in deflecting intraabdominal pressure, cannot be overestimated. It is undoubtedly true that the ligaments of the uterus would be incapable of resisting normal intraabdominal pressure were it continuously applied in the direction in which it first impinges upon it. By the resilience of its ligaments and their muscular contractions

* Read at the meeting of the American Gynecological Society, Baltimore, May 28, 1912.

this force is deflected and the uterus when relieved of this pressure is elevated to its normal topographical position by the ureterosacral and round ligaments. "It is a gross misconception of function," says Sturmdorf, "to attribute visceral support to textural strength of ligament or muscle; the muscle or ligament is not created that can permanently withstand the continuous force of intraabdominal pressure. These muscular and ligamentous elements serve to support the pelvic contents not by virtue of their *textural resistance* to displacement but by *deflecting* the displacing force of intraabdominal pressure." *

The failure of procedures for displacements of the uterus which involve fixation of that organ to the abdominal wall tends to confirm this principle and is a pertinent demonstration of the fallacy of substituting artificial for normal physiological support. The normal physiological support of the uterus resides in its ligaments. They are, therefore, the proper tissue to utilize in any operation for the restoration of the uterus to its normal position and physiologic function as a deflecting plane.

In determining the kind of operation that shall be employed for the relief of procidentia and its accompanying lesions, it is the universal custom to divide all cases into two classes, namely, cases in which the patients are in the child-bearing period, and those which are at or have passed the menopause.

In my operation the underlying motive is to restore not only anatomical structures, but also physiological function. In the first class of cases, after attending to any minor lesions, the uterus is restored to its normal position by shortening the round ligaments through the vagina, and in extreme cases the utero sacrals as well. This is done with the prominent idea in view of reconstructing the normal anatomical arrangement, and thereby re-establish the important function of the uterus and broad ligaments as a deflecting plane of intraabdominal pressure.

In dealing with the cystocele, the effort has been made to observe with scrupulous care also the anatomy function, and topographical position of the bladder. Kelly has graphically described the physiologic action of the bladder and its function of receiving and discharging the urine. Incidentally he speaks of the anatomic fixation of the trigone. I cannot give a clearer picture of this process than by quoting Kelly's own words: "As the bladder empties, the upper, more movable portion, covered with peritoneum, settles down into the lower and relatively more fixed portion, which lies in close relation to the vagina until it comes to lie within it as one saucer rests in another. During respiration the free upper half may be seen (through the cystoscope) moving on the lower half, as if hinged, and the line of demarcation between them may be distinctly made out. At the edges where the two saucers meet, three folds are formed—the right, left, and posterior. The posterior fold stretches from side to side in front of the uterus; it is gently convex forward, following the contour of the uterus and ends in front of each broad ligament, where each lateral fold begins and extends horizontally around toward the urethra. These folds represent the physiological hinges on which the bladder moves in expanding and collapsing. The apices, where the posterior fold joins the lateral folds in front of the broad ligaments, are called the right and left vesical cornua."

My operation restores with accuracy this anatomic arrangement. The trigone of the bladder is spread out and made fast to the anterior face of the uterus and broad ligaments, by carrying the base of the bladder up and stitching it at three points; one stitch at each cornu, and one in the median line at the center of the anterior face of the uterus. The utrovesical peritoneal fold is restored as well as the hinges on which the dome of the bladder moves in its function of receiving and discharging the urine. I take it that nature is not working without a purpose in giving fixation to the trigone. This gives a fixed point of exit for the urine and a rigid canal in the passage of the ureters through the wall of the bladder.

In the restoration of the floor of the pelvis I use the method of distinct isolation of the levator ani muscles and stitch them together with buried sutures. It is my conviction that this is the surest and most effective way to restore proper function to the floor of the pelvis. The muscles are thereby freed from cicatricial attachments which distort and limit their function and seems to make a new clean sheath for themselves in which they contract and slide easily and normally. I got my inspiration for adopting this procedure through an article by Dr. Arnold Sturmdorf of New York (MEDICAL RECORD, April 1, 1905), and which is the fullest and most satisfactory explanation that I have ever read on intraabdominal pressure, and the physiological action of deflecting planes of tissue both as retention and expulsive planes.

In the second class of cases, that is, in patients at, near, or beyond the menopause, my effort has been, and I think successfully, to retain as nearly as possible all these physiological functions following the plan as already described. Unless there is positive objection on the part of the patient the uterus is removed per vaginum. In order to restore the deflecting plant of tissue the broad ligaments are stitched together across the pelvis from the infundibulo pelvic and round ligaments down to cardinal ligaments. In this procedure a plane of tissue is restored in exactly the same situation and under control of the same ligaments as under normal conditions. This deflects from its posterior surface back into the pelvic outlet, the intraabdominal pressure, and thus physiologically takes place of the original structures. On its anterior face it also affords a surface on which to spread out and fix the trigone of the bladder, restoring its hinges and all its physiological functions. The floor of the pelvis is restored in the usual manner.

Occasionally there is such an extreme prolapse of the rectum that something more than the restoration of the levator ani muscle becomes necessary. In these cases I have obtained most satisfactory results by stripping the vaginal mucous membrane off from the anterior wall of the rectum, from the line of the peritoneal covering down to the fourchette and then plicating the wall of the rectum with buried catgut sutures. The sutures are passed up and down in the direction of its longitudinal axis; sometimes one line of sutures will suffice, but in ultra conditions two and even three lines of suture running across the rectum have been necessary to comfortably take in all the slack. These sutures, of course, do not enter the lumen of the gut.

In estimating the indications and the value of this operation many things must be taken into con-

* MEDICAL RECORD, April 1, 1905.

sideration. (1) The permanency of results; (2) the age of the patient, with reference to shock; (3) the character of the convalescence, whether stormy or smooth and comfortable; (4) the restoration of physiological functions.

For the purpose of this investigation I have written letters during the last month to forty-six patients. This list included all those upon whom I had performed this operation previous to two years ago, and whose addresses I have. Owing to the removal of the Polyclinic Hospital to its new quarters, and the confusion attending it, I was unable to secure access to the records there. I regret this exceedingly, for I have quite a series of cases in which this operation was done, and whose histories are there.

Of the 29 patients who reported, 24 came to the office for examination, the balance reported by letter. Of the 24 who presented themselves for examination there was not one that showed the slightest tendency to recurrence, and all gave most favorable reports of improvement not only in their local condition but in their general health. Of five who reported by letter, all gave most favorable accounts of the benefit received, with one exception. She wrote as follows: "My operation was not a success; my bladder dropped the last of May. I was operated on in December. I am going out dressmaking and I am very comfortable at present." This was a poorly nourished widow, aged fifty-seven years, who was suffering from an extreme procidentia and an irritating kraurosis vulvæ. To relieve this she was subjected, at the same sitting, to circumcision of the pudendum. I wrote at once to her family physician asking him to call and make an examination, but to date have received no response.

I cannot tell you how gratified I have been by these tested results. Some of the cases are of seven years' standing, others of four, and three, and the balance of over two years' standing. Two of the patients who came to my office had each borne a child two years after the operation. Both had normal labors, and in neither one was there the slightest lesion of any kind. All the different procedures in the operation had held perfectly.

In regard to the bladder, three who had had annoying incontinence previous to operation reported a cure; five reported slight irritability of the bladder, lasting from three to five months after the operation, but not present since.

In making my examinations I tested in all instances the contracting power of the levator ani muscles. It was most interesting, and I must say somewhat surprising to me to discover these muscles responded readily and powerfully under voluntary control.

In reference to the age of the patients, although my previous experience had demonstrated to me that elderly women bore vaginal operations surprisingly well, I was not prepared for such sturdy resistance as the elderly women exhibited in this somewhat exteme operation. Among my cases are 11 patients between fifty and sixty years of age, 4 between sixty and seventy, and 1 at the rare old age of seventy-five years at the time of operation. In not one of them was there sufficient reaction to demand any departure from the regular routine after-treatment. The old lady of seventy-five years is now seventy-nine years of age, and last week walked across the city from Tenth Avenue to my office, fully a mile, on the hottest day we have had this year. When I asked her how she felt she replied, "You have made a new woman of me." Another patient, aged sixty-three years, replied, "I feel as good as new."

Convalescence is surprisingly smooth. In not a single case has infection occurred. Catheterization, as a rule, is not continued beyond the second day. If prolonged, I have the patient out of bed and on the commode by the fifth day.

In response to the question regarding the action of the bowels, all expressed gratification at the ease with which defecation was accomplished. While much of this can be attributed to the restoration of the levator ani muscles, I am inclined to attribute no small part of it to the deflecting power of the broad ligaments.

I have been greatly interested in the reports of Dr. Osgood, the cystoscopist at the Woman's Hospital. He has kindly interested himself during the last year in cystoscoping the bladders of all patients subjected to this operation, both before and after operation. He reports complete restoration of normal conditions in the interior of the bladder. The mouths of the ureters are in normal position and relation and the interureteral ridge is readily distinguished and followed from side to side. As none of these cases come into this report on account of the time limit, I shall hope to report at some future time the result of this feature of the investigation.

I have had a somewhat unique experience in three cases. They were patients who had hysterectomies done two, three, and four years previously, one of them a case of my own, in which, however, I did not apply my procedure of stitching together the broad ligaments. In all of them there was marked rectocele and cystocele. In these three cases I had the satisfaction of opening the head of the vagina through the original scar, picking up the broad ligaments, stitching them together across the pelvis, and then utilizing them as a plane upon which to spread out the bladder. These operations have all been done within the last six months, and so do not fall within the time limit prescribed for the report of cases at this time. In all these cases I was able to secure the infundibulo pelvic ligament and cardinal ligaments, and in two of them the round ligaments as well. In the third case the round ligaments had retracted so far that I was unable to recognize them. In this case there were many resisting cobweb adhesions to deal with in all directions.

In all operations upon the human subject it must be borne in mind that we are dealing with vitalized tissue. And the nearer the operation comes to restoring each and every physiologic function is the measure of success in reaching for the ideal. It is not sufficient to say that the result accomplishes a reasonable purpose as long as something more perfect is within our grasp. In the language of one of our distinguished colleagues, Dr. Polk: "The basis of our art being in reality science, and this branch of science dealing with life and its efficiency as developed chiefly in the human race, the sacredness of our trust compels at our hands the highest conceptions and the most skillful execution of such conceptions that human effort is capable of."

The detailed report of cases follows:

Mrs. G., Elmira, N. Y., aged thirty-four years; married twelve years, four children. Previous operation for trachelorrhaphy and perineorrhaphy, both operations failures. Diagnosis: procidentia of second degree; rectocele and cystocele; umbilical hernia; hemorrhoids. Operation January 30, 1905. All lesions repaired; Goffe operation for cystocele. Last seen, 1907. Result: cure.

Mrs. W., Mt. Vernon, N. Y., aged forty-six years; married twenty-five years; four children; last child six years ago; since birth of last child, menses excessive and too frequent. Diagnosis: large retroflexed uterus; large diseased cervix; lacerated perineum; marked cystocele and rectocele. Operation, March 10, 1905. Dilatation of cervix, curettage; amputation of cervix; interposition of fundus; perineorrhaphy. Result: convalescence uneventful; she gradually recovered strength and nerve, but complained of constant discomfort in the pelvis; uterus failed to involute; sensitive on pressure; slight leucorhea. Operation, February 15, 1906. Abdominal hysterectomy; bladder stitched to broad ligaments; health restored. Last seen May 20, 1912. Has not had such good health since marriage as since the operation. Examination: satisfactory. Levator works well.

Mrs. W., New York City, aged thirty-eight years; married seventeen years; seven children. Diagnosis: lacerated perineum; extensive cystocele and rectocele. Operation, December 19, 1906. Goffe operation for cystocele. Last seen May 23, 1912. "No more drag." Examination: uterus in normal position; everything satisfactory; levators stong under voluntary control.

Mrs. D., Mt. Vernon, N. Y., aged fifty-one years; married twenty-one years; three children; menopause one year; lacerated cervix and perineum; rectocele and cystocele. Operation, February 13, 1907. Hysterectomy; Goffe operation for cystocele. Last seen May 17, 1912. No unpleasant symptoms. Examination: satisfactory. Result: perfect.

Mrs. D., New York City, aged thirty-six years; married seventeen years; eight children. Diagnosis: complete rupture of perineum through sphincter; cystocele. Operation, March 12, 1907. Anterior colpotomy; perineorrhaphy. Last seen May 20, 1912. Had baby January, 1909; had postpartum hemorrhage and nearly lost her life; has slight leakage of the rectum occasionally. Examination: uterus and bladder satisfactory; levator strong; sphincter not quite tight enough.

Mrs. P., New York City, aged forty-eight years; married twenty-seven years; five children. Diagnosis: no control of bladder; extensive cystocele; lacerated perineum. Operation, July 1, 1907. Goffe operation for cystocele; uterus retained. Last seen May 18, 1912. Reports she has perfect control. Examination: perfect result.

Mrs. C., Mount Vernon, N. Y., aged fifty-seven years; married thirty-nine years; three children. Diagnosis; prolapsus; lacerated cervix and perineum; rectocele and cystocele. Operation, October 7, 1907. All lesions repaired. Goffe operation for cystocele; uterus retained. Last heard from in letters from daughter; report all satisfactory until time of death, December, 1911, from Bright's disease.

Mrs. S., Long Branch, N. J., aged fifty years; married twenty years; one child; menopause at thirty-five years. Diagnosis: procidentia, rectocele, and cystocele. Operation, October, 1907. Last seen May 14, 1912. Satisfactory, except slight hernia of bladder through vaginal sheath; upper end of vagina fast to broad ligaments; vagina proper length; perineum satisfactory; symptoms of return of bearing down feeling.

Mrs. W., New York City, aged forty-four years; married twenty-four years; four children. Diagnosis: lacerated perineum; rectocele. Operation, November 4, 1907. Plastic urethra; perineorrhaphy. Died March, 1908, from Bright's disease of kidney.

Mrs. C., White Plains, N. Y., aged fifty-seven years; married thirty-six years; four children. Menopause nine years ago. Diagnosis: prolapsus uteri; cystocele. Operation, December 20, 1907. Hysterectomy; Goffe's improved operation. Circumcision of pudendæ for kraurosis vulvæ. Result by letter, May 15, 1912. "My operation was not a success; my bladder dropped the last of May. I was operated on in December."

1908.—Mrs. M., Chester, N. Y., aged sixty-two years; married forty-two years; eight children. Diagnosis: procidentia; rectocele and cystocele; local relief perfect. Hysterectomy; Goffe operation; caruncle destroyed by actual cautery. Last heard from by letter from Pasadena, Cal., May 20, 1912: "Never was an operation more successful, and I see no reason why it should not remain permanent."

Mrs. P., New York City, aged thirty-three years; married twelve years; three children. Diagnosis: lacerated perineum and cervix; prolapsus uteri; rectocele and cystocele. Operation, January 15, 1908. All lesions repaired; Goffe operation for cystocele; uterus retained. Last seen May 15, 1912. Had a baby two years after operation weighing eleven pounds at birth; all parts in perfect condition, not even a nick in the perineum; surprisingly good in every particular.

Mrs. B., Mt. Vernon, N. Y., aged thirty-seven years; married thirteen years; three children. Diagnosis: complete procidentia; rectocele and cystocele; lacerated cervix and perineum. Operation, January 29, 1908. All lesions repaired; Goffe operation for cystocele; uterus retained. Last seen May 18, 1912. Reports great improvement in general health and local relief perfect. "Rolls sixteen pound ball down bowling alley every Tuesday night." Examination, result perfect.

Mrs. D., Bronx, aged fifty-one years; married; four children. Diagnosis: procidentia; cystocele. Operation, March 10, 1908. Writes, May 19, 1912: "Your operation made a new woman of me—a great success."

Mrs. Y., Glenridge, N. J., aged thirty-four years; married; one child stillborn ten years ago. Seven years ago applied for relief of prolapsus; had only escaped with her life after terrible forceps case three years previously; was told she could never be delivered. After measurements I reassured her and advised repair and try again. Operation: trachelorrhaphy; shortening of round ligaments vaginally and colporrhaphy; she conceived, and four years ago I delivered her of living child with high forceps; extensive laceration of cervix; immediate repair. Diagnosis: procidentia complete; rectocele and cystocele. Operation, April, 1908. Hysterectomy; Goffe operation for cystocele. Last seen May, 1910, satisfactory. Letter from Evanston, Ill., May 20, 1912: "I am glad to speak for the wonderful effect of your operation. I have been perfectly well ever since."

1909.—Mrs. Van V., Brooklyn, N. Y., aged seventy-five years; married. Diagnosis: procidentia, rectocele and cystocele. Operation, February 13, 1909. Hysterectomy; Goffe operation for cystocele. Last seen May 24, 1912. Result: "You made a new woman of me." Examination: nothing better to be desired.

Mrs. H., Brooklyn, N. Y., aged sixty-three years;

married forty-six years; two children. Diagnosis: extreme procidentia; rectocele and cystocele. Operation, February, 1909. Hysterectomy; Goffe operation for cystocele and rectocele. Last seen October, 1911: "Entirely relieved." Examination entirely satisfactory.

Mrs. B., New York City, aged fifty-seven years; married thirty-four years; fourteen children. Diagnosis: complete procidentia uteri. Operation, March 20, 1909. Vaginal hysterectomy; plastic for cystocele and rectocele; perineorrhaphy, Goffe method. Returned to hospital February 3, 1910. Diagnosis: rectocele; Goffe operation for rectocele; plication. Last seen December, 1912, satisfactory.

Mrs. S., New York City, aged forty-eight years; married; four children. Diagnosis: procidentia uteri, cystocele. Operation, April 21, 1909. Plastic for cystocele; perineorrhaphy; Goffe operation. Last seen May 20, 1912. Says she feels all right. Examination: large, stout woman; runs lunch counter and works in garden. Result: satisfactory; levator works perfectly.

Mrs. W., New York City, aged fifty years; married thirty-two years; two children. Diagnosis: procidentia; rectocele and cystocele. Operation, May 10, 1909. Hysterectomy; all lesions repaired; Goffe operation for cystocele. Last seen May, 1912. Result: perfect; health restored.

Mrs. R., Mt. Vernon, N. Y., aged sixty-three years; married thirty-five years; three children. Diagnosis: procidentia; cystocele and rectocele. Operation, June 5, 1909. All lesions repaired; hysterectomy. Last seen May 16, 1912. Result: perfect. "Feels as good as new."

Mrs. C., New York City, aged fifty-three years; married thirty-three years; two children. Diagnosis: procidentia rectocele, and cystocele. Operation, October 19, 1909. Hysterectomy; Goffe operation for cystocele. Last seen May 23, 1912. Result: "Entirely relieved." Examination: satisfactory; levators strong and under voluntary control. Satisfactory in every particular.

Mrs. F., Newburg, N. Y., aged thirty-two years; married six years; one child. Diagnosis: cystocele and rectocele; relaxed urethra. Operation, December, 1909. Goffe operation for cystocele; uterus retained. Last seen May 20, 1912. Feels all right; has slight leakage from urethra on exertion, but usually under good control.

1910.—Mrs. R., New York City, aged forty-nine years; married; six children. Diagnosis: procidentia, rectocele, and cystocele. Operation, February 16, 1910. Vaginal hysterectomy; perineorrhaphy; Goffe operation for cystocele. Last seen May 20, 1912. Has frequent micturition, otherwise satisfactory. Nothing to be desired.

Mrs. W., New York City, aged fifty-one years; married; nine children. Diagnosis: rectocele and cystocele following vaginal hysterectomy three years ago. Operation, March 10, 1910. Colpotomy; picked up the broad ligaments, stitched them together, and completed Goffe operation for cystocele; rectal wall plicated and perineorrhaphy, stitching separately the levators. Last heard from May 21, 1912, by letter: "Operation a decided success."

Mrs. C., New York City, aged thirty-nine years; married seven years; one child. One year ago had operation in Cleveland, Ohio, for falling of the womb, which at that time came outside the vulva. Diagnosis: recurrent cystocele; erosion of cervix, uterus in normal position, and well restored perineum. Operation, March 15, 1910. Goffe operation for cystocele; uterus retained. Last seen May 18, 1912. Result: satisfactory.

Mrs. D., New York City, aged thirty-four years; married fifteen years; four children. Diagnosis: lacerated cervix and perineum; retroversion; rectocele and cystocele. Operation, October 14, 1910. All lesions repaired; round ligaments shortened; Goffe operation for cystocele; uterus retained. Last seen May 20, 1912. Menstruates from rectum clots. Examination: nothing to be desired.

Mrs. G., New York City, aged thirty-six years; married twelve years; three children. Diagnosis: procidentia; rectocele, and cystocele. Operation, November 4, 1910. All lesions repaired; Goffe operation for cystocele. Last seen May 12, 1912. Result: satisfactory; uterus in good position; also bladder and perineum.

616 Madison Avenue.

SOME PRACTICAL POINTS IN THE INTERPRETATION AND MANAGEMENT OF HIGH BLOOD PRESSURE.

By EDWARD E. CORNWALL, M.D.,

BROOKLYN, N. Y.

ATTENDING PHYSICIAN TO THE WILLIAMSBURGH AND NORWEGIAN HOSPITALS; CONSULTING PHYSICIAN TO THE BETHANY HOSPITAL.

In order to know what constitutes high blood pressure we must first know what is the normal blood pressure. That is not as easy as might be supposed, for the normal blood pressure varies considerably at different ages and in different conditions of life and activity, and these variations as observed in apparent health are often so great as to require differentiation from disease symptoms. In fact, the interpretation of blood pressure findings calls for the exercise of a highly cultivated clinical judgment. But it is necessary to have some general statement for a guide, and the following will serve that purpose, with due reservation for exceptions.

We can omit consideration of the blood pressure in infants and children, because variations in their blood pressure rarely have serious significance. In young adults the normal systolic blood pressure ordinarily ranges between 110 and 130 mm. Hg. A large proportion of young adults show a pressure of 120 to 125 mm. Hg. In people of middle age the pressure is usually about ten points higher than in young adults, and in elderly people it may be twenty or thirty points higher. In young and middle-aged adults a pressure of 140 mm. Hg is often found without seeming to indicate disease; and elderly people who appear perfectly well sometimes show a pressure no higher than that of middle-aged adults, though failure to show increased pressure with advancing age is often an indication of myocardial degeneration.

The disatolic pressure in most healthy adults is usually 25 to 45 mm. Hg. lower than the systolic. In conditions of myocardial weakness and simple hypertrophy of the heart the difference may be greater. In aortic incompetence the difference may be as much as 100 mm. Hg., and in chronic nephritis with high tension it is often 60 to 80 mm. Hg. or more. In most cases of high tension the diastolic pressure does not rise *pari passu* with the systolic.

We distinguish between transient and persistent high blood pressure. The former is produced by any sudden and extraordinary demand made on the circulation and passes away with the cessation of the demand, and does not necessarily possess pathological significance. It is persistent hypertension,

that is, elevation of the blood pressure which lasts for a considerable time, to which pathological interest attaches and to which discussion is confined in this paper.

The general causes of persistent hypertension are these: Long continued functional abuse of the circulatory apparatus, mechanical obstruction of the circulation, toxemia, and neurotic states. These causes frequently coexist and cooperate and even produce each other.

Functional abuse of the circulation is brought about by physical and mental overwork, excitement, worry, and overeating. If a man lives a strenuous or a dissipated life, he compels his circulation for long periods to maintain an intra-articular pressure considerably higher than his arteries were meant to sustain. If troubles come on him and he worries about them, the worry keeps up an abnormally high arterial tension. If while leading a strenuous or a dissipated or a worried life, he eats too much or eats food which overtaxes his antitoxic or eliminative organs, whose efficiency has already been impaired by the disturbance of the circulation, a further demand is made for high arterial tension, and another factor, toxemia, is admitted. Overeating habitually indulged in can be a primary cause of hypertension, and after it has produced insufficiency of the protective and eliminative organs, it brings in the toxemic factor.

Hypertension resulting from functional abuse of the circulatory apparatus invites structural changes in that apparatus, viz., cardiac hypertrophy, myocardial degeneration, arteriosclerosis, and chronic nephritis. It may, however, continue for a considerable time before these changes develop to a serious extent; and it is during this premonitory or incipient stage of cardiovascular disease that treatment can be most effective.

Mechanical obstruction of the circulation is produced by arteriosclerosis, cirrhosis of the kidneys and other organs, and pressure of outside masses on the arteries. Arteriosclerosis may exhibit a pure obstruction, though sooner or later nephritis complicates the picture. As a result of mechanical obstruction anywhere in the system of tubes, permanently increased blood pressure is required to maintain adequate circulation through the tissues, and stiffening and deformity of arteries whose distribution is limited to a small region of the body may compel this increased pressure. For example, a rigid and thickened coronary artery causes increase of the general blood pressure in order to provide nourishment for the muscle of the heart, which requires to be fed first so that it can serve the rest of the body. Similarly, cerebral, renal, or splanchnic arteriosclerosis, in order to supply local requirements, compels general hypertension. The general response of the blood pressure to localized arteriosclerosis varies much with the importance of the anatomical region in which the circulation is impeded. When the obstruction of the arteries threatens a vital region with starvation, high blood pressure comes quickly to the rescue, but when the thickened arteries supply tissues of only secondary importance, the increase in blood pressure may be comparatively small.

Chronic nephritis, particularly chronic interstitial nephritis, is generally considered second only to arteriosclerosis as a cause of persistent high blood pressure. It may compel high blood pressure by the obstruction to the circulation in the hardened kidneys, but a large, possibly the major part of the increased tension is undoubtedly due to retained toxins.

Compression of the brain by a clot of blood or other mass regularly raises the blood pressure, and it may do so to a very high point. I have seen a pressure of over 300 mm. Hg. accompany an attack of cerebral apoplexy. Abdominal tumors and distention of the abdomen by gas or fluid sometimes cause hypertension by pressure on the arteries.

Toxemias cause high blood pressure directly, and perhaps indirectly also, by the demand which they make for increased elimination. Of the toxemias, the most extensively operative in these directions is probably chronic putrefaction toxemia of intestinal origin.

The putrefaction toxins when present in the blood in relatively excessive quantity seem to be powerful exciters of high blood pressure, and it is possible that they are also directly effective in producing degenerative changes in the walls of the arteries as well as in the tissues of the kidneys and liver. The proposition that putrefaction toxins directly raise the blood pressure has received positive support from recent experiments by Dale, who found that a rise of pressure from 110 to 260 mm. Hg. followed intravenous injection of parahydroxyphenylethylamine, a substance chemically somewhat similar to adrenalin, which Beyer isolated from putrid meat. Some toxins also lower blood pressure, and putrefaction toxemia is often observed without hypertension.

The toxemia of pregnancy, which seems to be a mixed toxemia, due chiefly to renal and hepatic insufficiency, is usually attended by considerable hypertension; less frequently the rise of blood pressure is only moderate; occasionally the blood pressure is low.

Alcohol produces, as an immediate effect, lowering of the blood pressure, but continued use of it may bring about degenerative changes in the heart, arteries, and liver. It is highly probable that it regularly disturbs the liver functions, and by so doing lessens the ability of that organ to protect the body from the putrefaction and other toxins which are brought to it by the portal vein; and in that way it may indirectly raise the blood pressure. The relationship which alcohol seems to bear to putrefaction toxemia through its effect on the liver, throws a new light on the symptoms and pathology of alcoholism.

Tobacco regularly raises the blood pressure, and in a healthy young man a single cigar may cause a rise of 15 or 20 mm. Hg.; but in habitual smokers, young, middle-aged, and old, I have seen excessive use of tobacco cause a slow, low tension pulse, which became normal after abstention from the drug for a few days.

Coffee directly raises the blood pressure, and if taken to excess may put the cardiovascular system in an irritable state which manifests itself by prolonged high tension; but the more common effects of coffee seem to be functional disturbances of the heart, which, however, if long continued, may produce cardiac hypertrophy and its consequences. It is possible that coffee, like alcohol, may increase putrefaction toxemia through its disturbing effect on the liver.

Some neurotic states cause hypertension. This has been observed in epilepsy during the attacks, though after the paroxysm the pressure regularly falls. In melancholia there is usually hypertension, but not in mania. In neurasthenia the blood pressure may be high or low.

Valvular diseases *per se* do not cause high tension, with the exception of aortic incompetence, in which condition the systolic pressure is regularly high, though it is usually counterbalanced by an abnormally low diastolic pressure. In any case of valvular disease there are changes, particularly in the kidneys and liver, which may bring about high tension and a vicious circle.

The subjective symptoms of high blood pressure are often slight and not at all distinctive. The most frequently observed of these symptoms are a feeling of weakness, inability to do the ordinary amount of physical and mental work, more or less shortness of breath on exertion, headaches, dizziness, loss of appetite; sometimes cardiac unrest is a prominent symptom; the closing of the aortic valves may be distinctly audible to the patient, especially when lying with his right ear on a pillow, but this symptom may be entirely unnoticed, and it may be present without much hypertension. Symptoms of cardiac overaction manifest after going to bed are common, and the patient may be awakened by a violently beating heart; but these symptoms may be due to myocarditis or indigestion. Cramps in the muscles of the legs are frequent and occur usually in cases with arteriosclerosis or nephritis. Localized pains and peculiar feelings in the head and head noises are often complained of by patients with high blood pressure, but it is difficult to say in any case how much they are due to the high pressure and how much to arteriosclerosis.

In making the diagnosis in any case showing persistent high blood pressure, we should first try to find out to what extent disease of the arteries and kidneys exists. Such organic disease may be present without giving frank signs. If nephritis is present repeated examinations of the urine will usually reveal albumin or casts, or at least some insufficiency of the kidneys. The estimation of the urea excretion in the twenty-four hour specimen of the urine is the most important single urinary test that can be made in this condition. Of particular value in determining to what extent arterial or renal lesions exist in cases showing high blood pressure, is the rapidity and extent of the improvement that takes place under appropriate treatment.

The state of the myocardium may complicate the picture. Chronic myocarditis is usually accompanied by conditions which naturally cause hypertension; but we often find a relatively low blood pressure with such conditions; and in such cases we justly suspect the myocardium of being the seat of more than moderate degenerative changes. Myocardial failure is regularly a terminal occurrence in any case of high tension due to chronic nephritis or arteriosclerosis, and a fall in the pressure in these advanced cases is always an ominous sign.

High blood pressure is essentially a conservative process, and may be absolutely necessary for the proper performance of the vital functions, and should therefore not be lowered without due consideration of the physiological necessities of the case. In fact, *high blood pressure, except in certain conditions where its continuance threatens accidents to the cardiovascular apparatus, should be reduced only by removing as far as possible the cause.* I wish to emphasize this statement, not only because it epitomizes the treatment of this symptom, but because of the warning it conveys against the indiscriminate use of arteriodilators in conditions of high blood pressure, which is so common in present medical practice as to require this warning.

Among the removable factors which enter into the etiology of high blood pressure there is one which is present in nearly every case in greater or less degree. I refer to chronic putrefaction toxemia of intestinal origin. In many cases this toxemia is the principal factor, and its removal is sufficient to lower the blood pressure greatly and to bring about a marked change for the better in the clinical picture and the prognosis. Even in cases with considerable arteriosclerosis or nephritis, removal of this factor usually relieves the situation. It can be removed to a very great extent by an appropriate diet. The regulation of the diet for the removal of this factor is the most effective means which we have for the lowering of high blood pressure, and it is our most successful agent in the treatment of the extensive group of morbid conditions in which hypertension is a regular symptom; furthermore, we have the satisfaction of knowing that any reduction of high blood pressure which comes from regulation of the diet is beneficial and safe because it is due to the removal of a cause. I shall say no more here on this phase of the subject, as I have dwelt on it at some length elsewhere. (See MEDICAL RECORD, April 11, 1911, and December 23, 1911; *New York Medical Journal*, June 20, 1912, and *Archives of Diagnosis*, July, 1912.)

There are other causes of high blood pressure besides putrefaction toxemia of intestinal origin, notably overwork and dissipation, late hours and excessive indulgence in coffee, tobacco, and alcohol, which are under our control and which should be removed as far as possible as an essential part of the treatment.

Mechanical methods of treatment, such as massage and judiciously administered baths, have a place, though not as prominent a one as some think, among our therapeutic resources. A change of occupation, especially the substitution of a moderate amount of light physical work for exclusively mental work, is often good treatment.

It is claimed, with what truth I do not know, that electricity, particularly the high frequency current, can directly and materially reduce high blood pressure. If this is so, it should be employed with great caution if at all. Certainly in the arteriosclerotic, nephritic, and toxemic cases, which include nearly all, any agent may do serious harm which lowers high blood pressure without removing the factor which causes it or makes it necessary.

Keeping the minds of the patients at rest and quieting their apprehensions about themselves are important points in the treatment. Some patients come to us who have acquired undigested fragments of knowledge on the subject of high blood pressure which worry them. With such patients we should be careful not to make too much of our blood pressure examinations. In every case we should be as optimistic as circumstances permit, and sometimes it may be necessary to exceed the warrant of circumstances in our optimism.

Drugs are of very little value in the treatment of high blood pressure in most cases, but sometimes we find it necessary to use them. Of the drugs employed for this purpose the most important is nitroglycerin; and that drug is the only one of its class, with the exception of amyl nitrite, whose use is limited practically to attacks of angina pectoris, which need be kept on our list; certainly sodium nitrite and probably erythol tetranitrate are dangerous. The indications for the use of nitroglycerin are found almost exclusively in conditions of ar-

teriosclerosis with disturbance of local nutrition and without much involvement of the kidneys or much toxemia. It is particularly valuable in coronary sclerosis, arteriosclerotic headaches, and some cases with arteriosclerotic pains in the abdomen and legs. When there is much nephritis or toxemia it is generally contraindicated. It can be employed as a test to show whether a headache is of arteriosclerotic or toxemic origin; if the latter, it produces no improvement but rather aggravation, while if the former, its effect is usually strikingly beneficial.

Aconite and veratrum have a limited range of usefulness as vasodilators in high pressure cases, but they should be used with great caution if there is much disease of the myocardium. In eclampsia, chronic nephritis, and cerebral hemorrhage they can sometimes be used to avert or lessen damage to the cardiovascular apparatus.

Strychnine, though classed as a heart stimulant, and rightly so, does not seem to increase the blood pressure in arteriosclerosis, but, on the contrary, lowers it in certain cases, probably by improving the general tone and responsiveness and coordination of the vasomotor system.

Small doses of potassium or sodium iodide, long continued, may be used in cases of arteriosclerosis with hope, though not with expectation, of producing improvement, but they should not be given in cases with much nephritis or toxemia.

In bringing these scattering remarks to a close, I wish to refer briefly to a therapeutic point germane to the present discussion, and to which I have made reference in a recent paper, viz., the prophylactic treatment of cardiovascular disease, of which increased blood pressure is an early or premonitory symptom. When we discover moderately high tension in a patient whose family history shows apoplexy, Bright's disease, diabetes, obesity, chronic rheumatism, or heart disease, although in the patient himself no signs of organic change are found, we should treat him the same as we would if he already had evident cardiovascular disease, for it is a practical certainty that he will develop it. We can at least for a time postpone for him his evil days. And when we meet one whose family history or ways of life or both indicate that he is predestined to cardiovascular disease, even if he does not show any elevation of blood pressure, we should seriously warn him of his danger, and should teach him how to live so as to avoid, if possible, his fatal inheritance or destiny.

In these days of strenuous and rapid living, when the spirit of the times drives a large portion of mankind to prefer the pursuit of wealth, fame, power, or pleasure to that of contentment; and when even the making of a simple living, especially in the cities, too often requires an unhealthy amount of hustling, the wear and tear on the circulatory apparatus is excessive, and cardiovascular disease in consequence has become increasingly prevalent. It is not too much to say that cardiovascular disease has come to occupy relatively as important a place in the pathology of the latter half of life as do bacterial diseases in the first half; and the ideal of preventive medicine is as worthy of practical regard in relation to this condition as it is in relation to the diseases of bacterial origin. While showing our patients how to avoid dysentery, smallpox, and typhoid fever, we should not neglect to teach them how to act and eat so as to preserve as long as possible the efficiency of their arteries, kidneys, and heart.

1218 Pacific Street.

THE MODIFIED RADICAL MASTOID OPERATION FOR THE CURE OF OTITIS MEDIA PURULENTA CHRONICA.*

By W. SOHIER BRYANT, A.M., M.D.,

NEW YORK.

In otology, as in all other branches of medicine, it becomes constantly more important to consider the modification and adaptation of certain stereotyped operations according to the needs of the individual case. In this paper we are to consider certain deviations from the classical Schwartze-Stacke operation for chronic middle ear suppuration, that is, from the radical mastoid operation as generally understood. These modifications may be divided into two groups. The first group is the "conservative radical mastoid operation" group, which contains conservative operative procedures upon the tympanic walls and Eustachian tube but allows the loss of the major ossicles and the drum membranes. This group, however, does not concern this paper.

The second group, or modified radical mastoid operation group, includes the operations *which conserve the ossicles and drum membranes.* This type of operation is the subject of this paper.

The author applies the term *modified radical mastoid operation* to the operation which he uses in cases of chronic middle ear suppuration, where he invades the tympanum proper through the bone excavation of the mastoid process and where an attempt is made to close off the tympanic space from the meatus by regeneration of the tympanic membrane.

The distant aim in the performance of the *modified* radical mastoid operation is the retention of the drum membranes and ossicles.

In approaching the subject of the modification of a radical operation, we should keep constantly in mind that the *raison d'être* of the operation is to leave as serviceable an ear with as little hardship to the patient as possible. Stereotyped operations about the ear are even more objectionable than those on other parts of the body, for this kind of aural operation often requires the resection of structures that are not diseased. We should treat middle ear structures with as much consideration as intracranial structures because of their great importance to the individual. Varying conditions require different procedures, because in some cases more important structures can be saved than in others. In some cases, the drum membrane can be saved; in other cases, the membrane and ossicles.

Consider the progress made along the lines of conservation of parts in other branches of surgery. In gynecological operations, for instance, it was formerly considered scientifically necessary to remove many parts which are now allowed to remain, the idea now being that everything possible should be left intact. Should not this be the point of view in otology? An eye is not enucleated when there is a possibility of saving it. Why should an ear be treated with less consideration? In the case of an infected foot, the general surgeon is able to determine with a high degree of accuracy whether the phalanges, metatarsals or any part of the leg can be saved; he decides what portion must be amputated for the safety of the patient's life and conserves with care as much of the useful member as pos-

*Read before the Ninth International Otological Congress, Boston, August 12-17, 1912.

sible. When a surgeon operates for suppuration of the hand, he saves for the benefit of the patient every millimeter of this useful member that he possibly can. The surgeon who does a stereotyped operation regardless of the individual needs of his patient is like the practitioner who prescribes a remedy by the number, as, for example, No. 15 for faintness.

In order to give the best results under the existing conditions, there should be accurate and precise adaptation of the operation to the need of each individual case. When all cases are subjected to technically the same prescribed operation, it is not reasonable that the results can be the best possible in every case. It should be an axiom in performing a mastoid operation that the operative field must be extended according to the advances the disease has made and that the operative field must be curtailed in proportion to the extent of the healthy or redeemable tissues. This conservation is especially necessary with the important structures of the middle ear.

The pathological process in cases of chronic middle ear suppuration extends through many and varied gradations. These grades of the extension of the process pass imperceptibly from one to another. In the most favorable cases there is no tympanic loss of tissue except a small membranal perforation. In these cases the intermittent discharge is kept up by a granulating mucous membrane needing better drainage, and this drainage is provided by a wide U-shaped myringotomy. By imperceptible gradation, the process leads to the crucial condition, which is loss of tympanic structures and active destruction of the temporal bone extending through the mastoid region, zygomatic cells and the cells of the pyramid and invading even the labyrinth. This condition demands wide exenteration of the temporal bone, pyramid, and labyrinth.

Specific Indication for the Modified Radical Mastoid Operation.—The indication for this modified operation is operable chronic middle ear suppuration in the presence of any part of the membrana vibrans. However, the absence of any one or all of the ossicles is not a counter-indication. If there is no possibility of the reestablishment of the drum membranes by cicatrization, that is, if the attachments of the drum membranes are completely gone, this operation cannot be performed. In cases not showing the necessary tissue for a successful modified radical mastoid operation, namely, the drum membrane and the ossicles, the conservative radical mastoid operation is, I think, always indicated.

I originally intended my *modification* of the radical mastoid operation to apply only in cases that had good hearing a short time before the operation, but in practice, I have extended the operation to include all cases that showed a possibility of regeneration of a tympanic membrane, preferably, of course, with the malleus, incus, and stapes *in situ*.

Results.—This operation minimizes danger; it is practically devoid of all dangers. Added to this fact is the fact that all the dressings are absolutely painless.

The operation secures cessation of suppuration; the author has never had a case where the suppuration recurred after the operation wound had healed. As a rule, the suppuration does not even reappear in the convalescence.

This modified operation is followed by a rapid convalescence and by a regeneration of the tympanic membrane for the protection of the labyrinthine walls. No post-aural scar occurs.

The most valuable result of the operation is the preservation, because of the conserved drum membrane and ossicles, of the maximum amount of hearing. In favorable cases the hearing becomes normal. For the restoration of this normal hearing, the cochlear apparatus must be intact and the middle-ear mechanism must be restored to its normal function. In many cases the hearing capacity does not reach its maximum for some time, sometimes as long as a year.

Special Technique and After-Treatment of the Modified Radical Mastoid Operation.—The details of the technique in the operation must be subservient to the desired result. The operator should have two things constantly in mind—first, the individual needs and demands of the case, and second, the conservation of as much of the parts as possible. Sufficient drainage must be provided, though generally little is needed.

After proper sterilization of the field of operation (shaving is not necessary), the skin incision is made about 1 centimeter posterior to the fold of the auricle. The skin is separated from the periosteum, which is cut on a line parallel to the skin incision about 1 centimeter in front of the skin incision. The length of the skin incision and periosteal incision is about 4 centimeters. The periosteum is lifted in an unbroken sheet. The outer table is attacked with rongeurs at the posterior lip of the osseous meatus. If it is impossible to get a good grip with the rongeurs, a curette or a front bent gouge is used and the opening is enlarged until the rongeur can take hold again. I prefer to attack the mastoid cells with rongeurs and curette, as in acute mastoiditis, where I never use the mallet, the only difference in the mode being that in a chronic middle-ear suppuration without acute symptoms, it is rarely necessary to open all the cells and remove the entire mastoid process as it is in acute cases. Having separated the membranous canal from the upper and back wall of the osseous canal, the posterior bony wall of the canal is removed with a rongeur, as in acute cases. In acute cases I always remove the posterior bony wall of the external meatus to the annulus and often remove part of the attic wall. When the bone has been removed close up to the annulus tympanicus, the membranous canal is cut across and held downward and forward with a spatula probe.

The completion of the tympanic work requires strong reflected light. This unusually strong illumination does not delay the operation, but on the other hand, gives added assurance. The dissection should be as exquisitely and carefully done as if in a laboratory under perfect illumination. Enough of the bony canal should be removed to gain a satisfactory view of the tympanic cavity, and thus expose the region of the annulus and middle ear. If drainage requires it, a long U-shaped incision is made in the membrana tympani; the outer attic wall is attacked with a small curette and enough bone is removed to insure drainage of this space. The bone excavation may have to be extended to include part of the tympanic ring.

The tympanic walls may be granulating, and therefore may need some curettage. The tympanic structures must be conserved. Provided the attachment to the incus is preserved intact, the operative field may be extended far enough to loosen some of the attachment of the malleus.

With "conservation of parts" as the watchword in this modified radical operation, we must bear in mind that the tympanic structures must be preserved; that the incus must not be loosened at its attachment in the sella incudis; that the incudostapedial articulation must be preserved intact; that the oval pelvis should not be touched unless it is absolutely necessary to do so; and that the vestibular articulation of the stapes must be preserved with great care. The intra-tympanic muscles, especially the stapedius, and their attachments, should be preserved.

After a thorough curettage the wound is syringed out with normal salt solution. The membranous canal is slit along its floor, carrying the cut through the cartilaginous meatus and a short distance into the concha. The periosteum is sutured with catgut sutures.

The meatal flaps are distended with gauze packing lightly applied inside Cargile membrane, but more tightly packed at the external orifice of the canal. The skin wound is closed by metal clamps and the external parts are painted with a 5 per cent. tincture of iodin. Then an absorbent dressing is put on. On the day following the operation, the packing is removed from the canal, iodin is applied on the external parts and the packing is replaced more lightly.

On the second day after the operation, the packing is again changed, the metal clamps are removed from the external wound and the patient sits up. On the fourth to sixth day the packing is wholly omitted. The bandage is usually removed in less than a week. No suppuration is expected at any stage of the convalescence and no external scar remains.

In order to promote the functions of the Eustachian tube, the nasopharynx always needs attention. Tympanic inflation is begun on the second day. Valsalva's method is used when practicable. If this method does not inflate, Politzer's method is used, and in default of this method, Eustachian catheterization is employed. This tympanic inflation serves to prevent unnecessary tympanic adhesions and promotes drainage. Exuberant granulations rarely appear; if they do they can be wiped away with a cotton applicator.

The canal sometimes needs local applications in order to promote dermatization. Boric acid or xeroform powder may be used to assure cleanliness. Stimulation by nitrate of silver or scarlet red salve is sometimes used to hurry epidermization of cicatrices. The convalescence should be complete in from seven to fourteen days. The necessity of individual cases of course causes a variety in the technique.

It has always been my interest and endeavor in performing a mastoid operation to conserve as much of the parts as possible, so that the greatest amount of hearing may be preserved for the patient, and the convalescence shortened. My operations for chronic middle-ear suppuration became, therefore, gradually more conservative of the membranous lining of the external meatus, of the Eustachian tube, of the walls of the tympanic cavity, and finally, of the ossicles and drum membrane.

This operation was performed at the New York Eye and Ear Infirmary, July 27, 1905, and was reported in my paper, "A New Instrument for Mastoid Surgery" (Case 1), which was read at the meeting, and published in the Transactions of the Tenth Annual Meeting of the American Academy of Ophthalmology and Oto-Laryngology, Buffalo, September 14-16, 1905, Transactions 1905, p. 117. This paper was also published in the Laryngoscope, St. Louis, Vol. XV, No. 10, October, 1905, pp. 796-801. This is the first published record of an operation of this kind.

The patient you see had left-sided chronic otitis media suppurativa of the intermittent type complicated by suppurative mastoiditis with bone disintegration. Watch not heard in left ear. A complete mastoid operation was performed, invading attic and tympanum. Closed wound with blood clot. Temperature normal after operation. Third day: Middle ear dry and nearly all posterior wound closed by first intention. Tenth day: Middle ear healed and posterior wound healed. Sixteenth day: Watch heard 13 inches—A. S. No pus or discharge since operation. Seven years later. A. D. Watch heard 12 inches. Operated ear. A. S. Watch heard 24 inches.

41 East Thirty-Third Street.

PARINAUD'S CONJUNCTIVITIS.

By JOHN S. KIRKENDALL, M.D.,
AND
CLIFFORD P. FITCH, M.S., D.V.M.,
ITHACA, N. Y.

In 1889 Parinaud described a rare form of conjunctivitis to which is ascribed his name. The salient points of this disease are first, that it is probably infectious, ushered in with febrile symptoms and chills and accompanied by an enlargement of the preauricular and sublingual glands, and second, that it is of animal origin. At first granular in form this disease later takes on its characteristic appearance of yellowish vegetations, which are semitransparent, later becoming opaque and attaining the size of a large pin head. Between these vegetations are small yellowish granules which suggest tuberculosis of the conjunctiva. These are located in the retrotarsal fold, on the tarsus or the globe. The cornea is unaffected. Mucous secretions and deposits of fibrin are formed, but no suppuration occurs. The lids become swollen and hard to the touch, feeling as though chalaza was present. Occasionally the glands suppurate. The course of the disease is from six to eight weeks.

The literature shows a large bibliography of which the major portion is quoted from a case reported by G. F. Keiper, of LaFayette, Ind., and read before the American Academy of Ophthalmology and Oto-Laryngology in 1910, to which are added four cases reported by Arganaraz, of Buenos Ayres, and my own case which I shall report, together with a carefully prepared report by Dr. C. P. Fitch, of the Department of Pathology and Bacteriology, New York State Veterinary College, at Cornell University.

C. F. B., of Horseheads, Chemung Co., N. Y., was referred to me by Dr. Willis King, of Newfield, N. Y., with the following history: A farmer, aged 28, good family history. Patient never had syphilis and had always been extremely healthy and strong. Four days previous to this visit to me, which was on April 22, 1912, he had called to see his physician, and complained of his right eye scratching and feeling as if there were sand in it. The eye was red and angry at the time and Dr. King prescribed an antiseptic lotion and told the patient that if the eye did not get better to call again. On April 22 the patient called again and

was immediately referred to me, and arrived at my office about 4 P.M. I diagnosed the case immediately as one of Parinaud's conjunctivitis. The eyelids and surrounding integument were extremely swollen and edematous and there was eversion of the upper lid as the result of the chemosis simulating gonorrheal ophthalmia. There was more or less exudate of a fibrinopurulent character. It was impossible to evert the lid to get a view of the fornix. The cornea, which was clear and normal, could be seen at the bottom of the well-like opening, about one-fourth inch in diameter, made by the extreme chemosis. The temperature was 99.2° F. The preauricular gland was extremely tender and about the size of a chestnut; there was also swelling of the surrounding tissues. The submaxillary and sublingual glands felt like lima beans. These were also quite painful to pressure.

The patient was sent at once to the City Hospital where iced cloths were applied every alternate hour and the eye was kept clean with the aid of an eye cup filled with a weak solution of boracic acid and zinc. The fever gradually abated. The chemosis and swelling of the lids and the tenderness of the glands subsided. At the end of two weeks the eye became much better and the cornea which was normal could be plainly seen. An ulceration of the lower palpebral conjunctiva took place at its center or at the apex of the chemosis. This yielded to calomel, but left at the end of about three weeks' treatment a slight symblepheron. When I was able to evert the lids there could be seen the characteristic granulations or vegetations described by Parinaud. The patient when last seen had some conjunctivitis and irritation. This, however, was gradually receding; in fact, was practically well.

April 23, 1912, the day following the admission of the patient to the hospital, a careful bacteriological examination was made. Antiseptics had not been used on the affected eye for eight hours preceding this examination, it having been kept clean with sterile water during this time. A considerable amount of exudate could be collected from the eye on the platinum loop at this time. Cultures were made from this exudate on agar, serum agar, bouillon and blood serum. Anaërobic cultures were made in serum agar. In making these cultures care was taken to draw the sterilized loop over the swollen lid and not to inoculate the fibrinopurulent exudate collected at the inner canthus. Smears of the exudate were made on glass slides. The cultures were incubated at 37.5° C. Duplicates were likewise incubated at 20° C. After 24 hours the agar and blood serum cultures which were placed at the higher temperature showed several small round colonies which on microscopical examination proved to be micrococci. The cultures left at 20° C. showed nothing at this time. The anaërobic cultures were likewise negative. Continued incubation of the cultures developed nothing but micrococci. These were later identified as *Staphylococcus pyogenes aureus* and *albus*. The smears made directly from the exudate were stained in a variety of ways and examined microscopically. Those stained for tubercle bacteria failed to show any acid-fast organisms. Wright's, Jenner's, and Loeffler's alkaline methylene blue stains were likewise used on several smears, and when examined showed many leucocytes, some fibrin, and an occasional micrococcus. Organisms resembling the gonococcus were not observed.

These bacteriological findings agree with those reported in other cases of this rare and but little known disease. To quote from Keiper's paper: "To date the examination of tissue and discharge for a specific bacterium, as a probable cause has been fruitless; and, as Alt remarks after the examination of a case of Barck's, 'I was absolutely unable to stain any particular organism. If there is one it is too small to be seen by our present means.' Often the staphylococcus and *B. xerosis* are found. The streptococcus has been found by Rohmer and Villeneuve. Gifford reports that in an examination made in three of his cases nothing was found that was not of secondary importance. Stirling and McCrea report finding a bacillus resembling the Klebs-Loeffler bacillus. This was found for twenty-five days while the patient was under active treatment. The impression received by these investigators was that they were dealing with a less toxic form of the diphtheria bacillus or with a virulent form of the xerosis rosæ bacillus which is recognized as inoccuous to the eye. Kornel-Scholtz, reporting a case resembling this disease, isolated what he believes to be the specific organism. Cultures made from nodules showed a small bacillus four times from five cultures. It was from 0.5 to 1.5 microns long and in chains of fives and sixes. It was negative to Gram. He also found it in smears from the lymph glands, though he could not cultivate it on the various media. It was pathogenic for mice and chickens. The corneæ of guinea pigs inoculated with the germ showed a diffuse opacity which cleared up in a few days. According to Axenfeld, the bacillus was very like the *B. gallinarum*, and belonged to the group of the polar staining bacteria, like those of plague and hemorrhagic septicemia. Auerbach found the pneumococcus in the pus of a large preauricular gland. He considers infection from animals doubtful and regards the necrotic areas of Verhoeff and Derby, and the plasma cells of Matys of no special significance. Claiborne in the report of a case states that he could find only *Staphylococcus pyogenes aureus*.

"Inoculation experiments were made on rabbits by Gourfein, Sinclair, and Shennen with negative results. The staphylococcus was the only organism recognized. The same writers in reporting another case found two varieties of the white staphylococcus from the necrotic areas of the conjunctiva, while from the glands of the neck were isolated *Staphylococcus albus* and *aureus*. From a sinus was obtained the streptococcus. Barck reports a case seen December 21, 1908, the excised follicles and smears of which he submitted to miscroscopical examination. The results were negative in all respects as to the presence of any specific bacterium."

That this disease is infectious there can be no doubt. However, we must admit that as yet the nature of the contagion is unknown. Parinaud believed the disease to be of animal origin. It so happened that his first three cases had all come in contact with animals. The thesis of Sans and Dominique lent additional weight to this view, since in all but one of their cases a similar history was obtained. Gifford was the first to cast doubt upon it, animal contact in his four cases being practically excluded. However, Hoor, reporting forty-four cases, believes that in two-thirds of them there was an opportunity for animal contact. One of Barck's cases was a telegraph operator with no such opportunity for infection. Webster from his case, a young lady, does not believe the disease to be of an-

imal origin. Parinaud suggested foot and mouth disease as the source of the infection. Acting on this suggestion, Chaillons brought one of his cases, the history of which gave some evidence of animal contact, to the laboratory of M. Nocard in the veterinary school at Alfort. The lesions did not impress Dr. Nocard as resembling those of foot and mouth disease. Inoculations of scrapings from the conjunctiva were made upon the mucous membranes of young pigs which are susceptible to foot and mouth disease, but with negative results.

The history of the case here reported has a very interesting connection with the theory of animal origin. The patient reported that for several months previous and up to the time of his infection he had been treating horses with "pink eye," and that one of his cows and her calf had had "sore eyes" which he had "washed out." The disease here referred to as "pink eye" is known under various names, as influenza, horse distemper, shipping fever, epizootic catarrh, etc. It is an acute infectious disease characterized by a rise in temperature and a catarrhal condition of one or more of the mucous membranes, especially of the head. One or more of the internal organs may be affected. It is a disease of horses, although asses and mules are susceptible, and a few cases are reported of its being transmitted to man and dogs. At present influenza is restricted to groups of symptoms and lesions in the horse that are not very unlike those of *la grippe* in man. A severe affection of the eyes is quite a constant characteristic symptom of influenza. At first it consists chiefly of a catarrhal and later of a phlegmonous conjunctivitis with considerable swelling of the lids (chemosis) which may be followed by parenchymatous keratitis and possibly by an exudative or hemorrhagic iritis. *Usually both eyes are affected.* The mucous membrane of the eyelids is glassy, edematous, and often projects outward between the lids in the form of an orange-colored protuberance. Often these inflammatory changes of the eye disappear in a strikingly rapid manner. Often, however, they lead to the formation of catarrh and occasionally to blindness from the detachment of the retina and opacity of the vitreous humor. The etiology of influenza is still in doubt. A number of bacteriæ has been described as the probable cause, but thus far none of them has been found to be sufficiently constant to warrant its acceptance as the etiological factor.

It will be noted that Parinaud's disease and the so-called "pink eye" in animals have certain symptoms in common, but there are so many wide differences, as, for example, the binocular character of pink eye, the monocular infection of Parinaud's disease, and the severe sequellæ of "pink eye" that there is no good reason to consider them related. It is interesting to note that the etiological factor of each disease still remains undetermined. There is not, however, any good proof upon which to base the statement that Parinaud's disease is of animal origin. It would seem as if there were two possibilities as to the nature of this disease: first, that it is a specific infectious disease, the cause of which has not been discovered; second, that it is a simple pyogenic infection manifested by the previously described symptoms. There are several facts supporting this latter view, for example, its sporadic character and the bacteriological findings. However, much further study must be devoted to the disease before a positive opinion can be given.

Summary.—(1) Parinaud's disease may occur at any time in this country. (2) It is a disease the etiology of which is undetermined. (3) It responds readily to treatment and usually complete recovery takes place in from three to six months. (4) The theory of its animal origin seems to be supported on insufficient evidence. Taking into consideration the reported cases it must not, however, be entirely ignored.

BIBLIOGRAPHY.

1. Agabahoff: "Parinaud's Conjunctivitis," *Annales d'Oculist,* Oct., 1895, p. 330.
2. Arganaraz: "Estudio clinico, bacteriologico e histopathologico de la conjunctivitis infecciosa de Parinaud," *Semana Medica,* Buenos Aires, April 4, xix, No. 14, p. 649.
3. Auerbach: "Parinaud's Conjunctivitis," *Annales d'Oculist,* cxii, p. 310, 1909.
4. Barck: "Two Cases of Parinaud's Conjunctivitis," Trans. Am. Acad. Ophthal. and Oto-Laryng., p. 196, 1908.
5. *Ibid.:* "Parinaud's Conjunctivitis," *Week. Bull. St. Louis. Med. Soc.,* 1909, iii, p. 245.
6. *Ibid.:* "Parinaud's Conjunctivitis," *Am. Jour. Ophthal.,* May, p. 151, 1909.
7. Basseres and Poujol: "Infectious Conjunctivitis of Parinaud," *Annal. d'Oculist,* xxxix, p. 161, 1908.
8. Bayer: *Cor. Bl. d. ver. Deutsch. Aerzte,* xx, Nos. 4 and 5.
9. Bernheimer: "Ein Beitrag zu Parinaud's Conjunctivitis," *Klin. Monatsbl. f. Augenheilk.,* 1906, S. 253.
10. Bondi: "Case of Parinaud's Conjunctivitis," *Wiener med. Wochenschr.,* 1908, No. 18.
11. Caspar: "Ein Fall von Parinaudsche Konjunctivitis," *Centralb. f. prak. Augenheilk.,* 1905, Dez.
12. Castel: "Lymphadenome de la Conjunctive," *France Méd.,* 1894, Nr. 4, p. 56.
13. Chaillous: "Contribution à l'étude de la conjunctivite infectieuse de Parinaud," *Annal. d'Oculiste,* 1904, p. 5.
14. Claiborne: "Parinaud's Conjunctivitis," *Arch. Ophthal.,* 1905, p. 82.
15. Darier: "Conjunctivitis de Parinaud," *Clinique d'Ophthal.,* 1903, p. 304.
16. De Hene and Balliart: "Five Cases of Parinaud's Conjunctivitis," *Rev. d'Ital. di Ottalm.,* iv, Feb. 2, 1908.
17. Demicheri: "Conjunctivitis de Parinaud," *Arch. de Oftalm. hispan,* 1906, p. 24.
18. Despagnet: *Revue d'Opth.,* 1896.
19. Dominique: "De la conjunctivite infectieuse d'origine animale," Thèse de Paris, 1897.
20. Dunn: *Virginia Medical Semi-Monthly,* 1904, Dec. 9, p. 402.
21. Ellett: *Ophthal. Rec.,* 1905, Jan., p. 41.
22. Fuchs: "Lehrbuch der Augenheilk.," 1903, p. 126.
23. Gifford: "Five Cases of Parinaud's Conjunctivitis," *Am. Jour. Ophth.,* 1898, p. 193; also Trans. W. O. O. L. Soc., 1898.
24. Goldzieher: "Lymphadenitis conjunctivæ," *Centralb. f. Aug.,* 1882, p. 821.
25. *Ibid.:* "Das Lymphon der Conjunctiva," *Wiener med. Woch.,* No. 32, and *Med. Chir. Presse,* 10, 1893, and *Centralbl. f. Aug.,* 1893, p. 112.
26. *Ibid.:* "Über die sog. Parinaudsche Krankheit," *Ungarisch, Szemeszeti lapek.,* 1904, Nr. 19.
27. *Ibid.: Centralbl. f. prakt. Augenheilk.,* Jan., 1882, 1893, 1905.
28. Gourfein-Weit: "Parinaud's Infectious Conjunctivitis," *Rev. Gen. d'Ophthal.,* Feb., 1907.
29. Griffin: "An Instance of Parinaud's Conjunctivitis," *Ophth. Rec.,* 1905, p. 215.
30. Hoor: "Die Parinaudsche Konjunctivitis," *Szemeszeti lapek,* Nr. 1, and *Klin. Monatsbl. f. Augenheilk.,* 1906, S. 289.
31. Joqos: "Un cas de conjunctivite infectieuse de Parinaud," *Clinique Ophth.,* 1903, p. 303.
32. Keiper: "Parinaud's Conjunctivitis," Trans. Am. Acad. Ophth. and Oto-Laryngology, 1910, p. 154.
33. Kornel and Scholtz: "Über eine der Parinaudsche Konjunctivitis ähnliche Bindehauterkrankung mit positiven bakteriologischen Befund," *Arch. f. Augenheilk.,* 1905, liii, S. 40.
34. Krauss: "Parinaud's Conjunctivitis," *Annal. Ophthal.,* 1907, Jan.
35. Lawson: "Parinaud's Conjunctivitis," Trans. Ophthal. Soc. U. K., vol. xxviii.
36. Lazareff: "Parinaud's Conjunctivitis," *Viesnik Ophth.,* xxvi, p. 16.
37. "A Case of Parinaud's Conjunctivitis," *Viesnik Ophth.,* Jan., 1904.

38. Lille: "On Parinaud's Conjunctivitis," *The Ophthalmoscope*, 1906, p. 681.
39. Matys: *Zeitschrift f. Augenheilk.*, 1904, Oct., S. 557.
40. Miller: "Parinaud's Conjunctivitis," *Ophth. Rec.*, Oct., 1898, p. 502.
41. Morax and Marsoulin: *Récueil d'Ophth.*, Nov., 1903.
42. Moss: "Parinaud's Conjunctivitis," *Texas State Jour. Med.*, Sept., 1907.
43. Oppenheimer: "Parinaud's Conjunctivitis," *Deutsch. med. Wochensch.*, No. 44, 1908.
44. Parinaud: *Récueil d'Ophth.*, 1889.
45. Posey: "Parinaud's Conjunctivitis," *Ophth. Rec.*, 1904, p. 511.
46. Posey: "A Case of Parinaud's Conjunctivitis," *Am. Jour. Med. Soc.*, 1905, Feb.
47. Reis: "Über die Parinaudsche Konjunctivitis, zugleich ein Beitrag zur Plasma Zellenfrage," *v. Graefe Arch. f. Ophth.*, lxiii, S. 46, 1906.
48. Rohmer: *Annal. d'Oculist*, 1894, T. iii, p. 360.
49. Sanap: "Thèse de Paris."
50. Salva: *Dauphene Médical*, 1904, xxviii, p. 61.
51. Schalinci: *Clinica Oculisca*, 1909, Oct. and Nov.
52. Schoeler: *Deutsch. med. Wochenschr.*, 1908, p. 331.
53. Schoeler: "Ein Fall von Parinaudsche Konjunctivitis," *Centralbl. f. prakt. Augenheilk.*, 1906, S. 362.
54. Sans: "Sur une forme particuliere de conjunctivite infectieuse semblant se rattacher à un antage animal," Thèse de Paris, 1890.
55. Shoemaker: "Parinaud's Conjunctivitis," *Am. Jour. Ophthal.*, 1906, p. 362.
56. Sinclair and Shennen: "Parinaud's Conjunctivitis," Trans. Ophth. Soc. U. K., xxviii, p. 261; also vol. xxvii, p. 39.
57. Spratt: "Ein Fall von Parinaud's Konjunctivitis, verbunden mit Erythema nodosum und Tonsillitis," *Arch. f. Augenheilk.*, lvi, S. 379, 1906; also *Arch. Ophth.*, 1906, March and May.
58. Stirling and McCrea: *Montreal Med. Jour.*, 1904. Vol. xxxii, p. 575.
59. Stirling and McCrea: "A Case of Parinaud's Conjunctivitis, with Pathological Report," *Ophthal. Rev.*, 1904, p. 511.
60. Steatford: *Lancet*, 1904, Oct. 15, p. 1107.
61. Thompson: "Parinaud's Conjunctivitis," *Ophthal. Rec.*, 1904, p. 512.
62. Verhoeff and Derby: *Arch. Ophthal.*, 1904, vol. xxxiii, No. 4; embraces cases of Sans, Kalt, DesPagnet, Roche, Parinaud, Joques, Challous.
63. *Ibid.: Klin. Monatsbl. f. Augenheilk.*, 1905, xliii.
64. Villeneuve: "Thèse de Paris," 1896, p. 95.
65. Von Boguaz: *Wiener klin. Wochenschr.*, 1907, p. 181.
66. Webster: "Parinaud's Conjunctivitis," *Med. Times*, June, 1909.
67. Werner: "Lymphoma of the Conjunctiva," *Ophth. Rec.*, 1904, p. 81.
68. Wilder: "Parinaud's Conjunctivitis," *Annals Ophth.*, 1908, p. 397.
69. Wolff: *Arch. Ophth.*, 1907, p. 71.
70. Wolflin and Ruprecht: "Histology of Parinaud's Conjunctivitis," *Klin. Monatsbl. f. Augenheilk.*, 1909, March, p. 247.
71. Wylie: *Ophthalmic Record*, June, 1901, p. 284.

Cornell University.

X-RAY THERAPY.*

By HOMER E. SMITH, M.D.,

NORWICH, N. Y.

It is an interesting speculation as to what is due the efficacy of the *x*-ray in the treatment of malignancy and other diseased conditions. One may go back to the ultimate origin of things for basis of a theory, and the working out of this will draw upon the physics of matter in all its relations. The subject is so interesting that I cannot forbear a few words before taking up the practical side of *x*-ray therapeutics. The modern definition of matter is "A vortex whorl in a perfectly elastic medium." Stripped of technicalities this means that all matter, organic or inorganic, solid, liquid, or gaseous, is simply the expression of molecular activity and that its form is dependent upon the mode of motion, its amplitude, and the rate of vibration. The properties of matter also, such as chemical, photic, actinic, electric, or magnetic, are simply the results of etheric vibration and any one may be converted into either of the others.

What we call life is a phenomenon of cellular activity and is not confined alone to what has been termed the organic. The vital tendency of the cells is infinite, of their aggregation the trend is somatic death, so whatever may be the nature of a malignancy, the cell itself reverts to the embryonal type of excessive proliferation, and somatic death occurs by the drain this makes on other vital processes or by the absorption of toxins from broken down tissues. It is most probable that all matter is simply the allotropic expression of one element and that the protomolecule is the union of the positively and negatively electrified etheric corpuscle.

Inasmuch as the living cell, regarded as matter, is simply a vibration, one can understand if for any reason its amplitude or form of motion were altered, then would ensue changes in its physical properties, and atrophy or hypertrophy result. The germ of the cancer cell has been sought in vain and while it is not unlikely that the virulency of malignant growths may be enhanced by adventitious germ infection, it is most probable that the disease is caused by alteration in the molecular activity of the cell and most probable also, it can be, that this is brought about by some chemical change in the blood plasma. Whether in malignancy there is an increase or a decrease in the normal rate of molecular vibration one can only surmise, but it is probably decreased, so that when subjected to the bombardment from the high speed and ionized corpuscles from the *x*-ray stream the cell takes up again its proper rate and returns to a normal condition. The small amount of scarring after cure by radiation would seem to support this view. It is a curious fact that the *x*-ray alone is the only definite agency that unquestionably produces cancer. If as some assert, malignancy is the return of the cell to the embryonal type, it would seem that corroboration of this assertion is furnished by such *x*-ray lesions and is contraevidence of its humoral or microbic origin.

In the earlier days of experimentation with the Röntgen ray, little was known of its baleful effects and much harm was done to both patient and operator. It was not understood that with varying technique and dosage one of several distinct therapeutic results followed: viz., sedative, stimulant, irritant, or escharotic, and that a method suitable to one condition could not be indiscriminately applied to all. A leucocytosis may be induced and an accompanying erythrocytosis as a primary stimulating effect from radiation, or under intensive treatments a leucopenia and poikilocytosis. One may destroy all the hair follicles by prolonged radiation and induce baldness or by stimulating doses produce hypertrichosis. There are four factors in continuous radiation, the sum of which constitutes a dose or treatment; these are the distance of tube from patient, the duration of exposure, the state of the vacuum in the tube, and the amount of current which flows into it. To measure this dosage by any means, photometric, electric, or chemical, has proven so far to be unsatisfactory, and such dosage is in consequence largely a matter for the judgment of each *x*-ray

*I am indebted to Drs. F. R. Cook, George Pfahler, and others as authorities for part of the statements made in this article.

worker. It is a matter of the greatest importance that the proper values be given to these factors. For instance, in superficial growths a soft tube at two inches is of service, at twenty is practically useless. With deep-seated growths a tube of higher vacuum is most efficient at twenty inches and of little or no use at the lesser distance. The duration of treatment must be carefully graded, as it must not be forgotten that the effects of the ray are cumulative. Enlarged tuberculous glands which do not yield after a certain period become more resistant and more apt to break down as the treatment is continued. In the treatment of deep-seated cancer there may be first an improvement and later a marked increase in the rapidity of the growth, due to the failure of the operator to discriminate between the radically different impressions which must be made upon the malignant and the environing normal cells. Totally opposite effects may also be obtained, depending upon whether the rays are continuously applied or given by interrupted flashes. With the one we may get inhibition or destruction of cellular activity, with the other stimulation and regeneration. The regenerative effect is both local and general, and is accomplished largely through its action on the blood vessels. These flashes dilate the arteries and induce a natural and active hyperemia. They stimulate cellular metabolism without exhaustion and each subsequent stimulation is followed by an improvement in cellular vitality, a stepping up process as it were, made manifest in regeneration of tissue. This phenomenon has been accomplished in bone, nerve, muscle, glandular, vascular, and epithelial structures. In the eye it can be obtained in the cornea, lens, iris, chorioid, retina and optic nerve.

The local hyperemia induced by powerful *x*-ray flashes is too constant and too manifest to be open to doubt and explains the local regenerative action in diseases of chronic degeneration. With a high tube focussed over the chest and abdomen the pulse rate has been lowered ten beats and the blood pressure 10 mm. with a single instantaneous flash, with sixty such flashes a fall of 60 mm. and thirty-five in the pulse rate in a minute and twenty seconds.

In fatty degenerations and infiltrations a regenerative action is obtained. Lipomata have disappeared and cystic growths cured by their action. In the degenerations leading to fibrosis this regenerative action has been observed in many and varied conditions. The rapidity with which recent scar tissue becomes permeated with new blood vessels is at times almost incredible. In the treatment of chronic skin diseases intermittent rays often possess an advantage over the continuous application, and in tuberculous glands this form of treatment gives better satisfaction. An active hyperemia is first induced and then the treatment is suspended until this subsides. Following this line of treatment the glands do not break down or become unyielding, because there is no impairment or destruction of normal tissues. When we consider that practically every therapeutic effect which one may require in systemic or local action may be obtained by radiotherapy, it simply resolves itself into the selection of the modality and its intelligent application.

When we come to specific Röntgen therapy it is easier and better that we classify diseases suitable for such treatment under various headings. First, malignant growths. Here perhaps is the largest field of usefulness, and here must be reiterated that technique is everything. In general it may be said that superficial malignant growths are curable in 98 per cent. of the cases. In recent deep-seated cancer where surgery can reach it, a previous radiation to destroy outlying cells, operation, and postoperative radiation to prevent recurrence seems to be the best practice. As a primary method of treatment it is of doubtful expediency except when operation is refused, or is contraindicated, or when better cosmetic results may be obtained, when life is not threatened by delay or when the disease is already inoperable. Dr. Boggs of Pittsburgh has very recently reported twenty cases of inoperable carcinoma of the breast with an apparent cure in five. This is a result which will compare favorably even with operative and surgical cases. Dr. Bulkley of New York, in reporting on 400 cases of epithelioma, says in his conclusions, "By the proper use of *x*-rays we have a safe and, in cases that have not been grossly neglected or maltreated, a sure method of cure with the least amount of deformity." Again should be repeated, what is proper treatment for epithelioma is wrong for sarcoma or carcinoma, and what is right for either of the latter two is wrong for the other.

In gynecology its sphere of usefulness covers one of several conditions, such as the production of an artificial menopause and the application of this procedure in the treatment of uterine hemorrhage incident to the presence of myomata, and the so-called fibroid tumors of the uterine body. From radiation we may expect certain definite changes, as follows: The cessation of menstruation, a reduction in the myoma mass, the disappearance of the menstrual or intermenstrual bleeding, and the relief of pain. In cases where there is postclimacteric hemorrhage without the presence of myomata or intrauterine polypi relief also may be expected. In the matter of uterine carcinoma, it is not a rational procedure to use radiation as a primary measure.

These cases are purely surgical, but where a neglected case has become inoperable or there is extensive postoperative recurrence, then can pain and hemorrhage be partly controlled, life prolonged, and the patient given a larger measure of comfort.

Evidence in abundance has been published of the atrophic action of the *x*-ray upon the testicle and ovary, and there can result sterility without impotence. Therefore such radiation should be very guardedly used in young women or at any time when the question of continued fecundity is of importance. In the treatment of Basedow's disease (exophthalmic goiter) and in hyperthyroidism without exophthalmus much may be accomplished by proper Röntgen therapy and especially in those cases where there is marked hypersecretion without much enlargement of the gland itself.

The status lymphaticus, a condition of infancy, belongs in the same class of diseases as the above, namely, a hyperactivity of the ductless glands—in this instance, the thymus. These cases are characterized by enlargements of the lymphatics, with usually enlarged tonsils and adenoids, the thymus may be palpable, but its increase in size may certainly be outlined by percussion. These little patients are also feeble in constitution and have little strength. The spleen is enlarged. They have cough, stridor, and asthma. The diagnosis is complete when the blood

count is taken, for there is always a marked lymphocytosis. These patients take anesthetics very badly and most cases of death under anesthesia, induced for the removal of adenoids, are due to this status lymphaticus. The rapid disappearance of all symptoms under *x*-radiation is remarkable. The condition is comparatively rare, but this brief outline may be of help in the matter of diagnosis and to remind you that a blood count should be made before undertaking an adenoid operation in the very young.

Under the heading of dyscrasias of obscure etiology come two diseases in which *x*-ray therapy offers practically the only hope of amelioration or cure; these are leucemia and pseudoleucemia, or Hodgkin's disease. In the latter the outlook for a cure is better, and in the former certainly an improvement and prolongation of life. It would almost seem that the reason why cure is not effected lies in the technique, for all the symptoms can be made to disappear for a time and the blood picture returns to normal. Unfortunately after a period of apparent return to health a relapse usually occurs and death follows very soon; nevertheless, the patient can be given months of comfort and prolongation of life.

In tuberculous conditions success wholly depends upon the site of the invasion. In pulmonary tuberculosis and in this disease of the bones and joints little or no benefits have followed *x*-radiation. In tuberculous cervical adenitis it is practically a specific, providing treatment begins early and before there has been any breaking down in the glands. In the cutaneous tuberculides either the papular or ulcerative types or in the two forms of lupus, squamous and erythematous, it is practically certain of cure and is quicker and surer than the Finsen light. In diseases of the skin the parasitic types are very amenable to *x*-ray treatment. Tinea sycosis and tinea circinata yield readily, but there is a decided danger of producing a permanent alopecia. In blastomycotic infections it is of great assistance in the cure, but should be supplemented by the administration internally of potassium iodide in large doses. Psoriasis yields readily to *x*-radiation, but the various forms of eczema are not materially benefited. Perhaps no form of skin disease is so distressing to the patient as is the various types of acne, and here fortunately the *x*-ray is often curative and, best of all, the cure may be effected without scarring.

In conclusion, *x*-ray therapy is practically a specific in many chronic and inflammatory diseases of the skin. It is curative in 98 per cent. of all malignant and semi-malignant superficial growths. In the deep-seated sarcomatous or carcinomatous growths it may sometimes be curative. It is always palliative, it relieves pain; it is the handmaid of surgery where this is indicated, and should be used before and after operation. It is capable of inducing constructive metabolism and bringing about a return to health in many systemic conditions. It can lower the blood pressure, slow the pulse rate, and modify for good the cellular elements of the blood. These and many other properties it possesses, and when we consider that with it we may induce stimulation, sedation, inhibition, or destruction of cellular activity, we realize that its potentialities are many and beneficent. Nevertheless there lurks behind all these potentialities for good the constant element of danger, and only he who has mastered the intricate technique of *x*-ray therapy should be trusted with this subtle and potent agent.

THE SIGNIFICANCE OF SOME URINARY CONSTITUENTS.*

By J. BERGEN OGDEN, M.D.,

NEW YORK.

ASSISTANT MEDICAL DIRECTOR, METROPOLITAN LIFE INSURANCE COMPANY OF NEW YORK CITY.

It is my purpose to-day to discuss a number of subjects in connection with the urine, and in particular to point out to you the relative significance of some of the constituents of the urine which may have been considered of pathological importance, or the cause of some confusion in making decisions upon applications for insurance.

There is still a deeper purpose in giving you this paper and that is, that it may lead to a better understanding between the medical representatives of different insurance companies in deciding as to the fitness of an applicant for a policy.

We will first consider nucleoalbumin and some of the allied substances, and then devote some time to the consideration of albumin and casts. No pretense has been made to deal with any one of these subjects in its entirety, but I have endeavored rather to interpret in a brief way the meaning of a few of the substances which are not infrequently met with in the urine.

Nucleoalbumin.—It was only a very few years ago that nucleoalbumin was the cause of considerable confusion among insurance men. This confusion appeared to result partly because of the possibility of mistaking it for serum-albumin, and partly to a fear that it might have important pathological significance. When we consider that the urinary tract is a mucous surface and that every mucous membrane is capable of giving off its own secretion, and that such secretion is one of the forms of proteid, we can understand how a urine may contain proteid, either in soluble or insoluble form, which may not have pathological significance.

Nucleoalbumin is one of the nucleoproteids which is essentially a normal urinary constituent. When the mucous surface of the urinary tract is in a healthy state, the quantity present is extremely small, but if the mucous membranes are stimulated or irritated, the amount of nucleoalbumin is somewhat larger, but even then it is present only in very small quantity. We have no experimental or chemical data to show us that the nucleoalbumin of an irritated mucous membrane differs in any way from that of a perfectly healthy mucous surface, except in quantity.

Nucleoalbumin is apt to be much more apparent in the urine of a female than in the male, because of the mucous surfaces of the genitalia with which the urine often comes in contact. It is found also in larger quantities than normal in the urine of the new-born; in the urine after overexertion; after chloroform inhalations, and after injury to the kidneys and other parts of the urinary tract.

There should be no confusion between nucleoalbumin and serum-albumin. We know that nucleoalbumin can be separated from the urine by acetic acid only after getting rid of some of the urinary salts, particularly sodium chloride; in other words, as long as we have in the urine an excess of sodium chloride, there is no danger of getting a reaction for nucleoalbumin in the heat test for serum-albumin. Thus it is that we so strongly encourage

*Read at the 23d Annual Meeting of the Association of Life Insurance Medical Directors of America, held in New York October 9 and 10, 1912.

salting every urine with one-sixth of its volume of a saturated solution of sodium chloride before applying the heat test.

As to the pathological importance of nucleoalbumin, we believe that it has none. We cannot lose sight of the fact, however, that there are a number of other nucleoproteids that may get into the urine and which some day may be found to have some significance. At the present time, however, we need not concern ourselves with such substances as chondroproteids, phosphoglucoproteids and others.

Mucoids.—While there is a similarity between true mucin and nucleoalbumin, there is a chemical difference; in other words, when these two substances are broken up different products result. We are in the habit of using the term mucin in connection with shreds found in the urine, but these would better be termed mucoids or nucleoalbumin, for true mucin is a rare urinary constituent. The shreds and threads of varying size so commonly found in the urine in catarrhal conditions of the urethra and bladder, are, therefore, in all probability nucleoalbumin in an insoluble form, and they have no further significance than that they represent a hypersecretion of the mucous surface involved. These nucleoalbumin threads are most prominent in the urinary sediment during the late stages of gonorrheal urethritis, catarrhal disturbances of the bladder, and in the urine of a female who has a leucorrhea or some mild inflammatory condition in the genital tract.

Cylindroids.—In the urinary sediment we not infrequently come across cylindrical bodies with one or both ends rounded, which at first sight might be called casts, but upon close study will be found to be of varying diameter and to have fine lines running through them. Rarely these bodies may be formed in the kidney, but they are more commonly found coming from the prostatic ducts. The chief point about them is to distinguish them from true casts which form in the kidneys, and this can generally be done by careful focussing and by varying the light of the microscopic field. Occasionally it is necessary to let the body pass as questionable and be governed chiefly by the accompanying elements; for example, if true renal casts are found and no undoubted mucoid threads are present, the doubtful body may be a renal cast, but if no true casts are detected and there is evidence of irritation or disturbance in the prostatic region, the questionable body is what is generally termed a cylindroid. These cylindroids are in reality mucoids or nucleoalbumin in insoluble form and do not differ from the mucoid threads above referred to as coming from the urethra or bladder.

I am personally not in favor of the use of the term cylindroid, but rather to call them mucoid shreds, since they represent only the hypersecretion of a stimulated or irritated mucous membrane, whether in the kidney, the prostatic ducts, or some other part of the genitourinary system. These mucoid bodies in themselves have no special significance, for they may exist in the urine without accompanying elements and be found when the urinary mucous membranes are stimulated but otherwise in a healthy condition. When, however, they are present in large numbers they are usually accompanied by evidences of irritation or inflammation. Probably their most common occurrence is in very mild catarrhal conditions of the neck of the bladder and then they are usually accompanied by an excess of leucocytes and an occasional free red cell.

Those of you who have followed closely the developments in connection with urinary work in the past ten or fifteen years have no doubt been impressed with the refinements in technique and in urinary tests that have taken place and how the confusion that was once so apparent has largely disappeared. It is safe to assert that we are to-day getting into a frame of mind which permits us to take a sane view of our findings in the urine, and to interpret them with some degree of confidence. I regret to say, however, that there are some who are inclined to hold up their hands in horror at the sight of the word albumin. I cannot help feeling, and I believe that we shall soon have statistics which will bear me out in saying, that such an attitude is largely the result of prejudice, and to some extent fear.

Albumin.—Let us consider for a time the subject of albumin and its significance in the urine. I shall confine my remarks about albumin to the very small amounts and what I am personally in the habit of terming the "slightest possible trace." This amount of albumin is what the careful examiner in the field will report to you as a minute trace or a small trace; or he may use the word trace, but whatever the nomenclature it is the faint reaction that he obtains when he uses the methods and the technique prescribed by our Association.

We can all agree that the presence of serum-albumin in the urine is a danger signal, but we seem to differ as to its importance. Given a urine containing albumin it is expedient for us to find out to what it is due, and this is best accomplished by a careful microscopic examination of the urinary sediment.

For convenience we can divide the causes of slight albuminuria into two classes, viz.: (1) disturbances below the kidneys, and (2) disturbances or diseases of the kidneys.

By far the most frequent causes of a small amount of albumin in the urine of a male in the first class are very slight irritation in the urethra, at the neck of the bladder and in the bladder, such as may be seen many months or years after a gonorrheal infection, and after the elimination of a highly concentrated urine for several days. In the female, the presence of vaginal secretion in which there is almost always a small amount of free blood may lead to the presence of a small amount of albumin in the urine.

I do not believe that anyone would for a moment consider that the disturbances that I have just recited would in any way effect longevity, and yet those very conditions comprise nearly 70 per cent. of all urinary troubles found in applicants for insurance.

As to disturbance and disease of the kidneys, there may be some ground for apprehension. It is my firm belief, however, that by close study of the urine together with the clinical picture of a case, it is possible to distinguish between harmless renal disturbance and important renal disease. For example: A young man of good habits with a clean clinical and family history, an unobjectionable occupation, an average normal blood pressure, and of good average weight, applies for a policy. In his urine we find a normal specific gravity, relatively normal solids, an absence of sugar, a minute trace of albumin, and in the sediment rarely a cast of either the hyaline or granular variety or both, rarely a renal cell, and altered blood globule. This condition is evidently a slight temporary renal irrita-

tion or active hyperemia and of no more importance than a headache due to a temporary constipation. If subsequent urinary examinations are made it will be found that the casts have disappeared in the great majority of instances. Such an individual is, I believe, entitled to some form of insurance policy.

Casts. There is apparently a belief that a distinction should be made between the hyaline and the granular varieties of casts; that the hyaline casts indicate a grave condition in the kidneys, while the granular casts signify a less serious condition; or there may be those who contend that granular casts have much greater importance than those of the hyaline variety. After many years of close observation I am convinced that one variety has no more pathological significance than the other, except when there is a great predominance of casts of the hyaline variety.

The basis of all casts is a hyaline material having its origin in the tubules of the kidney, and when a hyaline cylinder is without adherent or imbedded granules, it is, of course, a pure hyaline cast, but most of the hyaline bodies that we find in the urinary sediment have a greater or smaller number of granules imbedded, when they must be considered either mixed hyaline and granular, or granular casts. Pure hyaline, mixed hyaline and granular, and granular casts are found in nearly every disease and disturbance of the kidneys and in varying numbers of each. When, however, the number of casts present is rather large and there is a great predominance of those of the hyaline variety, we may then suspect a chronic interstitial nephritis, a marked chronic passive renal congestion such as may be seen in extensive cardiac disease without compensation, or an amyloid degeneration of the kidneys. In the urine of the average person the presence of a pure hyaline cast or two has no more pathological importance than a like number of granular casts.

In conclusion I wish to enter a plea in behalf of the applicant for insurance. He has been refused a policy because of albuminuria. The question naturally arises what is the cause of the albumin in the urine and is the condition temporary or is it due to a long-standing process in some part of the urinary tract? In fairness to the applicant the nature of the urinary process should be determined in every instance and if, by studying his case for a time, the trouble has been found to have greatly improved or entirely disappeared, he ought to receive insurance. I refer particularly to those cases in which the urinary abnormality is the only impairment. I cannot help feeling that our medical discrimination in many of these cases of urinary difficulty has in the past been unfair to the applicant and I feel safe in predicting that, as a result of statistical data, the time is coming when we shall be willing to issue insurance to a large number of those who have had or still have slight urinary impairment.

Case of Fixation of the Left Half of the Larynx in a Woman.—H. F. Powell and L. Colledge report the case of a married woman, aged 58, who complained of hoarseness, which she had noticed for about seven weeks and which had not been getting better or worse. She had no pain nor other symptom. Her general health was good, with the exception that she had a cough. The left half of the larynx was quite immobile. The left vocal cord was a little red and swollen compared with the right. The pupils were active to light and accommodation, but the left was much smaller than the right. Examination of the chest revealed nothing abnormal.—*Proceedings of the Royal Society of Medicine.*

CONGENITAL STRICTURE OF THE URETER, PRODUCING PYONEPHROSIS; NEPHRECTOMY.

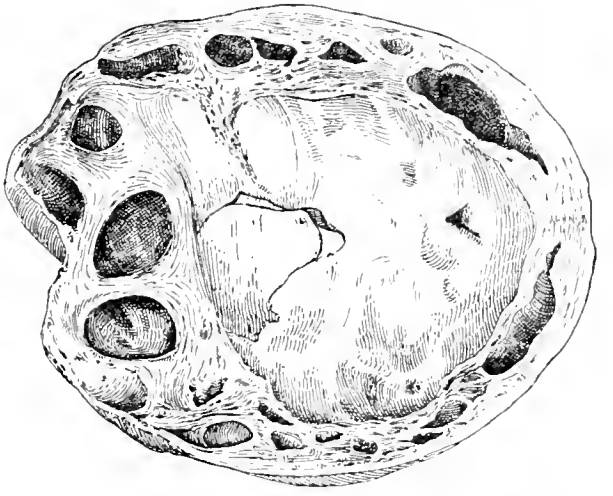
By L. MILLER KAHN, M.D.,

NEW YORK.

ASSISTANT SURGEON, LEBANON HOSPITAL.

Congenital stricture of the ureter producing hydronephrosis is of sufficient rarity to warrant the publication of a case in which the chief clinical picture was that of ileus due to an enormous pyonephrotic sac. In a scholarly paper by Bottomley (*Annals of Surgery*, November, 1910) there were reported but 58 cases, after a search of the literature. Of these cases there are but three, including the author's own case, "in which a successful removal of both cause and effect was possible." The case reported below permitted of the successful removal of both the strictured ureter and the pyonephrotic kidney.

Case No. 29441. B. I., aged 4½ years; admitted to Lebanon Hospital, service of Dr. Henry Roth, May 3, 1910; discharged cured July 10, 1910. Previous history: "Pneumonia and typhoid" two years ago, followed by limping in the left leg; this



Pyonephrosis of the kidney, produced by a congenital stricture of the ureter, in a child of four and one-half years.

limping was painless. Abdomen became prominent at that time and he has remained slightly "pot-bellied" since. Patient was in bed for four weeks at that time. Has limped slightly ever since. Bowels have been irregular.

Present illness: Two weeks before admission patient complained of pain in the left leg. Three days before admission complained of colicky pain in the abdomen and was put to bed. Next day vomited after taking castor oil. Catharsis was not effected. The pain continued and an enema was given which was also ineffectual. Abdominal enlargement was now noticed and the abdomen seemed to the mother to be hard. The child was at this time in great distress and was sent to the hospital.

Physical Examination: Child of normal height, fair color; poorly developed. Thorax normal. Lungs and heart normal. A mass is visible in the left iliac region and may also be felt in the left iliac region running up into the lumbar and left hypochrondiac areas. This is a large rounded firm mass occupying the greater part of the left side of the abdomen. In the right lower side a mass the size of an orange may be made out. All these are

immovable and do not change position on inspiration. There is no rigidity present, but the entire abdomen is markedly distended. Some limitation of motion in the left hip. Left leg slightly shorter than right. On rectal palpation a mass can be felt pressing down on the rectum. The rectum is empty. Blood count shows 36,600 white blood cells; 89 per cent. polymorphonucleus and 11 per cent. lymphocytes. Urine acid, sp. gr. 1010. Negative for albumen and sugar. Temperature 102° F., respirations 44, pulse 140.

An enema which was given soon after admission produced only partly satisfactory results, the fluid returning discolored and the patient expelling more or less flatus.

An operation was decided upon and was performed on the day of admission. Ether anesthesia. An incision was made in the outer side of the left rectus. On opening the abdomen I found a large mass, retroperitoneal, extending from well down in the left side of the pelvis up to the spleen and far over to the right side above, pushing the intestines into small space in the lower abdomen and pelvis. The mass was tense and the peritoneum smooth. It was decided, on account of the condition of the patient, to open into the mass in the quickest way, and the peritoneum covering the tumor was fastened to the anterior parietal peritoneum, thus shutting off the general peritoneal cavity. The posterior layer was now incised and the pelvis of the kidney opened, and about 1 quart of fluid was evacuated. The circular suture uniting the two layers of peritoneum was of Pagenstecher linen. The fluid, at first clear, became cloudy at the last with large flocculi. A finger in the kidney pelvis now palpated a very large cavity with what was felt to be trabeculæ at one side. Drainage tubes were inserted and the muscles and skin closed around them.

Examination of the fluid showed a large number of pus cells.

The recovery from the operation was prompt, the dressing becoming slightly saturated on the third day. Seven days after operation it was first noticed that the moisture on the dressing had a urinous odor. It was hoped that, if the fistulous opening were permitted to close, the urine would again be discharged into the bladder. On two occasions the drains were withdrawn, but the kidney pelvis filled again and the temperature rose to 102° F. This proving unavailing, nephrectomy was decided upon.

Operation June 22; ether anesthesia. An incision was made in the left loin, at the outer border of the quadratus lumborum, from the twelfth rib downward and outward to the crest of the ilium. A large adherent sac was found occupying the entire retroperitoneal area and extending far over to the right. The peritoneum was now opened purposely and an attempt was made to palpate the right kidney. This was unsuccessful. The opening in the peritoneum was now closed, but as it was necessary to establish the presence of the right kidney, an opening was made in the right loin, which exposed the right kidney, normal in appearance. This opening was closed in layers and dressed. The left kidney sac was now freed from adhesions, and the ureter and blood-vessels were tied separately with heavy catgut ligatures. The remaining end of the ureter was fastened in the lower angle of the wound. There remained only the fistulous opening in the anterior abdominal wall to be cut away, which was easily done from the posterior wound and the kidney sac was removed. A cigarette drain was inserted into the opening in front and passed into the retroperitoneal space. The posterior wound was closed in layers and a small cigarette drain placed in the lower angle. Recovery was uneventful, the drains being removed on the fifth day.

The patient was seen one year after leaving hospital and health continued good. The specimen removed showed an enormously dilated kidney pelvis. The normal conformation of the papillæ is flattened and the cortex as well as the medulla, while very thin, are burrowed in every direction by cavities which give the kidney substance a trabeculated appearance. At a distance of one inch below the junction of the pelvis with the kidney there is a narrowing in the ureter, which makes a distinct valve when seen from the inner side. On filling the pocket in the ureter above the obstruction with water none of the fluid passed the stricture. From the outside of the ureter the narrowing was restricted to the lower half of the circumference. There were no anomalous vessels observed, although they were looked for at the time. There were no bands outside the ureter to account for the valve formation. The infolding of the ureter at this point affected its entire thickness.

Comment.—The drainage of the pelvis of the kidney transperitoneally is not to be preferred, but its employment here served admirably and shortened the first operation by minutes when time was valuable. If the posterior peritoneal layer is made to adhere in a complete circle to the anterior layer, the retroperitoneal space may be safely explored or it may be drained by this route. This procedure added no difficulty to the subsequent operation of nephrectomy. No plastic work on the ureter was attempted as the kidney substance was destroyed.

The pyonephrosis is secondary to the congenital stricture of the ureter and the infection of the sac probably only took place at the time the child complained in its present illness. The previous illness, which resulted in a permanent limp, was probably poliomyelitis.

It is most necessary to be certain of the presence of a second kidney before removing one, no matter how diseased. Cystoscopy is usually sufficient, but in horseshoe kidney both ureters may come from the fused organ. Herringham (Kidney Diseases, London, 1912) shows a specimen from St. Bartholomew's Hospital Museum of a horseshoe kidney with two ureters. One-half of this specimen was hydronephrotic.

In the diagnosis, the history of intestinal obstruction confused the issue and megacolon had to be considered, as did tuberculous peritonitis. The urinary findings in ureteral obstruction may, as in this case, give no intimation of the condition present in the kidney. The absence of symptoms pointing to the ureter as the source of the trouble, particularly in an urgent case, makes a definite diagnosis of ureteral stricture before the operation extremely difficult. In the chronic cases the general employment of the cystoscopic examination and catheterization of the ureters, with collargol injection and *x*-ray plates, will aid in clearing up the diagnosis.

223 West One Hundred and Thirteenth Street.

POISONING BY SCARLET RED.

By HENRY H. M. LYLE, M.D.,
NEW YORK.
ASSOCIATE SURGEON, ST. LUKE'S HOSPITAL.

The clinical use of the dye scarlet red has amply fulfilled the promises of its early sponsors and is to-day the best epithelial stimulant that we possess. A study of the German literature shows how firmly it is established in that country. In America its warmest advocate is Davis of Johns Hopkins, through whose able efforts scarlet red has become more widely used.

In rare instances scarlet red produces a local wound irritation, a discoloration of the urine, and possibly an albuminuria. It is said that workers in aniline dyes are subjected to bladder irritation and the possibility of the formation of epithelial tumors. Aside from these suggestive hints the literature regarding the general toxic effect of scarlet red is very meager. There is only one reported case, that of Gurbski's; to this case the author wishes to add a personal one.

Gurbski in 1910 published a report on the toxic effect of scarlet red ointment. A child, aged eleven years, was severely burnt by an explosion of turpentine. The burns which were of the second degree involved the lower two-thirds of the right thigh and the entire lower limb to the ankle. Gurbski applied Schmieden's 8 per cent. "amidoazotoluolsalbe." Fifteen hours after the application the patient complained of headache and dizziness. This was followed by violent vomiting and gastralgia, cyanosis of the lips, a low-tension pulse of 110, a temperature of 102.3° and an albuminuria. With the removal of the dressing and the placing of the patient on a milk diet the symptoms disappeared in a few hours. Eight days later the ointment was again employed and similar symptoms appeared with the exception of the albuminuria. Five days later a third dressing produced similar symptoms but the vomiting was less marked. Subsequently the ointment was applied to one-quarter of the wound at a time. No toxic symptoms developed and rapid epidermization followed. Gurbski considered that this case had an especial susceptibility for this preparation, and that the poisoning was due to the amido group in the amidoazotoluol.

The author's case was that of a woman, fifty years old, who was admitted to St. Luke's Hospital February 21, 1912, suffering from extensive burns of the anterior chest, both forearms, and wrists. The burns were caused by exploding benzine, and were treated by the dry method until the sloughs separated. A scarlet red ointment (8 per cent. scarlet red in U. S. P. boric acid ointment) was applied to a small portion of the granulated edges. As the wound reacted kindly the area of application was extended. On the sixteenth day of the employment of the scarlet red ointment the patient complained of headache, dizziness, and general faintness. The following morning she was seized with severe cramp-like pains in the epigastrium, was intensely nauseated, and vomited violently. The pain was accompanied by tenderness in the upper right quadrant of the abdomen, the maximum point being in the region of the pylorus: the temperature rose to 102°; the pulse to 120; the blood count showed a slight leucocytosis; urination was frequent and painful, the urine showing albuminuria but no casts. Despite gastric sedatives and lavage the nausea and vomiting persisted for ten hours. The violent onset coupled with the pain and tenderness in the upper abdomen, suggested the possibility of a duodenal perforation. However the low blood count, the lack of abdominal rigidity, and the peculiar intensity of the nausea pointed to some form of poisoning rather than to a perforation. After the discontinuance of the scarlet red and the employment of repeated stomach and colonic washes the symptoms gradually subsided.

One week later the scarlet red was again applied to a small area, and gradually increased until two-thirds of the circumference was covered. The same toxic symptoms appeared, but of a milder degree, and again disappeared on the withdrawal of the scarlet red. After a second interval of rest the scarlet ointment was applied in a 4 per cent. strength; no further toxic symptoms developed. Throughout the treatment there were no signs of local wound irritation. Four months after admission to the hospital the patient was discharged cured.

In both cases the burns were extensive. In the first case, that of a child, the ointment was applied to a fresh wound and the toxic symptoms developed within a few hours. In the second case the patient was fifty, the ointment was applied to a granulating surface, and the toxic symptoms did not develop until the sixteenth day. The marked features of both cases were the dizziness, the gastralgia, and the intense nausea and vomiting.

Schmieden, commenting on Gurbski's case, emphasized the fact that scarlet red should not be used in fresh wounds, and in large granulating wounds only a thin layer of the ointment should be painted on the edges.

REFERENCES.

Davis, J. S.: "The Effect of Scarlet Red in Various Combinations Upon the Epithelization of Granulating Surfaces." Annals of Surgery, 1910, LI, pp. 40-51.

Davis, J. S.: "A Further Note on the Clinical Use of Scarlet Red and Its Component, Amidoazotoluol, in Stimulating the Epithelization of Granulating Surfaces." Annals of Surgery, 1911, LIII, pp. 702-716. (Bibliography).

Gurbski, St.: "Beitrag zur giftigen Wirkung der Scharlachsalbe." *Centralblatt für Chirurgie*, 1910, XXXVII, p. 1550.

Schmieden-Hayward: "Der heutige Stand der experimentellen und therapeutischen Verwertung der Scharlachfarbstoffe." *Deutsche Zeitschrift für Chirurgie*, 1912, CXII, p. 467. (Bibliography.)

50 EAST FIFTY-THIRD STREET.

THE PREGNANT WOMAN, TUBERCULOSIS, AND SAFETY.

By DOUGLAS H. STEWART, M.D.,
NEW YORK.

Scientific obstetricians, even if they allow theological teachings to influence their medical practice, will admit the fact that safety to the mother should preponderate against safety to the child, when it is possible to secure but one and that only at the expense of the other.

Suppose a consultation to be held and that two or three standpoints have been stoutly and rightly upheld. Suppose the standpoints to be religious, medical, and diplomatic and hopeless in argument. Is it not simple to cut the knot of this tied up consultation by quietly urging "safety" as the great factor in reaching a determination as to the proper course to be pursued? An appropriate remark might be: "Dr. A's idea of procrastination is 60 per cent. safe. Dr. B's plan is 65, but in Dr. C's plea for immediate

operation we have 70 per cent. of safety to the mother." This scheme or something similar will rarely fail to procure a good-humored and unanimous verdict, and the contestants part with the feeling that the plan adopted is the very best because it is the safest and any other way may or may not be equally sure. Should a woman suffering from tuberculosis become pregnant then a very easy emptying of the uterus would be 90 per cent. safe. On the other hand, allowing her to progress to full term always shortens her life. I would consider her 30 per cent. safe for her first labor, 20 for the second, and 10 for the third, giving figures based on my own experience; but Du Bois states that she "may bear her first child well, her second with difficulty, and the third never." While the 30 per cent. may be increased, but never to 90, because the latter is contingent on absence of demand and drain upon the mother's physical resources, the best we can do is to limit the damage and exhaustion arising from unavoidable conditions which no one may eliminate from the development of a child *in utero*.

It is a downhill road from emesis to delivery with the demand for twelve (or more) pounds of solid material, to be supplied to womb and contents, to be met on the journey. A hydremic or plethero-anemic woman may go the whole distance and endure the pain and strain of parturition at its terminus, but a tubercular anemic, not more anemic but less plethoric than the first, may pause to die because she has not the fee to pass some toll-gate. Her vital resources have been all paid out. I think we can make her safety, say, 60 per cent., but ninety as aforesaid is unattainable. It is just thirty years (Oct. 1, 1882) since I carried my first tuberculous patient to successful labor. Many of the suggestions here set forth were part of my student education; they have been tried and not found wanting, and I would be glad to give credit for them, but unfortunately that is now impossible. For instance, somebody told me if you "have a tuberculous patient, give him the gout." I think it was William Detmold, but am not sure. However, I will give experience and make no attempt at tracing derivations or sources. A Spanish physician told me of the "only wine which would make an appetite," and I do not even recall his name. From the above, it is evident that the rule for dieting the tuberculous mother is as simple as it is important. Make a composite list of the usual sheets for debility, for obesity, and for gout. From the second and third slips remove the word "not" so that the directions will read "Must take." Order the patient to eat anything on the three lists which seems to agree with her. Then make her so hungry that she is ashamed of her appetite, or, in other words, supernourish her.

If she is not prejudiced against wine, Manzanilla will make her hungry. It is a light, bitter sherry. It has proved successful only if bottled in Spain. Wine dealers all assure me that the same wine is imported in casks and bottled in America. It has failed me every time I have been persuaded to try it. Manzanilla is cheap, is also called the "tonic wine of Spain," and there seems to be no choice between different Spanish bottlings. This with creosote, with sulphur, with iodoform, and with ichthyol, in about that order, has always given satisfactory results.

Many experiments finally resulted in 1892 in the following formula: Lysol, one part; ichthyol, ten parts; glycerin, twenty parts, with the wine in addition. Lysol was adopted at first as a substitute for tar (see Ringer's "Therapeutics," 1883); later it was retained because of the enormous appetite which it created. The combination has been found fault with on chemical grounds, incompatibility, etc. It It may be condemned by the chemist, but the usual complaint of the patient is that it makes her eat like a truck-driver, and if she is pregnant and does not gain twenty ounces per week or non-pregnant and does not increase her weight by eight ounces, then I am both surprised and disappointed, and suspect late hours, disobedience of orders, or something similar, which so far has always materialized with cross-examination. The ichthyol was substituted for creosote. Some one told me that it might be so used diluted with equal parts of peppermint water. I have always been afraid that each new bottle opened might contain the irritating sort. But nothing untoward has ever occurred, possibly because I always made the mixture myself. The mixture may be given in drachm doses without fear if well diluted, but that is simply a waste of medicine, as the effect desired appears to be manifested quite as well by half-drachm dosage. The ideal mode of administration is to begin with one drop, increase one drop per dose until thirty drops are attained and hold it there. Drop it into a half-tumblerful of water and take just before each meal, when first sitting down to the table.

Important questions of fresh air, exercise and all expedients of value in tuberculous conditions are taken for granted and omitted from this paper, which deals with a valuable addition to any plan of treatment.

Summary.—The safest procedure is to empty the uterus at the earliest possible moment. If for any reason this must not be done and the child is to be carried to delivery, I have endeavored to show how it may be done. Not safely, no, but with a high percentage of safety.

128 West Eighty-sixth Street.

Mode of Death of the Human Heart.—G. C. Robinson studied this subject by means of the electrocardiograph. He found that in acute infectious diseases cardiac activity sufficient to give a definite record with the electrocardiograph may continue in the human heart for some minutes after clinical death has occurred. In the seven cases described the cardiac activity continued from six to thirty-five minutes after all the usual clinical signs of death had occurred. In four cases the ventricular outlasted the auricular activity; in two cases this was reversed; and in one case the two parts of the heart seemed to cease synchronously. Marked slowing of the rate of cardiac activity always occurred and there was usually distinct delay in the conduction time between auricles and ventricles. Complete dissociation was seen in three cases. Ventricular fibrillation occurred in two cases, in one of which the ventricles again established a regular rhythm. Evidence of auricular fibrillation was never seen. Characteristic changes in the ventricular electrical complex occurred in all cases. They consisted of a decrease in the size of the R-wave and an increase in the size of the T-wave, and a tendency to a fusion of these waves. There was usually but little change in the duration of the ventricular complexes as the cardiac activity gradually ceased. The foregoing observations indicate that when death occurs from an acute infectious disease there is no one point in the human heart which may be considered as the "ultimum moriens."—*Journal of Experimental Medicine.*

MEDICAL RECORD.

A Weekly Journal of Medicine and Surgery.

THOMAS L. STEDMAN, A.M., M.D., EDITOR.

PUBLISHERS

WM. WOOD & CO., 51 FIFTH AVENUE.

See fourth page following reading matter for Rates of Subscription information for Contributors and Subscribers.

New York, November 16, 1912.

THE PITUITARY BODY AND ITS DISORDERS.

THIS subject is one that possesses a peculiar interest. The remarkable additions to the knowledge of the functions of an organ sheltered in one of the most inaccessible parts of the body, and the recognition of its relationship to a large number of morbid conditions, constitute some of the most signal triumphs of modern research. Most wonderful of all is the demonstration of the success attending surgical access to this organ.

No one has made a more thorough study of the experimental and surgical problems associated with the hypophysis than has Harvey Cushing. For this reason the recent volume* in which this worker has set forth the present status of the hypophysis and of its derangements, is one that constitutes a unique addition to medical literature, and chiefly because it details the results of original observation. Few of the many volumes that are annually added to the shelves of the medical library will stand this acid test of originality.

The most remarkable fact about the hypophysis is the variety of avenues through which it has been investigated. The autopsy, the exploratory operation, the observation of cerebral manifestations due to an enlargement of the hypophysis, or to infiltrations of the brain associated with these enlargements, the recognition of the association between diseased conditions of the hypophysis and such clinical entities as gigantism, acromegaly, Fröhlich's syndrome, adiposity, and glycosuria; radiographic studies of the skull and of the acral extremities; and chemical analyses of the urine, the blood, and the cerebrospinal fluid; all these represent the lines of research converging on the hypophysis. It is quite probable, as Cushing points out, that clinically recognizable pituitary disease is at least as common as clinically recognizable thyroid disease, and that in the case of both organs there are low grade functional disorders that are usually unrecognized.

Considerable light is thrown upon the rather confusing subject of dyspituitarism by Cushing's classification of the latter into five clinical groups. The first group includes those cases "in which not only the signs indicating distortion of neighboring structures, but also the symptoms betraying the effects of altered glandular activity are outspoken." In the second group "the neighborhood manifestations are pronounced, but the glandular symptoms are absent or inconspicuous." In the third group are comprised those cases "in which neighborhood manifestations are absent or inconspicuous though glandular symptoms are pronounced and unmistakable." To the fourth group belong "cases in which obvious distant cerebral lesions are accompanied by symptomatic indications of secondary pituitary involvement." The fifth and last group includes those cases "with a polyglandular syndrome in which the functional disturbances on the part of the hypophysis are merely one and not a prominent feature of a general involvement of the ductless glands."

It is important to recognize the fact that deficient and excessive hypophyseal activity produces in each case different clinical manifestations depending on whether the causative condition occurs during childhood or during adult life. Thus, hyperpituitarism during childhood or before the epiphyses are ossified, causes gigantism; when hyperpituitarism occurs later it gives rise to acromegaly. Hypopituitarism occurring in childhood causes adiposity with a persistence of both skeletal and sexual infantilism —which combination is known as Fröhlich's syndrome. When hypopituitarism arises during adult life it causes adiposity with sexual infantilism of the reversive type. An individual may at one time exhibit symtoms of hyperpituitarism and later symptoms of hypopituitarism, and in the transition stage he may show symptoms of both states.

One of the most important recent contributions to the study of the hypophysis has been the discovery by Cushing and his co-workers that hypopituitarism is associated with an increased sugar tolerance. This fact furnishes a diagnostic sign of eminent significance, particularly in the recognition of the possible hypophyseal origin of certain obscure conditions, in the determination of whether or not an hypophyseal overgrowth has undergone involution, and in deciding upon the need of administering hypophysis extract.

Cushing calls attention to the fact that remote intracranial lesions may lead to secondary disturbances in the pituitary body. Thus hypopituitarism may result from the deformation of the pituitary caused by a congenital hydrocephalus. There is cited a case of acromegaly of a year's duration, in which a large unsuspected cerebellar cyst confused the clinical picture. In another case a large endothelioma of the right hemisphere caused hydrops of the right ventricle and hypopituitarism. In this connection the question is raised that some cases of epilepsy may be of hypophyseal origin. An insufficiency of the posterior lobe may cause an undue excitability of the cerebral cortex. In the author's series of forty-three cases there were thirteen patients with existent hypopituitarism who showed epileptiform tendencies. This percentage he regards as too large to be purely accidental. "Many

*"The Pituitary Body and Its Disorders; Clinical States Produced by Disorders of the Hypophysis Cerebri." By Harvey Cushing, M.D., Associate Professor of Surgery, The Johns Hopkins University; Professor of Surgery (Elect) Harvard University. An amplification of the Harvey Lecture for December, 1910. With 319 illustrations. Philadelphia & London: J. B. Lippincott Company, 1910.

individuals," says Cushing, "supposed to be suffering from so-called genuine or essential epilepsy, present manifestations of a nutritional disorder—a tendency to adiposity and a high sugar tolerance coupled with a lowered temperature and pulse rate—closely akin to the constitutional state which characterizes hypophyseal insufficiency. In some of these individuals the administration of hypophyseal extract has served to moderate the seizures from which they previously suffered."

There is nothing in all surgery that seems so forbidding as the operative approach to the pituitary, nevertheless the splendid results obtained by the pioneers in this field justify the more frequent intervention of the surgeon in the class of cases in which an operative procedure holds out some hope of relief. In Cushing's series of forty-three patients sixty-one operations were performed with an operative mortality of 10 per cent. for the entire series. The operation of choice is the transsphenoidal operation through a median inferior nasal opening, reached by a sublabial incision and a submucous resection of the vomer, the turbinates being flattened but not removed. The chief purpose of operation is to afford relief to neighborhood symptoms, to diminish the manifestations of increased intracranial pressure, and to extirpate part of the gland in states of hyperpituitarism. It is suggested that in states of profound hypopituitarism it may be possible to implant a gland from another source.

The work of Cushing upon this frontier of surgery is a rare example of the happy combination of animal experimentation, clinical investigation, and surgical enterprise.

INFANT CONSULTATIONS.

At the Congress on Hygiene and Demography held recently in Washington two important papers were read by Dr. Janet Lane-Claypon of London and Miss Ellen C. Babbitt of New York City respectively, dealing with the movement for the education of mothers in the feeding and caring for their infants, and these have since been supplemented by a paper contributed to the *American Practitioner*, October 15, by Dr. Eric Pritchard of London. Dr. Lane-Claypon is Dr. Pritchard's first assistant in carrying out the work in Marylebone, and her description of the *modus operandi* was excellently given. Miss Babbitt's paper dealt more especially with the care of the expectant mother, which also now comes within the scope of the infant-consultation work at Marylebone.

In the paper by Pritchard a full account is given of the initiation, development, and progress of infant consultations in Marylebone. It is pointed out that in England there are no national or concerted efforts to reduce the high mortality among infants, and the paper in question represents an account of an individual experiment which during the past ten years has been in progress right in the heart of London in one of its most active and thickly populated boroughs. Twelve years ago in Marylebone there was an infant mortality of 190 per thousand births. When Pritchard and his coadjutors began their really serious work the infantile death-rate was 121 per thousand births, reduced from 190 by sanitary reform and sanitary reform alone. In 1906 then "a system of voluntary service in a municipal setting" was inaugurated. At that time an "Infant Consultation" was an experiment in England, and in order that it might prove a success Pritchard visited some of the best-known institutions in Belgium and on the Continent, borrowing from them some of their best points, which he incorporated with a number of new ideas. It would be impossible within the limits of an editorial article to explain the working of the scheme in all its details. Suffice it to say that the system is well organized and comprises health visitors and inspectors, while an important feature of the work is that the history of the infant is closely followed. As for feeding, all methods are used impartially. Whole milk, citrated whole milk, carefully home-modified diluted milk, specially modified milk sold at special dairies, condensed milk, and dried milk are all used, and mothers are taught how to prepare the food extemporaneously. Careful records are kept of the results, but no analysis of these has been made as yet. Breast feeding is, of course, insisted upon whenever possible, and is conducted on the most up-to-date and approved lines. The health visitors always follow up the cases and by periodical visits to the home see that the physician's instructions are carried out.

Owing to the efforts of Dr. Lane-Claypon there has been founded recently in Marylebone an "Association of Infant Consultations and Schools for Mothers." These schools for mothers not only teach mothers how to care for their infants, but also teach mothers and expectant mothers how to care for themselves—a very essential part of the education. The work indeed is mainly educational. So far as Marylebone is concerned, many health visitors and a small number of medical men and women have been educated in the science and requirements of infant feeding, and some degree of instruction has been given to every mother who has given birth to a child in Marylebone and who has stood in need of such assistance.

Such teaching spreads quickly. As Pritchard says, "It becomes, as it were, highly infective." Infant Consultations and Schools for Mothers are springing up almost like mushrooms in all the great cities of Great Britain, with results that so far have been remarkable. As Miss Babbitt showed in her paper there is room for this kind of work in all the big cities of America, specially is instruction required for future mothers, together with insistence from the educational standpoint upon the necessity for breast feeding. The tendency of mothers the world over appears to be to avoid breast feeding, and the tendency is to some extent encouraged by the multiplicity of artificial foods and to a lesser extent by the opportunities afforded for obtaining modified milks. The first aim and main object of infant consultations and schools for mothers are to preach the gospel of breast feeding, and therefore both should enlist the earnest assistance of all those who have the welfare of the human race at heart. It is encouraging to learn from Miss Babbitt that the movement in this direction is rapid in many cities of this continent.

THE CHILD AND THE PUBLIC SCHOOL.

The hydra-headed evil of child labor, which thrives wherever human greed and human poverty furnish the necessary pabulum, still flourishes, though not to the extent of a former generation, in the factory, the mine, and the tenement workshop. But the rule of the rod and the other tyrannies of the classroom have given way before the spirit of enlightenment that characterizes modern public school education. Nevertheless in the very complexity of the educational curriculum that has been evolved to meet the demands of the present day, one perceives the growth of an element of danger in the excessive strain to which the young children in many schools are being subjected.

The large public school of our cities presents for solution some of the most perplexing problems. The housing within one building of sometimes as many as three thousand children and then providing for their various needs entails a host of difficulties, of whose magnitude the inexpert public can have but little comprehension. The main drawback of the simultaneous teaching of large groups of children is the fact that in many instances this practice operates as an injustice to the individual child. The latter is all but sacrificed to the complex mechanical needs of a system.

It must be admitted that the public schools have made vast strides within the past decade. The introduction of physical and of manual training; the increasing attention paid to studies that develop the appreciation for art, literature, and music; the recognition of the importance of detecting the physical defects of school children; the improvements in the mechanical features of school life; the inauguration of open-air classrooms, school lunches, and special classes for defective children—all these point to a phenomenal progress in public school methods. The three "R's" of the modern school make for reason, righteousness, and recreation. There can be little doubt that most children of to-day enjoy their schoolwork.

But every new addition to the scope and program of the school has increased certain dangers that have always been associated with public school education. The crowding of the school syllabus imposes upon the teachers the impossible task of accomplishing the work imposed by the supervising officers without overburdening their young charges. The result is that the entire system of teaching force and pupils is subjected to the blighting effects of the administrative machinery. Individuality is crushed, a premium is placed upon the numerical demonstration of results obtained, and the efficiency of the entire school system is apt to be gauged by its material resources and its demands upon the budget.

The chief danger of the complex elaboration of the modern school is that it overlooks the infinitely more complex organization of the pupil. It is solicitous about the child's tonsils and adenoids, but it is oblivious to the delicate texture of the immature nervous organism. It inaugurates fresh-air classrooms and instals complex ventilating systems, but it does not hesitate to overcrowd many rooms beyond the limits of respiratory safety. It is quick to point out the bad effects of malnutrition, but it does little to relieve the moral and emotional starvation that is so common among the children. It readily discerns the pallid cheek and the tired eye, but ignores the fact that in many instances these are the result of the assignment of excessive home lessons. School authorities are prone to shift the entire responsibility upon the supposedly neglectful parent, and seem to forget that many of the ailments of the child and adolescent are the direct or indirect result of the stresses of school life.

The priceless influence of personal contact between teacher and pupil has all but vanished in the complex superstructure of modern public education. The inexorable grind of daily school tasks eliminates the cultivation of those graces of manner and refinements of emotion that are no less indispensable than the purely formal attainments. "Sweetness and light," the criteria of culture, find little place among the maze of studies that must be mastered.

SOME THERAPEUTIC APPLICATIONS OF HEXAMETHYLENAMINE.

Formaldehyde has long been known as a most useful antiseptic, and it has been practically employed on a large scale for purposes of disinfection. In the form of hexamethylenamine it has been shown to exhibit a similar activity in the human body when administered both therapeutically and prophylactically. Thus employed hexamethylenamine is found within a short time in the form of its decomposition-product, formaldehyde, in almost all of the bodily fluids. Under such conditions it has been demonstrated in the urine, the bile, the pancreatic juice, the saliva, the milk, the cerebrospinal fluid, in synovial, pleural, and peritoneal effusions, and in the circulating blood. On the basis of this knowledge the drug has been employed as both a therapeutic and a prophylactic agent in a wide range or disorders, and the results are detailed in an interesting communication by Dr. S. J. Crowe (Bulletin of the Johns Hopkins Hospital, September, 1912), who has had a considerable experience, both experimental and clinical, along these lines.

With a view of preventing intracranial infection hexamethylenamine was administered in thirty-five consecutive cases of fracture at the base of the skull, and in none did such a complication arise, whereas among thirty-five earlier cases of similar character treated without this preparation meningeal infection of one kind or another developed in nine. Again, of twelve cases of fracture of the cranial vault treated with hexamethylenamine two terminated fatally from meningitis, and recovery ensued in ten, while of eight cases of similar character treated without the drug death occurred as a result of infection in four. The drug proved of service also in a series of forty cases of hypophysis-tumor in which incision of the dura covering the gland was undertaken through the nose and sphenoid sinus; in cases of cerebrospinal fistulæ, in the presence of infections of the ear and of the nose, and in cases of poliomy-

elitis. It has further been employed in the treatment of other disorders of the respiratory tract, and in cases of epidemic cerebrospinal meningitis and of experimental meningitis. As a rule, the drug can be administered to adults in amounts of from 60 to 120 grains and more daily for four or five days or longer, without fear of complication, provided it be given in divided doses at frequent intervals and well diluted; or it may be dissolved in salt solution and allowed slowly to flow into the bowel drop by drop. In susceptible persons, however, even small amounts may cause painful micturition and hematuria and perhaps a cutaneous eruption.

Rationale of the Action of Yohimbin.

This substance has now been in common use in both human and veterinary practice for many years, and although it is not a pharmacoplial remedy, it is not a secret remedy and there seems to be no reason why it should not receive recognition in time as an official drug. Numerous articles continue to appear in regard to its pharmacodynamics, indications, overaction, and collateral action. The view that it exerts a selective action on the lumbar cord has doubtless been abandoned, for it is much more likely that it is able to affect the tonus of the smooth muscle in some manner, something after the manner of ergot and pituitrin. In the *Deutsche medizinische Wochenschrift* for October 17, Fritsch, in a brief communication, expresses his conviction that in some subjects it acts directly upon the involuntary musculature of the genitourinary tract. Such influence as it may possess over *protentia cœundi* may be explained by a tonic action upon the bladder, prostate, and neighboring organs. The author has been testing it as a general nerve roborant, with especial reference to commencing senility. He warns that in one instance it appeared to determine cardiac oppresson, so that the doses should not be too large.

The Clinical Congress of Surgeons.

The third annual session of the Clinical Congress of Surgeons of North America, held in New York during the week just closing, was in every respect an unqualified success and will undoubtedly rank as one of the most important events in the medical year. The attendance was notable, not only for its size (over 2,600 having been registered up to Thursday of this week), but also for the high standing of those constituting it, and the enthusiasm was in proportion to the attendance. The amount of clinical work, including laboratory demonstrations, done during the week was enormous, and the papers read each evening, a full report of which is published elsewhere in this issue, were of a superior order. Seldom, if ever, has any organization established itself so firmly as a permanent institution in so short a time, and much credit is due those who conceived and have so triumphantly carried out this idea of a clinical surgical congress.

Modern Rifle Wounds.—Professor Jedlicka of the University of Prague recently lectured in Vienna on his experiences in the campaign in the Balkan Peninsula. He considers the modern rifle a weapon which disables but does not kill. Of 670 wounded whom he had treated only two suffered amputation, and the rapid healing of the wounds was very remarkable.

News of the Week.

Mental Hygiene Conference.—The opening session of the Conference on Mental Hygiene was held in the great hall of the College of the City of New York on November 8, President John Finley of the college welcoming the members. Addresses were made by Dr. Lewellys F. Barker of Johns Hopkins University, president of the National Committee for Mental Hygiene, on "Unsoundness of Mind: A National Handicap"; by Dr. James V. May of the New York State Hospital Commission, and by Dr. George Canfield of the State Charities Aid Association. The exhibit in connection with the conference was opened on November 9, and both it and the sessions of the conference were continued during the week.

Resignations from Fordham.—Dr. James J. Walsh, dean and professor of nervous diseases and the history of medicine in the Fordham University College of Medicine, New York, together with seven other members of the teaching staff, resigned from the school on November 8, the resignations being accepted by the president of the University. It is said that the resignations were due to the failure of the university authorities to comply with certain demands of the American Medical Association in order to keep the school in Class A of medical colleges. This, however, is in turn denied by the university authorities, who have appointed Dr. William P. Healy, clinical professor of surgery, to succeed Dr. Walsh as dean, and have declared their intention of carrying on the school on its present lines. Those who have resigned, in addition to Dr. Walsh, are the following: Dr. V. E. Sorapure, professor of clinical medicine; Dr. William J. M. A. Maloney, professor of nervous diseases and physician-in-chief of the neurological hospital; Dr. Isidor Abrahamson, clinical professor of neurology; Dr. Horatio Storer, consultant director of museums; Dr. Benjamin Tilton, clinical professor of surgery; Dr. Siegfried Wachsmann, clinical professor of medicine, and Dr. Charles A. Elsberg, professor of neurological surgery.

Public Clinics.—The Department of Public Charities of the City of New York has issued the following orders and has communicated them to the Academy of Medicine. That on and after October 1, 1912, all clinics held in the amphitheater and operating rooms of the hospitals of the Department of Public Charities shall be open to duly licensed graduates in medicine and to the students in all regularly organized medical schools and colleges, and that tickets shall be issued by the secretary of the Department of Public Charities for distribution by the secretaries of the several medical schools and societies of New York, which will entitle the registered holders thereof to admission to these clinics.

Personal.—Dr. S. Adolphus Knopf of New York has been elected honorary president of the Medical Board of the Bruchesi Institute of Tuberculosis of Montreal, Canada, and consulting physician to the Institute.

Dr. M. Neustaedter writes, referring to a recent statement in the Medical Record crediting Dr. Simon Flexner with the dust theory of the transmission of poliomyelitis, that he was the author of this theory and that it was accepted by Dr. Flexner only after Dr. Neustaedter had proved its correctness.

III International Congress of Diseases of Occupation.—Arrangements are being made for

holding the meetings of this congress in Vienna, Austria, during the autumn of 1914. The program is in the hands of Dr. L. Teleky, Wien IX, Türkenstrasse 23, from whom particulars may be obtained.

Memorial to Dr. Roosa.—At the New York Post-Graduate Medical School and Hospital, on the afternoon of November 7, a memorial to the late Dr. D. B. St. John Roosa was unveiled with appropriate ceremonies.

Public Health Course.—The University of Kansas School of Medicine announces a course in public health and preventive medicine which will be required of candidates for the degree of M.D. This is the first time such a course has been made obligatory in a medical school.

Public Mausoleum.—The trustees of Fairmount Cemetery, Newark, N. J., are considering the erection of a mausoleum large enough to hold 1,000 bodies, in which crypts and vaults will be sold to the public.

Plague in Venezuela.—The State Department at Washington received notice on November 4 of the occurrence of a case of bubonic plague at La Guayra, Venezuela.

Disease in Constantinople.—It is reported from Constantinople that typhus fever, smallpox, and Asiatic cholera are prevailing there to an alarming extent among the citizens, the refugees from outlying towns, and the returning soldiers, whose resistance has been broken down by misery, starvation, and the sting of defeat. Sanitary regulations are no longer enforced and there is every reason to fear that all three of these diseases will soon become epidemic.

Centenarian Dead.—Mrs. Emma Rock, a negress of Red Bank, N. J., died on November 4, at the age of 104 years.

Vital Statistics.—During the week ending November 2 there were in New York City only 222 deaths of children under one year of age, the lowest number recorded for any week so far this year. At the first of November the total number of deaths of infants during the year was 570 less than the total for the same period of 1911, according to the records of the Babies' Welfare Association.

In the State of New Jersey there were during the month ending October 10, a total for all ages of 2,990 deaths, of which 328 were due to tuberculosis. This total is 60 less than the total for the preceding month, and 98 less than the average number of deaths per month during the year.

Free Pulmotor Service.—The Consolidated Gas Company of New York has notified all the hospitals of Manhattan and the Bronx that its emergency ambulances equipped with pulmotors for resuscitating persons overcome by gas, smoke, or electric shock are at the disposal of physicians who wish to use them, and that calls sent to the stations where the apparatus is kept will be answered immediately.

Harvey Society Lecture.—The fourth lecture of the Harvey Society for 1912-1913 will be given by Prof. George Neil Stewart of the Department of Experimental Medicine, Western Reserve University, on November 23, at 8.30, at the New York Academy of Medicine. The subject will be: "The Rate of Blood Flow and the Vasomotor Reflexes in Disease.

Visiting Surgeons Entertained in Brooklyn.—The University Club of Brooklyn, N. Y., celebrated "Physicians' Night" on November 9, by entertaining 300 surgeons at dinner at its club house. The guests of honor were Dr. William J. Mayo of Rochester, Minn.; Dr. John B. Murphy of Chicago, Dr. Edward Martin of Philadelphia, Dr. George W. Crile of Cleveland, O.; Dr. Robert C. Coffey of Portland, Ore.; Dr. A. J. Ochsner of Chicago, and Dr. W. Arbuthnot Lane of London.

Dr. Jacobi Resigns.—After twenty-three years of continuous service Dr. Abraham Jacobi has offered his resignation as a trustee of the New York Academy of Medicine, and has insisted that it be accepted. Dr. Jacobi was elected to membership in the academy in June, 1857, served as president from 1885 to 1889, and has been a trustee ever since he retired from the presidency. His entire term of membership extends over fifty-six years and his services to the academy during that time are incalculable. Action on the resignation will be taken at a later meeting.

Associated Out-Patient Clinics.—The organization meeting of the twenty-eight dispensaries in New York, which have consented to join the Associated Out-Patient Clinics, will be held on Wednesday evening, November 20, at 8.15 in Room 21 of the Academy of Medicine.

Charitable Gifts.—By the will of the late Mrs. Melinda Hasbrouck of New York, a bequest of $10,000 is left to Stony Wold Sanatorium, Lake Kushaqua, N. Y.

Mt. Sinai Hospital, New York, receives $5,000 and the Montefiore Home $2,000 by the will of the late Nathan F. Straus of New York.

By the will of the late Mary Packer Cummings of Mauch Chunk, Pa., all the real estate owned by her at Sayre, Pa., is left to the Robert Packer Hospital of that place. In addition, the sum of $10,000 is bequeathed to the Protestant Episcopal Church of Delaware in trust for the benefit of St. Michael's Day Nursery and Hospital for Babies at Wilmington, and residuary bequests of $15,000 each are made to the Protestant Episcopal Hospital of Philadelphia and the Rush Hospital Consumptives of Philadelphia.

Northern Medical Society.—A meeting of this society will be held on Monday, November 18, in the Bronx Hospital Dispensary Building, 1385 Fulton Avenue, near 170th Street, New York. Papers will be presented by Drs. A. L. Soresi, William J. Robinson, Leo Buerger, and William S. Gottheil. The profession is cordially invited to attend.

American Sanatorium Association.—The next meeting of this Association will be held at the Montefiore Home Country Sanitarium, December 7, 1912.

Army Medical School.—Surgeon General Torney of the United States Army has submitted an estimate of $350,000 for the construction of buildings for the use of the Army Medical School, which now rents its quarters. It is proposed to place the school on the same tract of land with the Walter Reed General Hospital near Brightwood, in order that there may be a mutual exchange of advantages.

Kentucky State Medical Association.—At the annual meeting held in Louisville the election on October 31 resulted as follows: *President,* Dr. William Owen Roberts, Louisville; *Vice-Presidents,* Dr. J. H. Hendron, Cary; Dr. T. C. Holloway, Lexington; Dr. J. Paul Keith, Hopkinsville; *Secretary,* Dr. A. T. McCormack, Bowling Green; *Orator in Medicine,* Dr. T. Atchison Frazer, Marion; *Orator in Surgery,* Dr. Wilford E. Senour, Bellevue.

Ottawa (Can.) Medical Society.—At a meeting of this society held in St. Luke's Hospital on October 25, the following officers were elected for

the coming year: *President*, Dr. Charles W. Gorrell; *Vice-Presidents*, Dr. Campbell Laidlaw and Dr. Neil McLeod; *Secretary*, Dr. A. F. McLaren; *Treasurer*, Dr. J. Harold Alford.

Washington Parish (La.) Medical Society.—The organization of this society was perfected recently by the election of the following officers: *President*, Dr. Herbert Claiborne Cole, Bogalusa; *Secretary*, Dr. Joseph Latamore Brock, Franklinton.

Washington County (Ia.) Medical Society.—At the annual meeting held in Washington on October 25, the following officers were elected for the ensuing year: *President*, Dr. James C. Boice, Washington; *Vice-President*, Dr. William Henry McLaughlin, Riverside; *Secretary*, Dr. Clyde A. Boice, Washington; *Censor*, Dr. Henry C. Hull, Washington.

American Association of Clinical Research.—The fourth annual meeting of this association was held in New York on November 10, when the following officers were elected: *President*, Dr. Frank H. Blackmarr, Chicago; *Vice-Presidents*, Dr. Leonard K. Hirshberg, Baltimore, and Dr. Alice Conklin, Chicago; *Secretary*, Dr. James Krauss, Boston; *Registrar*, Dr. S. R. Klein, New York.

Obituary Notes.—Dr. William Frederick Rex of Brooklyn, a graduate of the New York College of Pharmacy and of the Long Island College Hospital, Brooklyn, in 1905, a member of the New York State and Kings County Medical Societies, and of the American Medical Association, and assistant surgeon to the Williamsburg Hospital, and the Bushwick and East Brooklyn Dispensaries, died at his home on November 1, aged 31 years.

Dr. Samuel Charles Emley of Kansas City, Mo., a graduate of the Rush College, Chicago, in 1902, a member of the American Medical Association and of the Missouri State and Jackson County Medical Societies, associate professor of pathology and bacteriology in the University of Kansas School of Medicine since 1905, and formerly in charge of the tuberculosis exhibit of the Missouri State Board of Health, died at his home on October 16, after a long illness, aged 38 years.

Dr. Joseph F. Land of New York, a graduate of the Dartmouth Medical School, Hanover, N. H. in 1876, a veteran of the Civil War, and a member of the American Institute of Homeopathy, the New York State Homeopathic Medical Society, and the Academy of Pathological Science, died at the home of his son in Erie, Pa., on October 29, aged 74 years.

Dr. William Henry Harlin, retired, of Oceanport, N. J., a graduate of the College of Physicians and Surgeons, New York, in 1862, and a veteran of the Civil War, having been present at the attack of Fort Sumter, died at his home on October 27, aged 72 years.

Dr. Erastus M. Ward of Rosedale, Mo., a graduate of the College of Physicians and Surgeons, Keokuk, in 1877, died recently at his home, aged 70 years.

Dr. George W. Nuckolls, retired, of Minneapolis, Minn., a graduate of the Rush Medical College, Chicago, in 1881, died at his home after a long illness on October 19, aged 69 years.

Dr. William H. George, retired, of McPherson, Kansas, a graduate of the University of Michigan, Department of Medicine and Surgery, in 1869, died in the McPherson Hospital following an operation for appendicitis, on October 19, aged 67 years.

Dr. William Jones of Portlaand, Ore., a graduate of the Cooper Medical College, San Francisco, San Francisco, in 1878, a meember of the Oregon State and Multnomah County Medical Societies, and a former president of each, senior surgeon at St. Vincent's Hospital, Portland, and emeritus professor of clinical surgery in the Medical Department of the University of Oregon, died at his home after a brief illness, on October 20, aged 59 years.

Dr. Joseph Pfeiffer of New York, a graduate of the University of Giessen, Germany, in 1853, and a member of the New York State and County Medical Societies, died at his home on October 31, aged 85 years.

Dr. Lewis J. Davis of Watertown, N. Y., a graduate of the University and Bellevue Hospital Medical College, New York, in 1899, died suddenly in New York City on November 3, aged 45 years.

Dr. Marietta H. C. Woodruff of Boonton, N. J., a graduate of the New York Medical College and Hospital for Women in 1874, died at her home on November 6.

Dr. David H. Agan of New York, a graduate of the Bellevue Hospital Medical College in 1879 and a member of the New York State and County Medical Societies, died at his home on November 4, aged 64 years.

Dr. Clarence A. Baker of Yaphank, N. Y., a graduate of the College of Physicians and Surgeons, New York, in 1885, a member of the Association of Railroad Surgeons of New York and New England, and of the Associated Physicians of Long Island, health officer of the town of Brookhaven, and county physician, died at his home on November 8, aged 50 years.

Dr. Henry G. Small of Brooklyn, N. Y., a graduate of the College of Physicians and Surgeons, New York, in 1874, died at his home on November 8, aged 60 years.

Dr. Joseph C. Pickard of Chicago, Ill., a graduate of the Rush Medical College, Chicago, in 1887, and a member of the Illinois State and Cook County Medical Societies, died at his home on October 31, aged 70 years.

Dr. Charles W. Oviatt of Oshkosh, Wis., a graduate of the University of Illinois, College of Medicine, in 1887, and a member of the American Medical Association, the Wisconsin State and Winnebago County Medical Societies, the American Surgical Association, and the Western Surgical Association, died at his home on November 1, aged 67 years.

Correspondence.

A SUBSTITUTE FOR FRESH AIR.

To the Editor of the Medical Record:

Sir:—To offer a substitute for fresh air would indicate the height of temerity; it would seem as absurd as to propose a substitute for food. The report of the Practitioners' Society in Medical Record of November 2 contains a paper by Dr. John W. Brannan on the "Prophylactic and Therapeutic Value of Fresh Air in Schools and Hospitals." It reproduces fully many valuable data and the logical deductions which the doctor's fine opportunity for observations have enabled him to make. The most obvious facts are often the most neglected, as I have had cause to realize in connection with my propaganda for Hydrotherapy and Public Cleansing Baths. That the latter are now recognized universally and adopted at great finan-

cial outlay, while the former still requires constant effort to overcome prejudice, simply demonstrates that medical men are *sui generis* in their moss-grown, falsely termed, Conservatism. As a remedial agent water arose coeval with bloodletting and is to-day used in most German clinics and taught more or less in all medical schools, while bloodletting is barely mentioned, despite the fact that it was the ruling remedy for 2,000 years during which water slumbered and almost died. This therapeutic agent though everywhere obtainable is neglected, while polypharmacy is now rampant and new drugs are taken up with an avidity unsurpassed in the history of Medicine. Strange disregard of the teachings of History! It is hoped that Dr. Brannan's paper will be widely read and that fresh air may become a universal remedial agent, despite its familiarity and accessibility.

This much to defend myself against any possible charge that I would counsel the abandonment of this agent which like water surpasses most renowned drugs. On occasion, when owing to prejudice, fear of taking cold, or lack of facilities, the proposed substitute is advised. In this matter clinical observation has preceded theoretical, scientific explanation of its rationale, as it has done with water and with cinchona, digitalis, and others. The improvement of patients exposed to the action of fresh air is very properly ascribed to stimulation of the vasomotor centers on the skin of the face and the mucous membrane of the nose. I may be permitted to add that this is precisely the action of fresh water.

Hitherto it would almost have been heresy to have claimed that the benefit from fresh air for healthy and sick people is due to anything else but the increased amount of oxygen in the "pure air." In an excellent paper on "the unknown factors in the ill effects of bad ventilation," read at the Congress on Hygiene, Dr. Yandell Henderson said positively that "the ill effects of bad ventilation cannot be due to lack of oxygen. It is probable they are not due to any considerable degree of excess of CO_2. The idea that they are due to some poisonous substance contained in the expired air has in recent years been regarded as untenable. The recent investigations of Hill in England and Fluegge in Germany make it highly probable that the effects of fresh air or vitiated air are brought about not by direct aciton upon the lungs but *indirectly through the skin.* It appears probable that the temperature and moisture of the air surrounding the body are the essential elements. The condition of the skin exerts a potent influence upon the lungs. This may be in part a vasomotor reflex acting upon the pulmonary circulation. The evidence accumulated during recent years indicates that that the lungs are not mere passive organs through which gases diffuse as through nonliving membranes—under certain conditions they secrete oxygen into the blood. The evidence available, although still far from complete, suggests that *these pulmonary activities are indirectly but powerfully influenced through conditions affecting the skin, and that it is in this manner that ventilation influences both.*"

The practical application of these views may be of great value in therapeutics. The experiment of Fluegge were made on himself and seven students in a properly constructed room three meters square. Three electric fans were secured to the ceiling and an electric stove to raise the temperature. It was found that when the temperature of the room was raised to 82° the experimenters began to suffer the usual ill effects of rebreathed air; when these effects could no longer be borne the fans were turned on with relief from all symptoms that were formerly regarded as due to increase of CO_2. Hill's experiment with himself and another person confirmed Fluegge's result: he also had a bag containing CO_2 emptied into the room, without an appreciable increase of the distressing effects. The fans removed the latter.

Now these observations would serve as a lesson to teach us to compensate for air vitiation by promoting the circulation of the air in rooms to which fresh air cannot be admitted in sufficient quantities. I have already advised this process in a room which is frequented by many and in which the air "feels close," despite the fact that artificial ventilation supplies thorough "fresh air renewal," according to the engineer in charge. It is found that whenever the fans are turned on the air "feels fresh" for some time; when they are quiet the room feels stuffy. *This experience proves that it is not the absence of fresh air which causes unpleasant effects but the absence of air currents.*

The introduction of fans, which are now so easily obtained, would be a great improvement in hospital and schoolroom construction, as well as in private houses, especially in rooms used for patients suffering from infectious diseases. It would be wise to make control experiments to ascertain the effect of outdoor treatment compared to indoor treatment with fans. Theoretically the substitution of the former by the latter is sound. I would not wish, however, to be understood as advocating this procedure when an ample supply of fresh air is available. And even under these conditions I should favor the addition of fans to enhance the refreshing action. In my lectures on the physiology of the skin I have laid stress upon this newly discovered action of air currents as vasomotor stimulants, and cite them as being analogous to the vasomotor action of water below skin temperature, which, being applied to much larger surfaces, is far more powerful, especially since water conveys temperature to the skin twenty-seven times more rapidly than air. As this may be regarded as a theoretical statement, I would suggest to any doubter to arrange the temperature of the bathroom at 70° F., and to fill the bathtub with water of precisely the same temperature. The air at 70° would be found comfortable by the nude skin, while the water of 70° will be found cool and soon chilliness will ensue. There is a rational basis for hydrotherapy as there is now found to be of aerotherapy. Both are based upon vasomotor action, but water acts upon larger areas of nerve terminals. Tuberculosis specialists and others may well hearken to the suggestions given in the MEDICAL RECORD of July 17, 1912—"The External Use of Water for Enhancing Resistance in Tuberculosis"—and accept the wise dictum of Adolphus Knopf, "Hydrotherapy comes next to Aerotherapy."

SIMON BARUCH, M.D.

51 WEST SEVENTIETH STREET, November 1, 1912.

AGAR TUBES IN THE DETERMINATION OF THE PANCREATIC FERMENTS.

TO THE EDITOR OF THE MEDICAL RECORD:

SIR:—In my recent paper on agar tubes for the determination of the pancreatic ferments, published in the MEDICAL RECORD, October 12, 1912, I mentioned

the desirability of having a specific indicator for the steapsin which would not be influenced by alkaline solutions. Nile blue sulphate (diethyldiamidonaphthophenazoxonium sulphate) has been used lately by Lohrisch (*Archiv. f. Verdauungskr.*, 1912, p. 636) as a specific stain for fat in examination of feces and gastric contents; neutral fats assume a red color, while fatty acids become blue.

This statement I can fully corroborate. The Nile blue sulphate I now employ for the steapsin determination of pancreatic fluids by the agar tube method. The agar mass for filling the tubes is prepared as follows:

Olive oil.....25 gm.
Agar-agar .....2 gm.
Solution Nile blue sulphate (1 -:- 2000), ad. 100 gm.

The olive oil Nile blue tube, which has a violet tint, becomes blue at the end when steapsin is present, otherwise it remains unchanged or becomes slightly purple. The amount of the agar column in millimeters turning blue represents the approximate quantity of the fat-splitting ferment. The agar tubes for the estimation of the pancreatic ferments can be made in the laboratory or obtained from Eimer & Amend, New York.

MAX EINHORN, M.D.
20 EAST SIXTY-THIRD STREET.

OUR LETTER FROM THE PHILIPPINES.

(From Our Regular Correspondent.)

THE PLAGUE—MOSQUITOS—MALARIA—A VICTORY OF SANITATION—PERSONAL.

MANILA, P. I., September 28, 1912.

THE plague situation in the Philippine Islands remains but little changed. An additional case occurred at Iloilo on September 15 in a person who is believed to have been in close contact with the inmates of the house in which five cases have already occurred. This makes a total of 8 cases with 8 deaths at Iloilo. On September 23 another case was found in Manila, this being the first since August 22. This last case occurred in the person of a Filipino, a cochero (coachman), who lived in the loft of a stable located in a lumber yard at the corner of Calles Magdalena and Salazar. There are probably forty or fifty other persons who live in this same lumber yard, under similarly poor conditions, but none of these, so far, have shown any evidence of plague. The neighbors report that the rats in the lumber yard are very numerous, but no dead rats have been found and careful laboratory examinations made of about 500 rats caught in the yard and vicinity during the past week have failed to show any evidence of plague among them. This case occurred in the same general section of the city as the cases heretofore reported, being some five blocks removed from the case on Calle Poblete. The neighborhood is a particularly insanitary one, owing to its being in a lumber and mill section, and inhabited by persons who live under most primitive conditions, and among whom it is most difficult to enforce garbage regulations. Guards have been placed all through this neighborhood and especial pains have been taken to insist upon the use of garbage cans so that the rats will be compelled to come to the rat-traps and rat-bane for their food.

Soon after the onset of the rains, in July, there was a rapid diminution in the number of mosquitos which afflict man, in Manila and vicinity. As the measures for eradicating mosquitos are the same now as they were immediately preceding the period in July that the large increase in their number took place, it will be seen that the theory that the unusually high June tides were responsible, by causing the innumerable salt-water pockets, was probably the correct one. Ordinarily, the salt-water mosquitos in Manila do not attack man, but this increased number of breeding places produced mosquitos in such numbers that, in order to obtain food, they did attack man. At all events, Manila is practically free at the present time from biting mosquitos, and it is possible to sit on verandas almost anywhere in the city without being annoyed.

A perusal of the statistics of the Bureau of Health for the fiscal year ended June 30, 1912, showed that in twenty-nine provinces there were 24,339 deaths attributed to malarial fever. A determined effort is being made to reduce the incidence of this disease in the future by the free distribution of enormous quantities of quinine and by educational campaigns carried out principally through schools in the provinces. The constant extension of commercial enterprises throughout the Islands is also becoming an important factor; not only in the spread of malaria, but also upon its successful control will largely depend the success of some of these commercial ventures. For instance, there has been a very extensive outbreak of malarial fever among the employees of the company engaged in the production of sugar on the San Jose Estate and vicinity, in Mindoro. At first there was a marked disinclination on the part of those in charge of these companies to take adequate sanitary measures to control the malaria. This caused many of those sick with malaria to leave and return to their homes, and, in many instances, they infected regions heretofore free from the disease.

Just what it is possible for modern sanitation to accomplish in this direction is well shown by the success which has attended the Government's efforts at the Iwahig Penal Colony on the Island of Palawan. At the time that the Penal Colony was begun this was notoriously one of the most insalubrious sections of the Islands; a death rate of over 200 per thousand occurred soon after the first prisoners were sent there. Before American occupation several Spanish sugar companies met financial ruin owing to the laborers dying of malaria. Quinine was distributed, in prophylactic doses, to all inmates, and steps were taken to drain or fill lowlands, the use of mosquito nets was insisted upon, and grass and other foliage which formed harboring places in the vicinity of houses was removed. Upon completion of these measures the death rate fell to approximately 16 per thousand, which is a rate which will compare favorably with the most healthy sections of the Philippine Islands, and perhaps even with those in temperate zones.

Mr. Edouard Nyssans, Administrator of Civil Hospitals of Belgium, has been a visitor in the city of Manila, and among other things has made an inspection of the new Philippine General Hospital and has expressed his high approval of the type of construction and the method of administration.

Dr. W. E. Musgrave, who recently went to Japan for his health, has returned, recovered, and has again resumed his duties as dean of the College of Medicine and Surgery.

Dr. H. E. Stafford, one of the oldest practising physicians in the Philippines, was recently stricken with appendicitis, from which he is now well on the road to recovery.

OUR BERLIN LETTER.

(From Our Regular Correspondent.)

MEETING OF THE ROYAL INSTITUTE OF PUBLIC HEALTH—GOVERNMENTAL MEASURES FOR RESEARCH IN INFECTIOUS DISEASES—INFECTIOUS DISEASES AND THEIR CONTROL IN LONDON—A CENTRAL BUREAU FOR MEDICAL LITERATURE—MODES OF LITERARY RESEARCH.

BERLIN, September 15, 1912.

A SPECTACLE quite unusual even to the learned classes of Berlin was presented in the large auditorium of the upper house of parliament on July 25. Brilliant academic gowns were worn by the distinguished men who came from far and wide to attend the annual meeting of the Royal Institute of Public Health, which parted from its former custom in holding the meeting this year in Berlin. The object was to acquire first hand information of the public hygienic measures of Germany and also to bring into closer personal relationship the public health workers of both countries. The different sections were as follows: (1) State medicine under the presidency of Sir T. Clifford Allbut; (2) bacteriology and comparative pathology, presided over by Prof. Sims Woodhead of Cambridge; (3) the hygiene of childhood and of the school, presided over by Sir James Crichton-Browne of Edinburgh; (4) marine, military, and tropical hygiene, under the presidency of Sir Ronald Ross; (5) municipal hygiene and hygienic technique, under the presidency of P. C. Cowan. There were read 150 papers, among which were many contributed by German authors; many hygienic establishments, particularly hospitals and sanatoria, were visited, and many social functions tended to knit the bonds of good-fellowship between the English and the German members.

The opening address was delivered by the president of the society, Earl Beauchamp, Minister of Public Works in London. The governmental regulations for the investigation and experimental control of the infectious diseases are much better in Germany than in England, but in the practical campaign against the infectious diseases England is ahead of Germany. London has for this purpose fourteen hospitals, containing a total of 8,568 beds. The mortality from scarlet fever has fallen from 13.5 to 1.9 per cent.; the mortality from diphtheria has fallen from 40.7 to 8.44 per cent.; the typhoid fever mortality has fallen from 21.3 to 14.3 per cent.; while that from smallpox has fallen from 20.8 to 15.7 per cent. All these figures pertain to a period of about forty years. Ten years ago of every 10,000 inhabitants of London there were 4 cases of scarlet fever; in 1911 there were 2.3 cases. The morbidity from diphtheria fell from 2.6 to 1.6, and that from typhoid fever fell from 0.7 to 0.23. In 1884 there were provided floating hospitals at some distance from London. In these all cases of smallpox were isolated. Since that year the incidence of smallpox diminished; during the past four years there has not been a single fatality from this disease. For the forty-seven years preceding the period of isolation away from the city there occurred annually an average of 1,045 cases.

The ambulance service of London is now entirely provided for by means of automobiles. For the transportation of acute cases there are 35 ambulances, of which 16 are provided with 21 beds. Ten ambulances are set aside for the conveyance of convalescents and discharged patients. The speaker next alluded to the government's provisions for the sanatorium treatment of tuberculosis, and to the various English institutions for the study of tropical diseases, and closed with a eulogy of the great German hygienists, Koch and Pettenkofer.

A short time ago there was established in Berlin a central bureau for research in medical literature. It is supervised by Chief of Staff Dr. Beyer, and a number of physicians who look after the special subjects. The mode and purpose of the organization are described by the director as follows: The modern enormous expansion of medican literature makes it impossible for the general practitioner, except in certain rare instances, to keep in touch with the latest contributions to medical science. The time has arrived when the investigator, the clinician, and the practising physician should avail themselves of the services of a literary expert. The objection may be urged that the latter may not be able to meet in every instance the requirements of the author of a theme, but as the work goes on the two may cooperate to produce a satisfactory result. The desultory reading of the novice should be replaced by the methodical work of the literary bureau. Older and busier practitioners will appreciate the services of the latter institution by being provided with those articles which are of special interest to them.

The routine work of the literary worker comprises the following three divisions: (1) The preparation of reports for publication, with reference to new contributions, bibliographies and abstracts. (2) The preparation of reports for individual physicians, including résumé's and surveys. (3) The preparation of translations, tables, indices, and the making of corrections, and other special phases of literary assistance. The medicoliterary bureau of Berlin at Friedenau has as yet undertaken only the first division of this work, in a manner that has aroused universal approval among the profession. An extension of this work is being projected. The plan of the larger bureau is as follows: It should be under the directorship of a physician, with two physicians in charge of each division. One of these will be on the premises, while the other will be in charge of extramural investigations, such as at various libraries and other institutions. An ample compensation is urged for these workers.

Progress of Medical Science.

Boston Medical and Surgical Journal.

October 31, 1912

1. Memorabilia: Extracts from Medical Notes Made by the Late Henry Ingersoll Bowditch, M.D., of Boston. V. Y. Bowditch
2. Some Observations on Cases of Prostatic Obstruction Presenting Overdistended Bladders. A. L. Chute.
3. Artificial Pneumothorax in Advanced Unilateral Cases of Pulmonary Tuberculosis. E. O. Otis.
4. Routine Medical Work in a Sanatorium. L. Brown, H. I. Barnes and V. F. Cullen.

1. Medical Notes of the Late Dr. Henry I. Bowditch. By V. I. Bowditch. (See MEDICAL RECORD, October 19 1912, page 728.)

2. Prostatic Obstruction.—A. L. Chute believes that the mortality in operations for the relief of prostatic obstruction depends largely on the condition of the kidneys, and that urinary back pressure and the damage and embarrassment this inflicts on the kidneys is the commonest form of renal danger in prostatics. Its importance lies in the fact that a patient may be very near the uremic state without this being evident. The functional tests do not give absolutely definite information as to how near the

uremic state a patient is. The most accurate idea of this is obtained from the symptoms of general toxemia that these patients show; these symptoms are referred to the digestive tract most often, less frequently to the nervous system. What the author terms the "element of embarrassment" in these patients, the element that depends on back pressure alone, is capable of relief. This relief by proper preliminary treatment may be enough to determine the success or failure of operation. The endeavor in these patients should be to relieve the back pressure without infecting the urinary tract or with the minimum of infection. In the aseptic cases this is best accomplished by a preliminary suprapubic cystotomy under local anesthesia; in the infected cases the use of an inlying catheter is usually sufficient.

3. **Artificial Pneumothorax in Advanced Pulmonary Tuberculosis.**—E. O. Otis notes that the conditions which warrant a recourse to artificial pneumothorax are an advanced or advancing case of pulmonary tuberculosis the disease being principally unilateral. After a careful physical and *x*-ray examination, the spot which appears to be free from adhesions is selected, and, by careful manipulation, a needle similar to an aspirating needle is inserted between the two layers of the pleura and through it nitrogen gas is slowly injected under slight pressure. Only a certain amount of the gas is allowed to flow in at the first attempt, depending upon individual conditions, and the procedure is repeated, if all goes well, at frequent intervals until the lung is tightly compressed, as shown by the physical examination and *x*-ray picture. When this has been accomplished, the subsequent injections are given at longer intervals, sufficient to maintain the compression.

New York Medical Journal.

November 2, 1912.

1. The Edipus Complex. A. A. Brill.
2. The Ecchymotic Skin Reaction or Acquired Pseudohemophilia; Sicard's Syndrome. W. M. Barton.
3. The Scientific Treatment of the Insane—A National Problem. T. W. Salmon.
4. The Rôle of Disinfection and the Influence of Infected Rooms and Fomites in the Transmission of Infectious Diseases. A. H. Doty.
5. The Use of Mixed Infection Vaccines in Skin Infections. J. G. Burke.
6. Manual Treatment of the Abdominal Sympathetic. E. F. Cyriax and A. Kellgren-Cyriax.
7. Implantation of Fat into Tenon's Capsule after Enucleation. W. B. Weidler.
8. Local Treatment of Two Pistolshot Cases Using Hot Water Applications. F. Griffith.
9. The First Medical Clinic of Vienna: Von Noorden's Division. J. Gutman.

2. **Ecchymotic Skin Reaction.**—W. M. Barton states that during the past few years a few cases have come under his observation in which comparatively slight digital or other pressure has produced a local ecchymotic cutaneous reaction. Two cases have occurred in women during or after the menopause. In a recent article Sicard and Gutman report two cases of a similar kind, one in a female and one in a male, in both of which there occurred cutaneous ecchymoses as a result of slight digital compression. Are these similar cases and to be regarded as true acquired hemophilia? If any defect of coagulability of the blood is to be taken as a criterion, the answer is no. In none of the four cases reported was there any delay in coagulation time. In one case no examination was made to determine this point, but the patient had never had a hemorrhage of any severity. It would appear more reasonable to suppose that cases in which the ecchymotic skin reaction is observed, spontaneously or upon slight pressure, are not cases of true hemophilia. It would be interesting to examine the condition of the vascular walls in these cases. In some cases of true hemophilia changes have been observed in the smaller vessels; but in others no pathological alterations have been found. Perhaps the condition of acute ecchymotic skin reaction may be found associated with, and dependent upon an abnormal fragility of the capillary wall and this upon a generalized capillosclerosis.

4. **Infected Rooms and Fomites in the Transmission of Infectious Diseases.**—By A. H. Doty. (See MEDICAL RECORD, September 28, 1912, page 580.)

7. **Implantation of Fat into Tenon's Capsule after Enucleation.**—W. B. Weidler states that the ophthalmic surgeon has for the past twenty-five years tried many forms of enucleation and implantation into Tenon's capsule and the orbital tissues of different materials, with the hope of securing a more freely movable stump for a glass eye. So far these efforts have been successful to a moderate degree only. Before this time it had been thought sufficient if the ophthalmic surgeon removed the diseased or disfiguring eye without giving any special thought to the after appearances or the movements of the artificial eye. The author mentions some of the many things that have been tried from time to time to secure a more movable stump for the glass eye. Mules used the glass ball and Fox suggested the gold ball; others have tried celluloid, sponge, peat, fresh or decalcified bone, agaragar, petrolatum, rubber, wire, silk, catgut, rabbit's eyes, and fat from the gluteal region. The author calls attention to the use of fat as an implant. This is not a new operation, as it was first tried by Barrequier fifteen years ago and has been performed by many ophthalmic surgeons with varying degrees of success. The operation is comparatively simple and is not attended with any danger to the patient.

Journal of the American Medical Association.

November 2, 1912.

1. Gallstones Coincident with Other Surgical Lesions. J. G. Clark.
2. Sporotrichosis in Man. With a Summary of the Cases Reported in the United States and a Consideration of the Clinical Varieties and the Important Factors in the Differential Diagnosis. W. W. Hamburger.
3. The Application of Conservative Surgery to Ovarian Dermoids. A. C. Martin.
4. Bilateral Fibromatosis of Ovaries, with Ossification of Ovarian Fibroma. J. A. Robertson.
5. Influence of Sodium Iodoxybenzoate on Reactions of Inflammatory Character. S. Amberg and J. H. M. Knox, Jr.
6. The Retail Pharmacist as a Purveyor of Pure Drugs. H. Kraemer.
7. The Quality of Drugs on the Market. L. F. Kebler.
8. Drug Plant Cultivation. R. H. True.
9. Multiple Sclerosis. L. H. Mettler.
10. A Case of Multiple Cerebrospinal Sclerosis, Presenting Unusual Symptoms Suggesting Paresis. Clinical and Pathological Findings. F. X. Dercum.
11. Ileus Considered Experimentally. A. McLean and R. C. Andries.
12. Some Common Types of Hyposecretion of the Thyroid. O. T. Osborne.
13. The Importance of Careful Investigation Before Removing or Destroying Organs. R. E. Castelaw.

1. **Gallstones Coincident with Other Surgical Lesions.**—J. G. Clark concludes that gallstones give rise to symptoms in a much larger proportion of cases than is commonly supposed. Many cases heretofore diagnosticated and treated as chronic indigestion and other vague stomach disorders are in reality cases of cholelithiasis. Gallstones are not necessarily innocuous when they are producing no symptoms, but may produce fatal lesions while their presence is unsuspected. Unless contraindicated, the gall-bladder as well as the appendix should be examined in all cases of celiotomy, and gallstones, if present, should be removed whether they offend or not, provided the patient's local and general condition are favorable.

3. **Ovarian Dermoids.**—A. C. Martin, after reporting a case of dermoid of the ovary, discusses the cases of malignancy in these growths and emphasizes the necessity of submitting the tumors to a careful microscopical analysis in every instance. In the case he reports there was a suspicion of malignancy in the somewhat too numerous cells and their atypical arrangement. Undoubtedly simple dermoids are benign, but there is a possibility of malignancy in those that approach the teratoma type. Another characteristic of the ovarian dermoid which calls for men-

tion in this connection is the peritoneal metastasis, in which the peritoneum is dotted with minute knots, each furnished with a small tuft of hair. Bland Sutton does not consider these malignant, and this opinion seems to be borne out by the usual history of these growths. The author presents a summary of the reported cases of malignant complications of ovarian dermoid, and concludes that primary conservation of the ovary, if technically possible and otherwise desirable, is the operation of choice in dealing with ovarian dermoids which give no evidence of malignancy in the gross or on the immediate examination of a frozen section. The excised tissue should invariably be examined subsequently with the utmost detail for microscopical evidence of the threefold possibilities of malignancy, each of which, fortunately, is rare. In young women, a radical operation is imperative only if demanded by positive pathological findings.

9. **Multiple Sclerosis.**—L. H. Mettler states that the literature of multiple sclerosis is full of contradictions. The disease has been called in Europe one of the most common of the organic nervous affections, and in America one of the rarest. The author introduces his discussion of the subject with the histories of three cases, which indicate that quite dissimilar troubles may be classed under this head. One was a typical case with marked neuropathic heredity; the second was less clear, both etiologically and clinically; the third was a pure case of cerebrospinal syphilis with merely a remote resemblance to multiple sclerosis. The symptoms of multiple sclerosis are not uniformly distinctive and diagnostic errors are far too common. No two investigators seem to agree on the physical basis or pathophysiology. The crux of the whole matter is the plaque or sclerotic patch. This is fairly distinctive, and if agreement could be reached as to its origin and essential constitution one might have a basis for statistics. Differences of opinion prevail as to their relationship to the blood-vessels. Most pathologists do not believe that the plaques are limited to this disease. Multiple sclerosis of the typical Charcot type, with marked neuropathy in the ancestry, is a very rare disease.

11. **Experimental Ileus.**—A. McLean and R. C. Andries conclude that death in ileus is not due to a toxemia, *i.e.* it is due neither to the absorption of bacteria or their toxins, nor to the absorption of some altered physiological secretion. A depletion of the vascular and lymph-system, causing a grave disturbance in the circulation, especially in the cerebral circulation, is a prime factor in the causation of death. A pathological change in the sympathetic nervous system, a loss of sympathetic control, is probably contributory. Treatment must, first of all, relieve distention and secondly, refill the depleted vessels.

The Lancet.

October 26, 1912.

1. The Passing of Morbid Anatomy. Sir James F. Goodhart.
2. Mental Disorders. Sir George H. Savage.
3. Industrial Mercurial Poisoning as Seen in Felt-Hat Makers. F. E. Tylecote.
4. The Operative Treatment of Fractures. A. J. Walton.
5. Some Reflections on Gastrojejunostomy. J. O'Conor.
6. A Case of Localized Intracorpuscular Sulphemoglobinemia. H. Davis.
7. A Case of Myxedema. R. S. Novis.
8. The Practical Use of Vaccine Treatment in Pulmonary Tuberculosis. B. Hudson.

1. **The Passing of Morbid Anatomy.**—Sir James F. Goodhart points out that all of the changes and shiftings of ground in the development of modern pathology suggest the existence of a struggle on the part of the pathologist to find out some morbid change for every disease, and it is indeed admitted that the pathologist has been ever more and more reducing function to terms of structural change. But the time has come when it seems worth while to insist that all this work upon the foundation—whether it be anatomical, histological, chemical, physical—has, unconsciously perhaps, but none the less inevitably, been ushering in another point of view, and the latest phase of pathology is the more intricate one that concerns itself primarily with the investigation of function.

2. **Mental Disorders.**—Sir George H. Savage states that so-called mental disorder is gauged in relationship to conduct, and that certain disorders depend more on the surroundings of the patient than on the patient himself. The author has long been in the habit of referring to the social misfits which depend on the surroundings rather than on the patient. Social and mental disorders are nearly related, and one of the most difficult problems is to decide where badness ends and madness begins. There are many mental disorders which deserve the name functional in so far as they are not represented by any material change in the central nervous tissues. Nature provides the iron, but man makes the horse-shoe for service. In considering heredity too much stress should not be laid on the existence of some forms of mental disorder in the family. Insanity, like genius, may be an accident. It is certain that some families in which every form of neurosis has been represented have succeeded in breeding out of the tendency. It is interesting to note in some members of a family eccentricities or tricks of manner, insanity in one generation being followed by musical or other aptitude in the next, while in the third generation, or in some members of the second generation, beside the normal members there were some with tricks, such as the faculty, untrained, of mirror writing. One should not believe too much in what Maudsley has called the tyranny of the organism. That external conditions have very much to do with the production of attacks of insanity the author has no doubt. One of his favorite similes in teaching on the question of heredity was to compare it with the mycelium of the mushroom. This spreads far and wide, and is not recognized till suitable conditions lead to the mushroom which comes to the surface. So the neurotic inheritance spreads far and wide and is deeply seated, but the occasion for its development may be wanting.

3. **Industrial Mercurial Poisoning.**—By F. E. Tylecote. (See MEDICAL RECORD, October 19, 1912, page 716.)

6. **A Case of Sulphemoglobinemia.**—H. Davis reports the case of a woman, 27 years of age, whose face had a remarkable color, being stained a deep slate blue, almost a blue-black. This hue prevailed all over the face and scalp and over the exposed part of the neck, but it could not be observed anywhere else except at the bases of the finger-nails. The bases of the toe-nails were of the normal color. The mucous membranes were unstained. On the face the color was most marked over the nose, but it was quite obvious in the sclerotics; the cheeks and forehead were also affected, but the ears to a slightly less degree than other parts. The color could not be dispersed by pressure. The patient's face had assumed its peculiar tint eleven years previously, when the patient was 16 years old, and had not changed since that time. When the patient was admitted to the hospital she had been suffering from a certain amount of digestive disturbance, of which the chief sign was pain after meals; this symptom had lasted for three months. She was also subject to headache, dyspnea, and sweating on exertion, with occasional palpitation and giddiness. Her general nutrition was good. Nothing abnormal was discovered in the lungs. The apex-beat was in the fifth intercostal space in the nipple-line, and there was a slight systolic bruit in the mitral area. Otherwise the heart sounds were normal. There was no clubbing of the fingers. The tongue was furred and the teeth were bad. There was no enlargement of the liver or spleen. The urine was straw-colored, and acid in reaction; no abnormal constituent was discovered, and the specific gravity was 1007. There was thus no sign of

alkaptonuria. The blood count showed red cells 5,280,000, white cells 6,000, percentage of hemoglobin 98, index 0.9. The differential count showed polymorphonuclear leucocytes 76 per cent., lymphocytes 20 per cent., transitional cells 2 per cent., and eosinophile cells 2 per cent. The diagnosis of this case was difficult. The possibilities which presented themselves were argyria, ochronosis, hemachromatosis, methemoglobinemia, and sulphemoglobinemia. The general appearance of the patient was very suggestive of argyria. A specimen of the patient's blood showed the characteristic absorption band of sulphemoglobinemia in the red end of the spectrum.

8. Vaccine Treatment in Pulmonary Tuberculosis.—B. Hudson has found that in certain cases of pulmonary tuberculosis a course of vaccine treatment is of great benefit. There is, however, always a large amount of uncertainty, owing to the difficulty of isolating the causal organism; but even if the vaccine does no good, it at any rate never seems to do any permanent damage and is worth trying. The treatment may be used in conjunction with tuberculin. It must be carefully borne in mind that any injection or other treatment is only an adjunct, and that the general hygiene, open-air, climatic and tonic treatment, systematic rest, and good feeding should be always strictly enforced.

British Medical Journal.

October 26, 1912.

1. The Passing of Morbid Anatomy. Sir James Goodhart.
2. Pellagra in the British Islands. L. W. Sambon and A. J. Chalmers.
3. Mitral Stenosis: Peripheral Emboli Causing Partial Monoplegia with Symptoms Simulating Cerebral Embolism. G. G. Alderson.
4. On the Presence of Sugar in the Cerebrospinal Fluid from Cases of Meningitis. F. H. Jacob.

1. The Passing of Morbid Anatomy.—By Sir James Goodhart. (See page —.)

2. Pellagra in the British Islands.—L. W. Sambon and A. J. Chalmers present the evidence which proves that for an undetermined but long time pellagra has endemically prevailed in parts of the United Kingdom, and that, notwithstanding the recognition and publication of two grave typical cases, the disease has been generally overlooked in its milder and more obscure forms. The presence of pellagra in the British Islands is of geographical interest, because hitherto the disease was believed to be limited northwards by the forty-fifth parallel. Etiologically, its presence in the United Kingdom is of importance, because here its causation cannot be reasonably explained by the consumption of either sound or bad maize, and its topographical distribution shows that here, as elsewhere, it is linked to the swift-flowing, Simulium-infected streams. Sociologically, the disease calls for the most urgent attention. Pellagra is an insidious disease, either of a rapidly fatal or of a long intermittent course, leading to insanity. The pellagrous psychical disturbances are as many-sided and as obscure as the somatic manifestations of the disease, but the salient feature is an intermittent and progressive amentia, often assuming a semblance of melancholia and exhibiting from time to time regular outbursts of maniacal excitement. In some cases there may be all the appearances of progressive paralysis. Dementia is the invariable termination, unless the patient be cured, or carried off sooner by some intercurrent disease or mere exhaustion of the vital powers.

3. Mitral Stenosis with Peripheral Emboli.—G. G. Alderson reports the case of a woman aged 42 years who had mitral stenosis following an attack of rheumatic fever six years previously. This case is of interest because on two occasions on which embolism occurred in a limb artery the attendant symptoms accurately simulated those associated with cerebral embolism. Thus, on each occasion the patient was the subject of partial monoplegia, with attendant nausea and giddiness. Additional interest is afforded by the fact that death was absolutely sudden, and was found to be due to the presence of a ball thrombus in the right auricle.

4. Sugar in the Cerebrospinal Fluid in Cases of Meningitis.—F. H. Jacob concludes that in pyogenic meningitis, whether caused by the pneumococcus or streptococcus, or by a mixed infection, sugar is invariably absent. In cerebrospinal meningitis sugar is absent in the acute stage, but may return in some degree as the infection recedes. In tuberculous meningitis sugar is present, except in very rare cases shortly before death, in which stage a difficulty in diagnosis rarely exists. In poliomyelitis sugar is present. These findings seem sufficiently definite to be of real value.

Berliner klinische Wochenschrift.

October 21, 1912.

Angiosclerosis of the Intestinal Arteries with Intermittent Limp.—Friedmann of New York relates the case of a syphilitic man aged 46 who suffered from severe crises of intestinal colic. Various affections like gastric and duodenal ulcer, gallstones, tabes, etc., could be excluded. The attacks set in instantaneously. As intermittent limp developed later a diagnosis was made of angiosclerosis of the superior mesentery artery. The patient was placed upon the antisyphilitic regimen (no salvarsan) and within a short time the limp had permanently vanished. It is impossible to state whether the paroxysms of colic have been removed. The patient later received salvarsan in the further hope of a permanent cure.

Therapeutic Action of Metals Upon Cancer.—Gaylord of the Buffalo Cancer Institute began to test various metallic salts in mammalian cancer, notably halogens, long before 1908, and no less than 250 distinct substances have been employed for this purpose. It was not until long afterwards that the Berlin results were published. During the same period the subject of goiter and cancer of the thyroid in certain fishes (Salmonidæ) was likewise investigated. It was learned that if the water was impregnated with a little iodine this condition could be controlled. It has since been learned that mercury and arsenic exert the same curative power as iodine. The fact that infinitesimal quantities of metal can affect fish cancer so favorably will lead to a reduction of the doses in cancer in mammals.

Necrotic Cyanotic Liver with Icterus.—Oertel of the Sage Pathologic Institute, New York, believes that he has discovered a new and peculiar lesion of the liver which is non-inflammatory in origin, being determined by extreme venous stasis. He has published several papers on the subject, the first in 1904, and has now five cases recorded, each of which is given in detail. He also knows of other material. The last case may be briefly reproduced here: patient, a man aged 25, had typical initial stenosis. Among other results of stasis pulsating liver developed with icterus. Leucocyte count showed absence of infection. The icterus increased and acute hemorrhagic diathesis began to be in evidence. Death supervened without any temperature rise. Section showed the usual phenomena of venous stasis. The state of the liver, however, differed radically from the ordinary red atrophy. The organ was smooth and of a uniform green color. The microscope showed irregular streaks of necrosis with hemorrhagic extravasations. The picture was quite unlike that of ordinary parenchymatous degeneration.

Dysbasia Arteriosclerotica and Flat Foot.—Brandenstein calls attention to the comparative frequency of this association. Not a few cases of intermittent limp have been seen in subjects with flat foot—evidently the deforming degree of the latter, for the milder type is too common to have much significance in this connection. It is in such cases that the pains occasioned by the deformity serve to mask some of the symptoms of the angiosclerosis.

The limp itself may be referred to the flat foot. From the opposite viewpoint the angiosclerosis can aggravate the deformity. As a result of the former the muscles undergo atrophy, the extremity becomes cold and moist as a result of failing circulation. Flat foot is chiefly bilateral, while angiosclerosis is often unilateral. The significance of this association is at present obscure. It is of course not certain that it is primarily only a coincidence, but the association forms a definite clinical entity, in as far as it represents a vicious circle.

Münchener medizinische Wochenschrift.

October 22, 1912.

Extraperitoneal Cesarean Section.—O. Küstner up to September 12 of this year had operated by this route in seventy-two cases. He is averaging two or three operations monthly, and is doubtless the heaviest operator in this intervention. As in all such procedures, there is more or less confusion, for some appear to make no distinction between the strict extraperitoneal and the cervical transperitoneal routes. A new term, peritoneophobia, has been coined to denote the unfounded aversion on the part of some surgeons to opening the peritoneal cavity. The indications are simple—practically contracted pelvis with unfavorable outlook for the birth of the intact child. The indications are therefore determined largely by the state of the fetus—poor heart sounds, escape of meconium, early escape of waters, etc. In the seventy-two operations the author lost but four children. Three were in deep asphyxia and the fourth had meningeal hemorrhage. But one mother was lost, the death being attributed to the anesthetic.

Simple Mechanical Resource for Epistaxis.—Ritschl employs the socalled Naegeli's maneuver for nose bleed. As is known, the last named author wrote in 1894 a monograph on mechanical interventions in various portions of the body for neuralgias and neuroses, which recalls the management of these and other conditions of "osteopaths" in the United States. Two maneuvers termed by Naegeli the "head support" and the "head extension" are said to exert an energetic anemization of the head and adjacent structures. Such a degree of anemia may be induced as will provoke first vertigo and then syncope. Naegeli's explanation of these results may not, however, be the correct one. He ascribes the anemia of the brain to a sort of suction by the large veins, while the author invokes a stretching of the cervical sympathetic with stimulation of the vasoconstrictor fibers. He came to this conclusion when he found that the maneuvers caused constriction of the arterioles of the Schneiderian membrane and accidentally arrest of epistaxis. One hand is placed under the jaw while the second is applied to the occiput. A uniform upward traction is now made upon the head. To reinforce this action the maneuver may be made with the head extended strongly backward. Hemostasis must result in from one to two minutes.

Treatment of Pertussis.—Althoff has now gone through two epidemics of whooping cough in which he obtained distinguished success with a combination of sedatives in association with other measures such as mustard baths and menthol embrocations over the spine. The sedatives comprise chiefly antipyrin, heroin, and sodium bromide. This management, however, must begin during the initial catarrhal stage to be efficacious, and it then operates by curtailing the duration of the second or spasmodic stage. The child receives three mustard baths in daily succession at the outset. A quarter pound of mustard of medium strength is used in a general tub bath, naturally to antagonize the bronchitis. The dorsal inunctions of strong menthol ointment are given three times daily. In addition to the sedatives already enumerated the author also prescribes ipecac and aristolochia.

Deutsche medizinische Wochenschrift.

October 24, 1912.

Posttraumatic Pachymeningitis.—Kasemeyer cites an instance which illustrates how a trauma of the head may insidiously lead to death even in the absence of symptoms during a prolonged interval period. The patient, a young man, was admitted to the clinic with evidences of acute meningitis. Five years before while serving as a soldier he was kicked on the head by his horse. He went about his business as usual and never mentioned that he was even stunned. He finished his service, and the few and mild symptoms complained of during that period could not be referred definitely to the results of injury. He married and begot children. Habits good throughout. A day or so before admission he had been attacked suddenly with severe headache and chills, and on admission presented an undoubted picture of cerebrospinal meningitis. Cultures made from the throat and spinal fluid showed virulent pneumococci. He did not respond to treatment and died in coma. Section showed an old fibrinous adhesive pachymeningitis with an area of softening in the cortex. The latter having become infected set up a general diffuse purulent cerebrospinal meningitis. The author's deductions are as follows: At the time of the injury a small subdural hemorrhage resulted. This organized, but the newly formed blood-vessels degenerated and ruptured. Now for the first time pachymeningitis interna hemorrhagica developed, and led to adhesions between dura and pia. As a result of circulatory disturbance in the cortex a focus of softening developed and became infected through the nasopharynx.

Thyreoidin in Vomiting of Pregnancy.—Koreck, a Hungarian practitioner, discovered on purely empirical grounds that thyreoidin has some power over vomiting of pregnancy. Of importance was the fact that the usual physiological action of the drug was not in evidence, the cardiac frequency being even diminished. The improvement was pronounced and when the drug was discontinued vomiting reappeared. The morning vomiting was the most refractory. The author tested the drug on other patients with the same good results. One of the women on two previous occasions had her pregnancy terminated by induced abortion, but now went on to term. The possibility of suggestion as a therapeutic factor is not mentioned by the author.

Serotherapy of Diphtheria in Heubner's Clinic.—Eckert makes a very valuable report of seventeen years continuous use of antitoxin in Heubner's Berlin clinic. This on the whole is eminently favorable. The summary is in part as follows: There is a certain experimental foundation for the efficacy of serum in preventing paralysis, but the problem has not yet been worked out fully in mankind. The possibility of fatal serum disease thus far authorizes the routine use of the intravenous method. For the prevention of anaphylaxis there is an abundance of recommendations, some of which concern the preparation of the serum itself, while others involve the exhibition of counteracting remedies. The author does not give any routine procedure in use at the clinic. The high dosage used in the latter has not for many reasons been carried out in private practice; but efforts will be made to make this course practicable. Of collateral measures the author recommends the most roborant diet including wine and concentrated meat preparations. Of local measures the author finds pyrocyanase in no wise superior to ichthyol. Bolus alba is much used at the clinic. As heart tonics adrenalin, strychnin, and caffein are recommended. The general tendency of early well dosed serum therapy is to do away with the need of other remedies. A lethal element is seen in an early severe myocarditis which can neither be antidoted nor offset by substances which raise blood pressure.

Insurance Medicine.

Hazardous and Unhealthful Occupations and their Rating.—F. B. Mead states that while conditions in England differ radically from those prevailing in this country, a careful study of the returns of the Registrar General for England and Wales showing the mortality in different occupations and the causes of death in each, is very interesting and instructive. The following are the returns for 1890, 1891, and 1892, indicating average mortality per 1,000: Clergyman, 533; farmer, 563; schoolmaster, 604; farm laborer, 632; grocer, 664; carpenter or joiner, 783; lawyer, 821; blacksmith, 914; baker or confectioner, 920; druggist, 926; physician, 966; general shopkeeper, 973; butcher, 1,096; brewer, 1,427; innkeeper, spirit, wine or beer dealer, 1,642; inn or hotel servant, 1,725; file maker, 1,810. One of the purposes of introducing the foregoing comparative figures is to emphasize the important influence that occupation has upon mortality. In order to illustrate further how mortality varies among certain important occupations which are acceptable for standard policies, the following table is introduced showing the mortality experienced by the Gotha Life Insurance Company from 1829 to 1890, among physicians, Protestant clergy, and teachers in the primary schools. The rate according to the American Experience Table is added for purposes of comparison:

GRADUATED RATE OF MORTALITY AFTER ELIMINATING THE FIRST FIVE YEARS OF INSURANCE

Age	American Experience Table	Physicians	Protestant Clergy	Teachers
25	.0081	.0070	.0049	.0051
30	.0084	.0076	.0051	.0055
35	.0090	.0106	.0055	.0063
40	.0098	.0127	.0063	.0074
45	.0112	.0138	.0077	.0095
50	.0138	.0168	.0106	.0131
55	.0186	.0262	.0171	.0187
60	.0267	.0373	.0271	.0283
65	.0401	.0549	.0430	.0441
70	.0620	.0779	.0702	.0708
75	.0940	.1062	.1066	.1096
80	.1445	.1614	.1690	.1617
85	.2356	.2142	.2764	.2307
90	.4545	.3630	.4317	.3262

It will be especially noted in the second table that the mortality varies for the different occupations at the very earliest age tabulated and that the difference increases up to about age 60 or 63 and then rapidly diminishes until the mortality for the different occupations practically coincides at age 73.

The occupational risks included in the new specialized mortality investigation that is now being conducted embrace all risks insured in the occupations covered, whether they were accepted as standard risks or under special conditions. In this way will result a more accurate representation of the general average mortality of each special occupation than was the case in the specialized investigation published in 1903, for, as has been repeatedly pointed out the latter investigation embraced only such risks as were issued standard policies and they represent the very best grade of risks in their respective classes.

The following figures represent the experience of the New York Life Insurance Company as to the mortality of certain occupations:

Bartenders, expected deaths, 42, actual deaths, 75, ratio of actual to expected deaths, 178 per cent.; saloonkeepers, expected deaths, 222, actual deaths, 294, ratio of actual to expected deaths, 132 per cent.; proprietors, managers, and clerks of hotels and restaurants with bar, expected deaths, 66, actual deaths, 98, ratio of actual to expected deaths, 148 per cent. Hunter states that no absolute lines can be laid down for the treatment of proprietors, managers, and clerks of hotels and restaurants, that the best of them are acceptable on any form of policy without discrimination, while the average is not entitled to any better treatment than the average saloonkeeper. Working miners, expected deaths, 79, actual deaths, 195, ratio of actual to expected deaths, 247 per cent. There were no coal miners included in the above, nor placer, drift or hydraulic miners. Two tables are introduced which are based upon the experience of a certain British company upon a large number of risks engaged in the sale of intoxicating liquors. From these it will be gathered that the required number of years of rating up is 24, and at age 40 it is 14 years while at age 60 it is 6 years. On the other hand, the difference in premiums by the two tables increases with age, the extra premium required by the liquor sellers being $14.18 at age 20, $18.12 at age 40, and $21.00 at age 60. The liquor industry may be considered as a somewhat typical occupation in which the extra mortality is due for the most part to unhealthful conditions. Not only does a level extra premium for all ages at entry not conform to conditions but rating up likewise fails to meet the case.

Consider on the other hand another type of occupation in which the extra mortality is due to the increased hazard from accident. Hunter tells us that the experience of the New York Life shows that hazard from accident decreases somewhat with age and this characteristic is displayed by other experiences. The younger men are more reckless and caution is developed as a result of length of service, For practical purposes, however, the assumption of a uniform extra mortality for all ages meets the conditions in a satisfactory manner.

To meet the actual conditions best it seems that occupations should be divided into classes according to whether the accident hazard is the predominating cause of the extra mortality or whether the extra mortality is due in large part to unhealthful conditions.—*Proceedings of Second Mid-Year Meeting of the Medical Section American Life Convention.*

Can Modern Life Insurance Survive?—Dr. George W. Hopkins, of Cleveland, Ohio, says that life insurance is theoretically a philanthropic institution designed to protect the dependents of the insured from the pecuniary loss because of his death. The basis of insurance is the determination of the mortality rate at various ages of individuals in various occupations and under various economic conditions. The main purpose of the man of moderate means should be to secure the maximum protection for his family at the lowest annual premium rate. Thus every doctor should be vitally interested in insurance, its variations in policy forms, costs, and benefits. The paper by Dr. Hopkins is a criticism of cash surrender values. Hopkins asks whether modern life insurance can survive when we see how the solvency of the whole system is constantly threatened by what he calls the prevalent cash surrender evil. Cash surrenders, he says, are not, and never will be, in any sense life insurance. Life insurance is a substitute for a man's earnings after his death. Anything more than pure protection for one's dependents is not life insurance at all, but banking or investment.—*Medical Review of Reviews*, September, 1912.

The Significance of Some Urinary Constituents, by J. Bergen Ogden, M.D. (See page 893.)

Book Reviews.

X-Ray Diagnosis and Treatment. A Text-Book for General Practitioners and Students. By W. J. S. Bythell, B.A. (Cantab.), M.D. (Vict.); Hon. Physician to the Ancoats Hospital, Manchester (Electrotherapeutic Department); Medical Officer to the *X*-Ray Department of the Manchester Children's Hospital; Medical Officer to the *X*-Ray Department of the Salford Royal Hospital; and A. E. Barclay, M.D. (Cantab.), M.R.C.S., L.R.C.P., Medical Officer to the Electrical and *X*-Ray Departments, Manchester Royal Infirmary; Late Clinical Assistant to the Electrical Department of the London Hospital. Price $5.50. London: Henry Frowde, Oxford University Press; Hodder & Stoughton, 1912.

This volume is written for the general practitioner, and not for the *x*-ray specialist. The entire subject of *x*-ray diagnosis and treatment is presented in such manner that the general practitioner can gain an adequate working knowledge of this valuable resource. The authors emphasize the fact that "the rays are, as it were, a new sense added to the other five; they do not in any way relieve us from the necessity of training ourselves in the use of the old-established methods of observation that may be used equally well at the cottage bedside or in the wards. Although by themselves the rays may be of value in diagnosis, yet their range of utility and the accuracy of the information given becomes greater and greater the more we combine the information available from every source." The subject-matter of this book is subdivided under the following headings: the *x*-rays and their use in medicine; injuries of bones and joints; diseases of bones and joints; examination of the bones and joints in children; examination of the head; the detection of foreign bodies; examination of the thorax; examination of the abdomen; examination of the urinary system; *x*-ray therapeutics; and *x*-ray apparatus and technique. After each chapter there is a series of full-page plates showing *x*-ray photographs illustrating the important topics discussed in the chapter. These plates are consummate for their clearness and beauty of reproduction. There is a total of 118 illustrations. A mere examination of the latter, together with a perusal of the descriptions accompanying them, will give one a fair knowledge of *x*-ray diagnosis. Of particular interest are the plates illustrating pathological conditions in the thorax and abdomen. The authors are to be congratulated upon the excellent manner in which they have handled this difficult subject. The paper, binding, typography, and general artistic features of this work are in keeping with the excellence of its text.

Emergency, Medical and Surgical Aid. What to do and What Not to Do. A manual of first aid for laymen, with special reference to industrial accidents. By Ernest A. Wells, M.D., Associate Medical Director, Ætna Life Insurance Company; formerly House Surgeon, the New York Hospital; Assistant Attending Surgeon Hartford Hospital; Member American Medical Association, American Academy of Medicine, etc. Hartford: Ætna Life Insurance Company, 1912.

This is a convenient pamphlet, describing in simple language and with the aid of photogravures the principles of first aid, with special reference to industrial accidents. The subjects are arranged alphabetically with marginal headings. Such subjects are included as the treatment of electric shock, dog bites, internal hemorrhage, caisson disease, etc. This little book may be recommended as an excellent presentation of the subject.

Einführung in die Lehre von der Bekämpfung der Infektionskrankheiten. Von E. v. Behring. Mit Abbildungen in Text, Tabellen und farbiger Tafel. Price 15 marks. Berlin: Verlag von August Hirschwald, 1912.

The field covered by this volume is a large one. The author has played such an important part in the development of modern sanitary science that his description of the science of fighting the infectious diseases acquires an added importance and interest. The evolution of this subject is fully dealt with. Chapter I discusses the terminology and the historical aspects of the infectious diseases. In Chapter II the author describes the infectious poisons, forms of virus, portals of invasion, incubation, specific proteolysis, and toxic caryolysis. Chapter III includes a review of the historical aspects of therapeutics; the Hippocratic system, allopathy, homeopathy, and symptomatic therapy, Sydenham and the specific medicaments, empirical isopathy and isotherapy, etiological therapy, Jenner's vaccination, Pasteur, the bactericidal antibodies, the antitoxic theory, and the history of the anti-infectious action of the blood. In Chapter IV the history of antitoxic antibodies is set forth. This includes the history of the discovery of the diphtheria antitoxin. The serum treatment of this disease is dealt with more extensively in the following chapters. The succeeding chapters deal with the following subjects: Anaphylaxis, modes of combating poisons; antitoxic tetanus therapy; the knowledge of diastatic processes; phagocytosis; blood investigations; tuberculosis and its control, and disinfection. The volume contains a mine of information that cannot fail to be of value to all students and laboratory workers interested in the campaign against the infectious diseases.

Arteriosclerosis. Etiology, Pathology, Diagnosis, Prognosis, Prophylaxis, and Treatment. With a Special Chapter on Blood Pressure. By Louis M. Warfield, A.B., M.D.; Assistant Superintendent and Resident Physician to Milwaukee County Hospital; Assistant Professor of Medicine, Wisconsin College of Physicians and Surgeons, Milwaukee, Wis.; formerly Medical House Officer, Johns Hopkins Hospital, Baltimore, Md.; Member American Medical Association. With an Introduction by W. S. Thayer, M.D., Professor of Clinical Medicine, Johns Hopkins University. Illustrated with twenty-eight engravings. Price $2.50. St. Louis: C. V. Mosby Company, 1912.

This work in its present form represents a careful revision of the first edition that appeared four years ago, and contains two new chapters on "The physical examination of the heart and arteries" and on "Arteriosclerosis in its relation to life insurance." The growing importance of the clinical recognition of arteriosclerosis imparts considerable value to this volume. This is well written, and with its numerous illustrations serves as an admirable guide to the general practitioner seeking light on this subject.

The Sexual Life of the Child. By Dr. Albert Moll. Translated from the German by Dr. Eden Paul. With an Introduction by Edward L. Thorndike, Professor of Educational Psychology, Teachers' College, Columbia University. Price $1.75 net. New York: The Macmillan Company, 1912.

To quote the language of the introduction, the author "has undertaken to describe the origin and development, in childhood and youth, of the acts and feelings due to sex; to explain the forces by which sex responses are directed and misdirected; and to judge the wisdom of existing and proposed methods of preventing the degradation of a child's sexual life." The subject matter is dealt with under the following headings: introductory and historical; the reproductive organs—the sexual impulse; sexual differentiation in childhood; symptomatology; pathology; etiology and diagnosis; importance of the sexual life of the child; the child as an object of sexual practices; and sexual education. No one can deny the importance to the physician, to the educator, and even to the parent, of a knowledge of the subjects touched upon in this book. The authority of Dr. Moll, coupled with his delicate though fearless handling of this difficult topic, has succeeded in presenting a book of permanent value.

Fresh Air and How to Use It. By Thomas Spees Carrington, M.D., Assistant Secretary of the National Association for the Study and Prevention of Tuberculosis; Author of "Tuberculosis Hospital and Sanatorium Construction." Price $1.00. New York: The National Association for the Study and Prevention of Tuberculosis, 1912.

This volume is published under the auspices of the National Association for the Study and Prevention of Tuberculosis as a means of supplying the demand for information as to methods of obtaining fresh air. It is remarkable to what extent even the city dweller is able to secure the advantages of living in the open air. The following chapter headings indicate the wide scope and usefulness of this volume: ventilation, window tents, roof bungalows, wall houses and iron frame porches for city use, temporary fresh-air porches for country use, permanent sleeping porches and loggias for country homes, methods of protecting and screening porches, tents, and tent houses, open-air bungalows and cottages, suggestions for planning new houses with open-air apartments, roof playgrounds for children, and clothing, bedding, and furniture. The book contains a large number of illustrations which admirably supplement the text. There is no doubt that the author has a complete mastery of his subject and that he has supplied a distinct want in the preparation of this admirable volume.

Society Reports.

CLINICAL CONGRESS OF SURGEONS OF NORTH AMERICA.

Third Annual Session, Held in New York, November 11-15, 1912.

(Special Report to the MEDICAL RECORD.)

Monday, November 11—First Day.

THIS meeting was opened by Dr. GEORGE E. BREWER of New York City. He said that there were present the largest body of surgeons that had ever met in the history of the world. There was nothing spectacular to be shown and those who expected to see extraordinary operations, rare methods, and unusual cures would be disappointed. What was wanted was to demonstrate the methods employed in daily usage with a maximum of safety and the minimum of discomfort to the patient. To this end they hoped to demonstrate laboratory work, serum therapy, *x*-ray methods, and the methods of pathological examination. Dr. Brewer then introduced the president, Dr. Albert J. Ochsner, of Chicago.

Dr. OCHSNER said that the large attendance at the Congress was a great inspiration. New York had always been a surgical center, but never more so than at the present moment. There was a time when wealth, victory in combat, or personal aggrandizement was the measure of man's greatness, but now personal service was the prime element of achievement. About a half century ago teachers grasped this fact and impressed upon their pupils that education must include ethical development. A willingness to render service was more profitable to him who received than to him who gave. If they were here only to improve themselves personally, this Congress was a failure, but if it gave better service to the people, then it was a useful element in American progress. Many important facts would be carried by the men to their homes all over the country, which would be utilized for the welfare of the public. Among the younger men there were surgeons who were doing excellent work and this congress gave them an opportunity to demonstrate their methods. They thus learned to appreciate each other's work and were stimulated by mutual comparison to do away with provincialism. He felt confident that witnessing the clinical work would stimulate them to a greater amount of scientific reading. The great surgeons of this country had very generally acquired their knowledge and skill after leaving medical school. If one should select ten men who rank highest, not more than three or four would be found to have a university education. It was the men who had been inspired and who worked constantly who had risen to high rank. Better opportunities would be provided for the next generation. After expressing his appreciation for the honor conferred upon him in being president of the strongest body of men in the profession, he said it gave him great pleasure to present his successor, a man who had done much—in fact, no one had done quite so much as the president-elect—for the development and advancement of this Congress, Dr. Edward Martin of Philadelphia.

Dr. MARTIN then introduced some of the visiting delegates, among them Dr. Otfrid Foerster of Breslau, Germany, Prof. W. Arbuthnot Lane of London, Dr. J. B. Murphy of Chicago, ex-president of the American Medical Association, Dr. Robert F. Weir of New York, Dr. Abraham Jacobi, the present president of the American Medical Association, and Dr. John B. Witherspoon of Nashville, Tenn., the president-elect of the American Medical Association.

Dr. JOHN B. MURPHY, in responding to the introduction, said he had only been told a half hour before that he was to speak and this was not fair to the audience and most unjust to him. However, he could not let the opportunity pass without congratulating the Congress for the magnificent enthusiasm and earnestness of this body of men. He mentioned the name of Dr. Franklin Martin of Chicago, who, he said, should not be forgotten, as he was the founder and perfecter of the organization. He wished everyone to consider the cost of this meeting and its value to those who attended. Each one spent from two to six per cent. of a year's time, to say nothing of the expense. As to the return received, each surgeon was brought face to face with the best teachers and clinical opportunities that the present time offered. They each received an inspiration and each became in his own locality a standard of medical procedure and practice. This organization surpassed anything so far thought of for standardizing the principles and practice of surgery.

Dr. WEIR expressed his admiration for clinical work and believed that great possibilities for progress lay in this direction.

Dr. WITHERSPOON said he was glad to be welcomed at a meeting of men who had made surgical progress the marvel of the age. He said it was an inspiration to all and he was glad to be one of those to welcome visitors and to give his congratulations to the surgeons of America, who formed one of the grandest bodies of life-savers in this country. The American Medical Association was proud of her child, the Surgeons of North America.

Treatment of Hepatic Cirrhosis.—Dr. EDWARD MARTIN chose this as the topic of his presidential address. He said that in the surgical treatment of this condition the first element was the approach, which must be advantageous for sight, touch, and manipulation. The second point of importance, and one which had retarded the surgery of the liver so that it was far behind that of the kidney, was hemorrhage. In many pathological conditions of the liver, the tissue was brittle and yielded to local trauma, but it was resistant to wide pressure. This organ possessed no mechanism for stopping hemorrhage, but rather favored it, since the large vessels were held open by attachment to the parenchyma. The blood pressure could be quite easily controlled by pressure on the vessels with the finger. They had experimented on the cadaver by taking a liver and attaching it to a water supply and had found that manual pressure effectually controlled the flow. Another method of controlling hemorrhage was by stitching around the area to be controlled. He used a needle about the size of a knitting needle, with a blunt end, so that he could feel his way and avoid large vessels. The needle was provided with a socket into which could be screwed an attachment carrying the thread and could be bent to any angle. The thread acted as a pack in case of small hemorrhage from the needle puncture. He used triple and quadruple catgut and with the mattress suture they could stitch around practically every wound. If it was found that the tissue was brittle, a strip could be cut from the rectus and placed on the liver wound and stitched through. He had found these muscle flaps excellent homostats. They had found decapsulation an excellent procedure in kidney surgery and it seemed rational that it might be an advantageous procedure in hepatic cirrhosis. In performing a decapsulation on the liver, one got more superficial trauma than with the kidney. Dr. Martin believed that ascites was an advanced condition of hepatic cirrhosis and was not due to back pressure, but to the diseased condition of the endothelium of the peritoneum. As a remedy for this condition he had endeavored to modify the collateral circulation and for this purpose had selected the cava and iliac vein and had made an anastomosis between these vessels. This had not been done on the living subject, but had been successful on the cadaver. Dr. Martin gave a lantern slide exhibition showing methods of making the incision and the details of this operation. The incision which he recommended was a vertical one through the rectus muscle to within two fingers' breadth of the umbilicus, and then transversely a second incision at right angles to the first. This gave abundant exposure and plenty of room for manipulation.

The Relations of the Biochemical Functions of the Liver to Surgery of the Liver.—Dr. ALONZO TAYLOR of Philadelphia read this paper. He said that the functions of the liver might be divided into three groups: (1) Digestive. (2) Glandular or secretory. (3) Metabolic. He stated that the surgical possibilities of any organ depended upon the specificity of its functions and upon the degree of susceptibility of the function to compensation. The apparently indispensable function of the liver was the glandular; the other two functions were susceptible of modification and compensation. He then considered in detail the relation of the function of the liver to the outside circulation and to the portal circulation. The question arose, might not all the functions be performed through the arterial system? After showing that compensation seemed possible for all functions except the glycogenic, he said that if the liver failed to perform the glycogenic function levulose appeared in the urine. Some compensation for this might be made by regulating the diet and limiting the amount of cane sugar, fruit, and honey. He also showed that in the storage of glycogen the muscles exceeded the liver. He then went on to discuss the digestion of proteids in the liver and said that evidence failed to support the theory that the liver function was absolutely necessary for the disposition of the proteids. These were

largely cared for by the small intestine. Recently it had been shown that the blood of the portal vein contained amino acid and that this passed through the liver unchanged. He had shown by experiments on dogs that the formation of urea proceeded after complete removal of the liver. The weight of evidence, therefore, showed that the glandular function could be partially replaced, even though the portal circulation was cut off. In regard to the nutrition of the liver itself, it seemed logical that this should be dependent upon the arterial supply. A knowledge of the hormones produced by both the arterial and the portal circulation might help to throw light on this subject, but thus far they had no practical knowledge in regard to these.

Surgery of the Spleen.—Dr. WILLIAM J. MAYO of Rochester, Minn., read this paper. He said that we had acquired a fairly exact knowledge of the functions of all the organs contained in the abdomen with the exception of the liver and the spleen—two organs which were closely associated in their physiology and pathology. The liver was essential to life, one of its chief functions being to receive the products of gastrointestinal absorption and change them into tissue building material. The spleen was not essential to life. It performed for the general circulation a function somewhat analogous to the digestive organs, namely, removing from the circulation broken down blood corpuscles and other material of probable nutritive value which was sent as part of the portal circulation to the liver for further elaboration. It was also concerned in the metabolism of iron. In its ontogeny the spleen probably went back to a time before the development of the cerebrospinal nervous system had become a controlling factor. This was indicated by the fact that its only known nerve supply consisted of filaments derived from the splanchnic sympathetic system to the capsule, stimulation of which caused contraction. The spleen was an organ or internal secretion controlled by chemical stimulation through the blood stream. Evidently the internal secretion of the spleen was not important since splenectomy did not produce serious results, the associated organ taking up the function. The liver destroyed poisons both chemical and bacterial and stood as a gigantic defense of the general circulation. Processes in the liver which interfered with function were often accompanied by changes in the size and parenchyma of the spleen, while primary splenic enlargements were sometimes accompanied by secondary cirrhosis of the liver, as was seen in the late stages of splenic anemia. It was probable that cirrhosis of the liver was caused by poisons sifted from the general circulation by the spleen, or by poisons from the digestive tract, carried by means of the portal circulation to the liver. While the spleen appeared to have the function of destroyer of obsolete red blood corpuscles, it did not appear to have the power to destroy the microorganisms it captured, but delivered them to the liver for destruction and in the perversion of this dual function most of the diseases common to the spleen had their origin. With the present insufficient methods of diagnosis diseased spleen was not often mapped out until its size was made manifest on palpation beyond the free border of the ribs. In speaking of splenic enlargements Dr. Mayo said that these enlargements with an excess of white corpuscles were characteristic of myelogenous leucemia and the microscopical examination of the blood was essential to the diagnosis. Leucemia appeared to be a reversion to the embryonic type of blood in which all of the original blood-making organs had to do with the overproduction of the white cells. The blood picture in leucemia was well known. The leucemic spleen had been removed a number of times and in all of the cases in which the diagnosis had been established the patient promptly died as a result of the operation. Since the leucemic spleen was but part of the general condition, splenectomy would be unavailing. Splenic anemia was probably a definite entity. This condition was described as a progressive disease characterized by an enlarged spleen, by a reduction in the number and value of the red blood corpuscles and low hemoglobin, and often by a reduction in the number of white corpuscles. Clinically the disease might be accompanied by hemorrhages, especially from the stomach, by progressive weakness, and often by pigmentation of the skin and chronic jaundice. Splenic anemia was apparently due to hyperplasia of the spleen, and if the disease was uncomplicated, removal of the enlarged spleen cured the patient. Banti's disease was simply a late form of splenic anemia. As a rule, the red blood corpuscles dropped below 4,000,000, often to 3,000,000, and the hemoglobin to the vicinity of 40 per cent. The white corpuscles varied from 3,500 to normal. After removal of the spleen the blood picture became more nearly normal. At St. Mary's Hospital they had removed the spleen in eighteen cases of splenic anemia with most gratifying results. Perisplenitis or hepatic cirrhosis with perihepatitis might be present in these cases so that the spleen could not be removed without enormous risk to life. Following splenectomy, there was pain for a time in the long bones in about 25 per cent. of their cases, and in one or two cases a temporary enlargement of the lymphatics; this was evidently a compensatory hypertrophy of the bone marrow and glands. The speaker next considered conservative splenic enlargements referring to those due to malaria, syphilis, typhoid, and tuberculosis. Those enlargements due to animal parasites were treated by specific poisons, as quinine for the plasmodium of malaria. In a few cases of tuberculosis, when the infection was apparently primary and limited to the spleen, the spleen had been removed with cure of the patient. Franke had reported 29 cases of tuberculosis of the spleen, 10 of which were operated upon with seven cures. It had been necessary to remove the spleen in some cases of chronic malaria and Jonnesco and other surgeons had removed the spleen in such cases with gratifying results. A spleen which had developed a complete mesentery, permitting of a wide range of motion, was not common. Rotation of the spleen, completely cutting off the circulation, had occurred in a number of cases leading to death or splenectomy. Several operations had been devised for reducing or holding a movable spleen in a normal position, but, generally speaking, splenectomy was the wiser plan in this class of cases. Splenoplexy did not always relieve symptoms and splenectomy was exceptionally easy and safe. They had operated on three cases of movable spleen, one by fixation after which the patient suffered more or less pain. In the other two cases the organ was completely removed and a complete cure followed. Sarcoma was the type of primary malignant disease of the spleen and was rare. Pathologists were divided in their opinion as regarded these tumors; some held that they were sarcomas and others that they were a type of hyperplasia. One patient with lymphosarcoma of the spleen was operated on at St. Mary's Hospital, November 14, 1905, and was still in excellent health to-day. Three cases of the Weichselbaum and Gaucher type of splenic tumor which they had operated on, were clinically splenic anemia. Two had remained well since, one dying from the operation. As a rule, disease of the spleen was far advanced before a diagnosis was made and usually the entire organ was involved, making splenectomy the only rational procedure. An incision was made in the outer margin of the rectus muscle extending from the costal arch downward until there was a space sufficient for manipulation. On opening the abdomen the hand was passed over the spleen under the diaphragm and if adhesions were present they were, if not too firm, broken down by the hand. The spleen could then be brought entirely out of the abdominal incision. A large gauze pack was carried into the cavity from which the spleen had been removed. The spleen was then steadied and all the attachments tied and divided until it remained attached only by its vascular pedicle. A rubber-covered elastic clamp of the lower variety was placed on the pedicle about three inches from the spleen. The vessels could then be divided close to the spleen into three or four sections and ligated carefully with catgut before the holding clamps were removed. The clamps were loosened gradually, the large guaze pack removed and bleeding points in the deep cavity closed with catgut on a fine needle. Accessory spleens were frequently found in the pedicle, but if the primary disease was benign they might be conserved. The mortality following splenectomy had been estimated at from 18.5 to 27.5 per cent. Carstens reported 730 cases with 137 deaths; Johnson found a mortality of 27.4 per cent. in 708 cases. Under present conditions the mortality was much smaller than these statistics seemed to indicate. The mortality should not be above 10 per cent. and possibly not above 5 per cent. In their 27 cases there were two operative deaths.

Dr. CHARLES H. PECK of New York, in discussing Dr. Mayo's paper, said that he hesitated to say anything as the subject had been so well covered. Trauma of the spleen or ruptured spleen was most apt to occur from severe crushing injuries. The symptoms were obscure and were largely those due to shock and hemorrhage. The indications for treatment in these cases depended on the severity of the symptoms. There were some instances of spontaneous recovery. A most important point was the control of hemorrhage and this was usually done by the gauze pack. If the hemorrhage was severe, splenectomy was indicated. In a series of 150 cases which had been operated upon, there were 99 recoveries and 51 deaths. This high mortality was due to exsanguination and shock, as

removal of the spleen in itself produced but little injury to the organism. Splenectomy had given brilliant results in splenic anemia and Banti's disease. Dr. Peck then related the history of a case of congenital hemolytic jaundice in which cholecysostomy had been performed without giving relief, and later a second exploratory operation had been done and no abnormalities of the biliary passages found. Finally a diagnosis of disease of the spleen was made and an examination of the blood showed a remarkable fragility of the red blood corpuscles. The spleen was removed and the jaundice began to diminish three days later and ten days after the operation it had disappeared and had not since returned. While the cases demanding splenectomy were rare, the experience of the past ten years had placed them in possession of the indications for this operation.

Dr. Abraham Jacobi, in response to a request from the president, said he wished to say a word for cooperation. He believed in the fraternity of the medical sciences and of those who worked in them. Formerly surgeons worked only with the knife, but now surgeons had other tools—the expert brain and the heart. It was formerly said that operations were the reproach of surgery, but this was not true to-day because they now did better and more successful work. Fraternity among surgeons meant the equalization of all sciences and art, and if they wished to see this they should come to the American Medical Association; in fact, they should all belong to that organization.

Tuesday, November 12—Second Day.

Anesthesia and Anoci-Association.—Dr. George W. Crile of Cleveland delivered this address. He stated that by this term was meant a condition in which all harmful effects to both the sensory and sympathetic nerves were excluded. He said that in general anesthesia all the cells of the brain were not anesthetized or death would ensue. There were a large number of brain cells that responded to trauma of the nerves. Thus the stored energy of the brain cells that did not go to sleep during anesthesia was consumed during operation, and how to avoid this drain on the brain cells was one of the problems of surgery. Dr. Crile reviewed the action of the various anesthetics in general use and showed that while each had its special field none alone could produce anoci-association. Therefore it was by selection and combination that they aimed to obtain an anesthetic which would exclude all stimulation and not lower the threshold of anoci-association. The lecture was liberally illustrated by lantern slides by which Dr. Crile demonstrated the effect of the different anesthetics on the brain cells. Nitrous oxide anesthesia showed some deleterious effect, while ether showed an enormous loss of power. The reason of this was that when the patient was under nitrous oxide anesthesia the brain cells were unable to burn up oxygen and this was because the amount of oxygen was limited. Harmful effects of anesthetics were due to both the psychic factor and the traumatic. Dr. Crile then explained how he used novocaine in the operative field at each stage of the incision; this served to block the nerves so that they did not report what was going on in the field of operation. If operating in the abdomen, when he reached the peritoneum, he used quinine and urea hypochloride. When this was properly used the walls of the abdomen remained relaxed. The speaker then showed charts of a large series of operations, embracing hysterectomies, appendectomies, thyroidectomies and herniotomies, in which he had used these agents to produce anoci-association. Both the temperature and pulse were better with the blocked field and the effect of the quinine and urea hypochloride lasted two days after the operation. He had come to believe that postoperative fever was not due to absorption from the wound, but to psychological causes. In doing thyroidectomies the postoperative hyperthyroidism was often a great danger; he had found that under anoci-association anesthesia there was a small degree of change. An appendectomy could be done under this form of anesthesia by blocking the mesoappendix and the abdominal wall with quinine and urea hypochloride. This method did away with postoperative gas pain. This method of blocking the operative field could not be used in acute infection or in cancer. Dr. Crile concluded that a comparison of the effects of different anesthetics in his series of one thousand cases showed that this procedure reduced morbidity, and if it reduced morbidity it also reduced mortality. In the Lakeside Hospital the mortality rate for all operative procedures was six per cent. for all cases in 1898, 4 per cent. in 1908, and under anoci-association anesthesia they had reduced it to two and one-half per cent.

Dr. George D. Stewart of New York, in discussing Dr. Crile's paner, said he would have to disagree with Dr. Crile or else agree and then apologize for not using his method. Dr. Stewart recalled that some fifteen years ago Dr. Crile had read a paper in which he attributed surgical shock to vasomotor disturbances and lowered blood pressure. Up to that time everyone had his own theory. Dr. Crile had gone on from one brilliant theory to another until he gave us this one of brain cell modification. Dr. Crile told them they must block the operative field in order to take care of the wide-awake brain cells. Was there a physical basis for this theory? And, again, were there changes? He said he would accept these questions as answered in the affirmative, since he could not disprove them. He would also accept the proposition of fear as an element to be overcome, but was not the surgeon who inspired his patient with confidence at the time of an approaching operation practising anoci-association? They would all accept that point of view. With reference to the blocking, it was admitted that the effects of cocaine and novocaine were very transient indeed. He had used cocaine and found very little less pain after its use than without it. Dr. Crile had said that ether was sometimes bad and that nitrous oxide was better. They might assume that that was correct, but why, then, were they not all following Dr. Crile's method? First, because the time element was important and this method recommended by Dr. Crile added enormously to the time, and he preferred the general anesthetic which allowed him to hurry through the operation. Secondly, with nitrous oxide he had always, or nearly always, failed to secure complete relaxation. Some one had suggested nitrous oxide and oxygen and that when the patient began to come to he should be given more. He did not wish to have his patients coming out of the anesthetic during operation. He thought it must be admitted that ether was very satisfactory in most cases. In several series of cases with which he was acquainted a comparison of temperatures and pulses under different anesthetics had shown insignificant differences. Dr. Stewart expressed his admiration for Dr. Crile as a wonderful technician.

Indications and Results of Excision of the Posterior Spinal Roots in Man.—Professor Otfrid Foerster of Breslau, Germany, spoke on this subject. After thanking the audience for the welcome he had received and congratulating the surgeons of America on the perfection of surgical technique that had been reached he expressed the hope that Germany and America would continue as they always had done, to go ahead hand in hand. "They all belonged to the commonwealth of science." He stated that the indications for resection of the posterior spinal nerve roots were based on the physiology of sensibility. In reviewing the history of this operation he recalled that Dr. Dana of New York had been the first to employ it, in 1888, for ascending neuritis. Many of the failures occurred because not enough roots had been divided; it was formerly believed that it was sufficient to divide three or four roots, but such a resection did not affect sensibility. He advised the resection of from seven to ten nerves, according to the indications. The location of the pain should decide whether the operation should be extended in the upward or downward direction. He had done 44 posterior spinal nerve root resections for pain with six deaths. Of these, 22 were cervical cases and 11 thoracic. He had performed the operation for plexus neuralgia in 15 cases, for traumatic neuritis in 5, arteriosclerosis in 2, herpetic neuritis in 2, cancer or sarcoma in 7, and once arachnitis, athetosis, tuberculosis, and phlebitis. He had had 12 successes and 23 failures. He had done the resection for gastric crises in 64 cases with six deaths. Here he had had 56 successes and six failures. There had been no relapse in 29 cases, 13 were considered improved, and 9 unimproved. He had done root resection for spasticity in 150 cases, with 14 deaths. He had done 88 of these operations for congenital spastic paraplegia and the results were excellent; for hydrocephalus, 3 times; infantile spastic paraplegia, 3 times; for syphilitic spinal spastic paraplegia, 6 times, but in the latter condition the operation should only be undertaken after specific treatment, and if this was successful then the prognosis for the operation was good. He had also performed resection in disseminated arteriosclerosis 6 times and in spastic arm paralysis 23 times. The operation had been done quite often for the gastric crises of tabes and in some instances the results had been excellent, the patients being able to resume their usual employments; in other instances it had been a failure. Not all forms of gastric crisis were amenable to this operation, as the condition might be due to disease of the pneumogastric ganglion. Dr. Foerster illustrated his paper with numerous lantern slides and described his method of determining which

nerve roots should be resected by applying electric stimulation to the nerves in the field of operation. Resection was not suitable to cases of idiocy as the after treatment required a certain amount of intelligence and long training in order to acquire some degree of function. The arm paralyses were not very suitable for operation, especially the very severe spastic paraplegias.

Some Problems and Procedures in the Surgery of the Spinal Canal.—Dr. CHARLES H. FRAZIER of Philadelphia read this paper. He was of the opinion that surgery of the spinal column had not attracted the attention that it deserved. The accessibility of the cord on every aspect and the absence of vital organs served to make operations on the cord safer than on the cranial contents. Allen in his work with fractures where there was contusion of the cord showed that relief could be given by incision of the cord at the seat of the injury. His results had been brilliant and striking and while the speaker said he had not been so successful himself he nevertheless wished to report a case in which there was a fracture of the third dorsal vertebra. After incision there was a rush of bloody fluid, and while there had been a return of sensation, there had been no return of muscular power. Cases for operation must be carefully selected. He had found that tumors of the cord lent themselves readily to operative procedures. Relief from pain might be secured in operable tumor no matter what its origin. He described a case in which resection had been done for relief of pain in operable cancer of the breast which had involved the brachial plexus, the patient obtained relief of pain for a long period and the relief obtained made the operation seem well worth while. He said he would not consider spasticity and the gastric crises of tabes as these subjects had been so thoroughly covered by Professor Foerster. He thought, however, that in the gastric crises of tabes the operation should not be done until all other measures had failed and they should remember that there were cases which would not respond to mercury which would respond to salvarsan. The intradural method of operation was preferable to the epidural. The results of the operation were very variable; in some instances the pain persisted, in others it was partially relieved; in some cases there was anesthesia and in some hyperesthesia. The anterior nerve roots played some part in carrying afferent impulse and this might account for the persistence of pain. He described his method of making an end to end intradural anastomosis and the combinations that were feasible. This procedure might be made applicable to poliomyelitis. The free escape of spinal fluid was not necessarily a danger, but it was an annoyance which might be obviated by placing a pledget of cotton between the dura and the cord. The patient might also be placed in a position with the lower portion of the body elevated so that the force of gravity might exercise some control over the flow of spinal fluid. The position with the face down was also a disadvantage as the weight of the body disturbed respiration, especially under anesthesia. The patient might be changed to the lateral position. An investigation as to the amount of expired air in the dorsal and face down positions showed that the proportion was as ten to seven in favor of the dorsal position. In these cases Meltzer's intratracheal insufflation was indicated. The two stage operations could be used if necessary. The external line of incision should not be directly over that in the aponeurosis. Unilateral laminectomy had no particular advantages. Dr. Frazier gave a lantern slide demonstration of his method of operating and of suturing the wound in three tiers. He did not generally use drainage, but in one instance had left drainage for eighteen hours and in this case he had infection which he attributed to the drain. These operations required great delicacy of touch and the fact should be emphasized that there was no manipulation that did not produce harm, and that the manipulation of the cord was distinctly harmful, especially handling of the ventral roots. The differentiation and separation of the roots had a bad effect. He thought it would be an improvement if some effective block was introduced and suggested a 4 per cent. solution of stovaine.

Surgery of the Spinal Cord from the Neurological Standpoint.—Dr. D'ORSAY HECHT of Chicago discussed this topic. He stated that the subject assigned to him was too wide and that he would continue himself to a consideration of the surgery of the spinal cord in relation to the tumors. In the surgical treatment of the spinal cord their mistakes were due to inaccuracies of diagnosis, especially in the chronic diseases of the cord. They must have a better understanding of the newer clinical distinctions. In serous meningitis he took issue with the textbook view that treatment should be largely surgical. Their diagnoses were not clinically refined and they could not advance far until more of the psychical side was put before them. There was one sign that deserved mention in spinal cord cases, namely, the presence of a yellow fluid, which coagulated rapidly, and had an increased cell count. In reviewing the literature he had seen many cases much at variance with the textbook statement before referred to. A spinal osteoarthritis was a local process that could be relieved by laminectomy. One condition sometimes regarded as a tumor was multiple sclerosis. The most of the errors in diagnosis were made in the early stages of disease when the symptoms did not follow the usual classical picture. In some cases of tumor the pain became radiating fulgurant, continual, and intense and the physician might look on them as a vagrant form of neuralgia; even when he found the pain bilateral he might continue to think it neuralgic. Tumor of the cord might be present even if pain was absent, but the objective sensory disturbance was of value, especially if it was of segmentary type. As to anesthetic areas, their line of demarcation was never as definite in spinal tumors as in other conditions. One frequently found these tumors situated lower than was anticipated and a wide laminectomy should be done. Not infrequently the typical syringomyelitic sensory syndrome was present. Sensory disturbance alone was no contraindication to operation. Some of the queer complications of spinal cord tumors that had come to his attention were optic neuritis and symptoms of hydrocephalus. Edema of one or both legs was not an uncommon symptom of spinal cord tumor. In circumscribed spinal meningitis many improvements had been made in the classification and the future was promising from a clinical standpoint. He compared circumscribed idiopathic intraspinal cyst with tumor and said that their differences were not yet solved. These cysts very closely resembled tumors. The clinical attributes of circumscribed spinal meningitis were symptoms of greater diffuseness and greater variability. The plea from the neurologists was for early surgical interference in cord tumors and symptoms suspicious of tumor. They urged this because the operative field offered fewer barriers than that of brain surgery and the prognosis was better than it ever could be in brain tumors.

Dr. ALFRED S. TAYLOR of New York City discussed Dr. Foerster's paper. He thought this paper would arouse more interest in this subject in this country and his own experience led him to make no objection to the statements made in that paper. He strongly advocated hemilaminectomy in exposing the cord and said that this enabled the operator to see the dorsal side of the cord without difficulty and to perform his operation with but little manipulation. If the tumor was too large to be removed by hemilaminectomy then they could open the other side. When a hemilaminectomy had healed nothing but the *x*-ray would disclose any abnormality. When, during operation, there was blood in the arachnoid coming from crushed nerve roots this could be controlled by clamps. A local anesthesia possessed advantages in these cases. In some cases of paralysis they had found it an advantage to divide a portion of each root and then to skip the third one. If a wide laminectomy was done it should be compensated for by relief of pain and he had known a number of cases where the laminectomy was very wide and yet there was no relief of pain. He knew of a case where anterior section also failed. Neurologists said that the pain was a psychic memory in these cases. One should approach a resection of the pneumogastric ganglion with much caution. These cases that suffered from so much pain should be sent to the surgeon before they became drug fiends if they were again to become useful members of society. While the spastic cases of the upper extremity did not give very good results, they did yield some results, the operation relieved the spasticity and usually the pain. He had had two mortalities in a series of twenty cases. He never used drainage. The operation relieved the spasticity, but this merely prepared the way for long after treatment which was necessary for any restoration of function. The improvement in the mental condition and disposition of these cases was remarkable after operation and was attributed to relief from the continued muscular strain and nerve irritation.

Dr. CHARLES A. ELSBERG of New York said that the surgery of the spine was now coming into its own and that it was true that the results were far above those obtained in brain surgery. There were a large number of diseases of the spine besides brain tumor which were amenable to surgical treatment. He believed, contrary to Dr. Taylor, that in very few instances was hemilaminectomy the operation of choice. Every time they touched the cord they did harm and therefore they should have as wide an exposure as possible. There was often a low grade meningitis which extended into the roots above the

incision, and if they did not get all of the roots thus affected the pain might persist. Dr. Elsberg believed that a two-stage operation was often necessary. First, when the operation was high up under the occipital bone, for when one opened the canal he caused a difference in pressure conditions. Secondly, when operating on intermedullary tumors, one should allow the tumor to be outside of the cord and close up the wound as though the operation was completed. The excluded tumor could be removed later and sometimes one got a cure. In case of fracture of the spine, Dr. Elsberg thought it best to be conservative. If one had a serious injury to the cord nothing could help it in the way of surgery. If there was only a partial lesion one could safely wait unless there was need of decompression because of bone pressure on the cord. Where the injury was not too serious some of these cases improved in the course of a year or two. In deciding whether it was worth while to resect posterior roots for pain in any case, the speaker had followed the practice of injecting stovaine up into the canal, and if this gave no relief operation was useless. He was in sympathy with those who said that a long laminectomy should be done. In closing he called attention to the importance of a recognition of the anatomical relation of the ligamentum denticulatum.

Dr. Albert Bauer of Breslau, Germany, closed the discussion. He cited several series of cases in which the average mortality in these operations was 7½ per cent. He also reported a number of cases where a two-stage operation would have given better results than were obtained by a single operation. He did not think the danger of infection in a two-stage operation was as great as had been claimed.

Wednesday, November 13—Third Day.

The President introduced Surgeon-General Stokes of the U. S. Navy as a guest who in his response informed them that the bill providing for a reserve corps of surgeons had been passed and that in the event of war he would expect to call on this body.

Dr. Richard R. Smith of Grand Rapids, Mich., then gave a "Description of the Enteroptopic Woman." He said that visceral prolapse was always accompanied by other abnormal structural changes and these needed the same attention as the prolapse itself. He then described the two types of enteroptosis congenital and acquired. The congenital type consisted in those who were lacking in vitality from infancy and showed defective development, frequently of the framework of the body as well as of the visceral organs. The causes of this condition were frequently hereditary and due to insufficient nourishment. The acquired type consisted in those who developed this condition through malnutrition, faulty posture, childbirth and overwork. The size and shape of the thorax would often give information as to the origin of the condition. The shallow-chested, stoop-shouldered individual, who sometimes had a slight spinal curvature, usually belonged to the first type. Dr. Smith gave a lantern slide exhibit of radiographs showing typical enteroptic stomachs, sinking hepatic and splenic flexures and displacement of the colon. Many of the displacements were due to the great laxness of the supports of the abdominal viscera. In children the ptoses were slight but there was sometimes a sagging of the lower pole of the stomach; there was never found movable kidney in young children. A stable nervous system was the greatest asset in the treatment of these cases, and this being given a great deal could be done by the institution of proper hygiene. Where the nervous system was unstable therapeutic measures seemed hopeless. Dr. Smith then discussed the psychic disturbances, the accompanying pains in back, head, feet, and limbs. He also considered the disturbance of the function of menstruation, digestion, etc. Intestinal stasis was usual in these cases and its degree could be determined by the bismuth meal. He showed by radiographs the progress of the bismuth meal in some of these cases. The local defects were not of the same degree in each case and were often dependent on factors outside the abdomen. In the study of this condition they should be careful not to lose sight of the general picture in the study of any particular organ.

Dr. W. Arbuthnot Lane of London, England, then read a paper on "Chronic Intestinal Stasis." He said that when he had first begun to study this subject it was not exciting much interest, but that the profession was now occupying itself with the problems connected with this condition more and more every year. Those who formerly scoffed now saw that this condition played a common but very important part in the production of many pathological states. The poisons absorbed from the intestinal tract damaged tissues, and reduced the resistance of the various organs. Intestinal stasis facilitated the multiplication of bacteria so that these extended beyond the bounds of their normal habitat, and thus produced infection of organs directly connected with the intestines. Furthermore, the toxins being absorbed by the blood stream were carried to distant tissues and produced progressive degenerative changes. Diseases of the liver, heart, kidney, and other eliminative organs were the evidence of overwork due to the intestinal stasis, and were not necessarily distinct diseases. Pigmentation of the skin was often the result of intestinal stasis, and he had seen persons who had been copper-colored for years resume a natural color after the removal of the colon. Low temperature of the extremities was usually due to intestinal stasis. The improvement in this symptom was even more striking than in that of pigmentation after the removal of the colon. Dr. Lane then recited a case of serious derangement of the nervous system which had been corrected by a short-circuiting operation. All these things showed that it was better to attack primary causes than end results. Chronic mastitis and cystic degeneration of the breast might be caused by intestinal stasis and he did not believe that cancer would develop anywhere unless intestinal stasis existed. He had seen a marked condition of exophthalmic goiter cured by colecystotomy. The stasis was most likely to occur at the points of attachment. Obstruction was liable to occur at the junction of the duodenum with the jejunum, or it might be due to rotation caused by a prolonged mesentery. For this condition he sutured the jejunum to the under surface of the transverse mesocolon. The jejunum was so fixed that it could not exert traction on the jejunal junction. Duodenal ulceration was usually secondary to obstruction at the ileum. Duodenal tenderness was evidence of ulceration of the duodenum or gall-bladder disease and some surgeons had made the unjustifiable mistake of removing the appendix in such cases. One should not operate until he had exhausted every means of diagnosis; the exploratory operation was not considered as creditable a procedure as formerly. He had known a case in which bismuth had been delayed eighty-five hours in the ileum and yet there was no intestinal obstruction; such a case might be said to belong to the simple static variety. He thought that the site of obstrucion could be gauged by bismuth and the *x*-ray. It had been assumed that the absorption of toxins occurred only in the large bowel, but this was not the truth; the chief site was in the small intestine and this had been left unconsidered and was not understood. Stasis in the small intestine was secondary to that in the colon. If the cecum became overloaded, the small intestine was likewise overloaded and stasis occurred all along the line, even affecting the stomach and the biliary ducts. In these cases there was some absorption of toxins from the stomach. In the treatment of these cases germicidal drugs, such as arsenic, mercury, and iron, autogenous vaccines, purgatives, foods not easily decomposed, large quantities of water, and colonic flushing had been among the measures employed. Sometimes these gave temporary relief. Dr. Lane believed, however, that the effects produced by these remedies were by no means to be compared to the results obtained by the use of liquid paraffin. The effect of this agent when administered at appropriate intervals during the day was to produce evacuations which ceased to be firm, to hasten the passage of the intestinal contents. Accumulations of feces were obviated. Pressure on the splenic artery was relieved and this allowed of a better blood supply to the brain. When obstruction was due to a kink at the end of the ileum, from the appendix or by an acquired mesenteric ligament an operation was indicated. Sometimes after operation the symptoms returned. In appropriate cases he did not hesitate to remove the colon, but if this removal entailed great risk to the patient he short-circuited. Dr. Lane illustrated his address very profusely with lantern slides.

Dr. John F. Clark of Philadelphia said that a great many of these cases were due to embryonic abnormalities and there was little or nothing that surgery could do for them. No case which did not present distinct evidence of obstruction was suitable for sugery. These cases were so largely dominated by neurasthenia that surgery was of little avail. It was only in those cases in which the physi-

cian had failed that the surgeon was justified in interfering. The speaker said he made no claim to having invented a new operation, but he had tried various ones in use by other surgeons. In the beginning he had been dominated by the idea that anatomy and the *x*-ray would furnish the indications for operation and he had probably operated on cases where he would not do so today. He had learned that there might be wide anatomical variations. A colon might be markedly prolapsed and yet functionate very well. There were cases in which they could not rely on the *x*-ray; the individual history of the patient furnished the best basis upon which to make a decision. He had removed the colon in seven cases, and in one of these patients the bowels went fourteen days without moving. He had done the hammock suspension of the transverse colon and secured functional relief in 50 per cent. of the cases; of the remaining 50 per cent. some were improved and some were worse than before the operation. Neurasthenics who were not made better were apt to be made worse. Where the colon had dropped so that it could be fixed to the anterior abdominal wall, this had sometimes given relief. Where the transverse colon was redundant he had done a resection which gave satisfactory results. Some of his anastomosis cases had been failures. He had operated upon redundant sigmoid with good results. Of the seven cases in which he had removed the colon, two gave good results, two more were improved, in two there was no improvement and perhaps the patients were not so well. One died from the effects of an adhesion which was remote from the seat of anastomosis, but before death had gained twenty-four pounds. None of these patients suffered from excessive thirst and did not suffer from diarrhea after the operation, but two had developed diarrhea after the lapse of a year. This made it seem that they should consider the remote effects of this operation. He could not feel quite the enthusiasm for this operation which Dr. Lane had expressed.

Dr. Robert C. Coffey of Portland, Ore., read an exhaustive paper on "Replacing and Retaining Operations in the Treatment of Gastric and Intestinal Stasis," which he said had been published in the *Journal of Surgery, Gynecology and Obstetrics*. He stated that gastric stasis was usually secondary to and a direct result of downward displacement of certain poorly supported parts of the alimentary canal, while other more firmly fixed points remained stationary. Dr. Coffey reviewed the history of the various operations used in the endeavor to correct these defects and said he had spent as much of the past year as possible in visiting men in this country and in Europe who were interested in this work and found that each was enthusiastic concerning his own theories, and one-sided when compared with others. After reviewing the comparative anatomy of man and animals, the speaker expressed the belief that these prenatal fixations by adhesion or fusion which were found in man were without doubt for the purpose of holding the organs in place and preventing them from piling up in the lower portion of the abdomen. After reviewing the embryology of rotation and fixation and the anatomy of suspensory supports of the abdominal organs, Dr. Coffey turned his attention to the surgical procedures that seemed most desirable. In some instances the appendix and its mesentery had become adherent to the paricetal peritoneum and thus became a ligament. Many times in such cases the appendix had been removed at a previous operation and, as a result, the cecum had gone lower than before and the patient was not benefited. In the course of his investigations he had found in a considerable number of cases obliteration of the omental bursa had not taken place, in which case there was no gastrocolic omentum and therefore no support for the colon. In these cases the transverse colon was particularly prone to ptosis with sharp kinking at the splenic flexure. A floating left kidney was one of the positive symptoms which identified a case of general ptosis. In case of breast changes, the degree of the changes bore a direct relation to the degree of autointoxication and this slowly but surely disappeared after cholecystotomy. Observation of a considerable number of cases of Lane's kink had led him to the opinion that this was entirely separate from the various forms of ptosis; nearly all of these cases gave a history of subacute attacks of appendicitis. In such cases of right-sided pathology, when dietary and medical treatment had failed, the proper treatment was fixation of the cecum and ascending colon in its normal position to the parietal peritoneum by a series of pursestring sutures when the operation was done through a right rectus incision. With the cecum mobile, pericolic membrane, and kinked appendix, he, in some instances, removed the appendix and fixed the cecum and ascending colon well up into the flank through a right rectus incision. Where the right kidney was movable the operation was performed from behind. An incision was made along the line of the lumborum muscle, turning forward along the crest of the ileum, and should be ample. The deep incision should just pass the outer edge of the quadratus lumborum. The peritoneum was opened in front of the kidney. After the appendix was removed, the cecum and ascending colon were sutured to the peritoneum along the line of incision as the peritoneum was closed. Dr. Coffey then described the manner in which he fixed the kidney by opening the capsule and lifting a flap of the fibrous capsule on either side of the median line of the convex border. Three quilt sutures of chromic gut were passed through each flap. A strip of the quadratus lumborum sutures of the fibrous flap next to the spinal column was drawn through the slip in the muscle and tied to the corresponding sutures in the opposing flap. This brought the kidney substance in direct contact with the muscle and utilized the fibrous capsule as a hand swung around the muscle. The fatty capsule was then drawn around the muscle, made taut, and sutured. In dealing with pericolic membrane uniform fixation of the ascending colon through the parietal peritoneum, with or without removing the membrane, gave better results in a number of cases. Dr. Coffey demonstrated these methods by lantern slides and also his method of dealing with Lane's kink and midline ptosis. He described his modification of Beyea's method by which they first shortened the natural supports of the stomach and liver as Beyea did. They then sutured the great omentum to the abdominal wall below the transverse colon with sutures passing entirely through the omentum. The third step in the procedure consisted in expanding the upper abdomen in order to restore, as nearly as possible, the normal shape, giving room for wandering organs. The fourth step in the operation consisted in doing a plastic operation for the purpose of contracting the lower abdomen in cases where it was very pendulous. In summing up his results Dr. Coffey said he had done the operation in 41 cases; 26 were cured symptomatically, 9 were much improved, 4 were somewhat improved, and one was unimproved. In all cases the patient was kept on her back for four weeks after the operation.

Dr. Joel E. Goldthwait of Boston spoke on "Orthopedic Principles in the Treatment of Enteroptosis and Chronic Intestinal Stasis." He said that the justification of the orthopedist for being interested in the subject of enteroptosis lay in the fact that this condition exerted an influence on the bony frame of the body and on the joints. These effects were drooping of the shoulders, prominent scapulæ, spine inclined upward and backward from the lumbar region with very little curve, being almost straight until the upper dorsal spine was reached. Many chronic joint diseases were due to malposition of the viscera as well as to absorption from intestines which were usually in a condition of stasis. The treatment of this condition by medical or surgical means was incomplete unless the strain was removed. What Dr. Coffey had said about the upright posture in the human race was perfectly true. The human race paid a penalty for the erect posture which would be unfair were it not for an intelligence which might teach how this penalty was to be avoided. The congenital sausage-shaped stomach was an embryonic type. There were also embryonic types of intestine; he had seen one only ten feet long. In many instances the colon was free except for a very short attachment—only two or three inches. In the congenital type of enteroptosis the trouble began when the child assumed the erect posture and lost his fat. The ptoses of the acquired type were mostly due to bad posture and these could be corrected, but would have to observe a proper regime as regarded hygiene and might have to continue certain exercises. When there was pressure on the solar plexus this might be relieved by change of posture. In cases of the congenital type the thorax was so narrowed that one could not expect a cure, though the patient might be benefited. However, the task of the orthopedist was to correct the defects as far as possible. They should remember that in these cases the patients were tired. Their muscles were in the "gone state" and so the first thing to do was to put such patients to bed in the recumbent position. They should be put on a flat bed with a pillow under the junction of the dorsal and lumbar regions. If the stomach did not empty itself in the prone position, the hanging or knee-chest position might be assumed. Intestinal indigestion was usually worse at night when the abdomen was relaxed; to correct this the patient sometimes was put in a plaster jacket for two or three months. When he got up he wore

an apparatus adjusted to the new posture. The apparatus made slight pressure at the lumbar-dorsal junction. Sometimes a little support was given for the lower abdomen. The patient should be impressed with the necessity of continuing his exercises and attention to hygiene. It was a very simple matter to relieve a few cases, but when one considered that one child in every five had a free mesentery and might become enteroptic the problem assumed larger proportions. They should begin with the school children who had this condition and were slow and dull. By proper attention to these children their condition might be greatly improved and in many instances might be entirely overcome and thus the defect would not be accentuated and handed down. When a farmer found an undesirable strain in his stock he went to work to breed it out and this was what should be done by the human race.

MISSISSIPPI VALLEY MEDICAL ASSOCIATION.

Thirty-eighth Annual Meeting, held at Chicago, Illinois, October 22, 23, and 24, 1912.

THE PRESIDENT, DR. LOUIS FRANK, LOUISVILLE, KENTUCKY, IN THE CHAIR.

AFTER the usual addresses of welcome, the reading of papers was proceeded with. The scientific work of the Association was divided into two sections.

Pernicious Anemia.—Dr. J. H. STEALY of Freeport, Ill., reviewed sixteen cases of this disease. Prognosis and treatment depended wholly upon the physician's ability to determine the etiology. The arsenic treatment was the best adjunct in cases of known etiology, and the best single system for those cases whose cause could not be established. He uttered a warning as to the use of proper arsenic dosage. Dietetic measures were essential. Food should be selected with care and careful attention paid to the frequency of feeding.

Arteriosclerosis.—Dr. G. W. MCCASKEY of Ft. Wayne, Ind., said the most important factor in the production of this disease was overstraining. This was a relative matter, depending upon the strength of the arterial wall on the one hand and the blood pressure on the other. The various intoxications derived either from within or without played an important rôle. They might act either directly by producing anatomical changes in the structure of the blood vessel wall by causing an asthenic condition of the muscular structure of the media, or through the nervous and muscular mechanism of the vascular apparatus, raising blood pressure and causing overstraining. Fibrosis and spasm were the two changes found in the arterial wall. The former was impossible of removal; the latter more or less completely amenable to treatment. The proper objects of treatment, therefore, were not to attempt the impossible task of removing fibrous tissue, but to overcome vascular spasm, conserve the failing myocardium in the later stages, and so far as possible to overcome autointoxication by rational measures. The best means for accomplishing these results must depend upon the individual case, especially the character of the dominant arterial change, whether fibrous or spastic, the stage in which the case came under observation, the degree of involvement of the heart, associated autointoxications, habits of life, etc. If blood pressure was high, degenerative changes advanced and the general aspects of the case threatening, rest in bed was the most important initial measure of treatment. The diet should be as near the minimum requirements of the body as possible. This was less important with regard to the starches and fats than the proteids. The storage capacity for the former was very elastic, and a slight excess could do no harm, providing primary digestion was normal. With the proteids, however, the question was quite different, as the kidneys were involved and should be saved all necessary work, and for the further reason that the very toxins were nitrogen containing bodies, the formation of which was favored by an excess of proteids. Vasodilators, iodides, and in advanced cases with failing hearts, digitalis, and in certain cases, a special bath devised by the author at 100° F., the duration of which was gradually increased for one hour, were the general measures of treatment advocated. A special measure of treatment advocated in a group of cases in which the habit of cardiac hyperactivity was in excess of circulatory requirements and tended to keep up high blood pressure, was the use of aconite in increasingly hourly doses to the limit of tolerance or accomplishment of therapeutic results. With a strict hospital régime, the prognosis of even the very serious type of cases was not nearly as bad as we had been led to believe. He recalled a case in which serious attacks of angina pectoris, due to coronary disease, in a patient sixty years of age, were completely relieved, and in which the patient had remained relatively well for ten years.

Phylacogens.—Dr. B. F. ZIMMERMAN of Louisville said a patient receiving a sufficient number of doses of phylacogen to afford him symptomatic relief could not be assured of a complete recovery. After he had received a sufficient quantity to overcome certain acute or painful symptoms he would frequently express a desire to discontinue the treatment, in which event, in all probability, he would suffer a return of the condition, all of which could probably have been avoided by a few more additional doses following the disappearance of acute symptoms. In some cases he had found the subcutaneous injections ineffective. In such patients the intravenous administration would usually be followed by a prompt abatement of symptoms. In his experience this had been particularly true of chronic infections and in such cases he employed daily increasing doses intravenously until the infections were no longer followed by systemic symptoms. At no time, however, had he given more than 10 c.c. intravenously at one dose. These remedies, as indeed all sera and vaccines were intended to combat infection and not to effect changes in joints which had become altered or deformed by long deposits, except such changes in these deformities as would naturally ensue from the eradication of the infection. It was too early to state definitely what the ultimate results of this method of treatment would be. He thought much depended upon the accurate diagnosis of cases and the administration of the phylacogen until the systemic reaction no longer appeared. In cases where the subcutaneous administration failed to give results the intravenous method should be employed.

Unmistakable Clinical Proof of the Therapeutic Value of Tuberculin.—Dr. FRANCIS MARION POTTENGER of Monrovia, Cal., said our motive, as clinicians, was so to use tuberculin that we might keep the body fluids well supplied with specific antibodies, and at the same time produce thoroughly controlled focal reaction which would produce the maximum stimulation of healing without producing an extensive congestion and doing harm. If one was conversant with dosage, this could be done quite readily because the limitations of danger were somewhat wide. First, if tuberculin would stimulate the machinery of immunization and increase the amount of protective antibodies in the blood, we must expect this to manifest itself in the treatment of tuberculosis by a lessened tendency for the disease to spread. Resulting from this we expected fewer complications. Second, we expected tuberculin by its focal stimulation to favor healing of the focus and as a result of this we expected a more rapid healing of the disease, and the improvement of whatever complications might be present, providing they were remediable; as a result of both the increase in the immune bodies and the focal stimulation we expected to produce good results in more patients, to produce them more quickly and to make the results more permanent.

The Resistance of Luetic Red Cells to Cobra Venom Hemolysis and the Value of the Reaction.—Dr. WILLARD J. STONE of Toledo stated that with normal red cells (4 per cent. suspension) plus dilutions of cobra venom varying from 1 in 70,000 to 1 in 80,000 hemolysis took place in twenty-four hours. With luetic cells hemolysis was retarded or absent in dilutions varying between 1-15,000 and 1-40,000. The lecithin of luetic red cells was apparently not so freely available to unite with cobra venom to form the hemolysin as was the case in normal red cells. The resistance of luetic red cells to hemolysis with cobra venom was first described by R. Weil in 1909. It was a well-known fact that syphilis attacked the lipoid constituents of the body cells since less lecithin could be extracted from syphilitic tissues than from normal tissues. Apparently the luetic toxin after seven to eight weeks so affected the lecithin of the red cells as to render it less available to unite with cobra venom and the cells appeared more resistant. Possibly the cholesterin content of luetic red cells was increased, which might account for the resistance to hemolysis with cobra venom. It was well known that cholesterin might inhibit hemolysis. The reaction had been made the basis of a test for lues by him in 112 cases of syphilis. It was found that in "secondary" cases after seven to eight weeks the reaction was positive in 87.8 per cent., while in tertiary syphilis the reaction was positive in 83.4 per cent. In eighty normals and controls, including typhoid, purpura, diabetes, cancer, tertian malaria, pseudoleucemia, biliary cirrhosis with jaundice, and many exanthemata, the reaction was negative in

all but one, a patient with transient morbilliform erythema. This was the first test made and may have been due to faulty technique, or the patient may have had latent lues. He had never been able to check up by further examination of this patient. The reaction appeared to have a distinct sphere of usefulness in latent syphilis, since the positive readings were considerably higher than with the complement fixation method of Wassermann. It was also of value in determining the extent of treatment, since the cobra venom reaction, in a large percentage of cases, remained positive after the Wassermann reaction had become negative. The cobra reaction after disappearance under treatment might again become positive if the treatment had been insufficient. The test was open to fewer technical difficulties than the Wassermann. Further experience in the hands of more workers might demonstrate the value of the test. In any case the resistance of luetic red cells to cobra venom hemolysis was an extremely interesting biochemical phenomenon and might be of value where the Wassermann failed.

The Management of Pregnancy and Labor in the Presence of Pelvic Contraction.—Dr. HENRY SCHWARZ of St. Louis said that cases of moderate pelvic contraction in primiparous women, in which the head had failed to enter the pelvis a week before term, should enter a hospital and be given the test of labor. If this test failed they should be delivered by pubiotomy. Cases of moderate pelvic contraction in multiparous women, with a record of craniotomy, high forceps or pubiotomy, should enter the hospital six weeks before term and be delivered by artificial premature labor. Cases of highly contracted pelvis should enter the hospital near term and be delivered by cesarean section.

A Third Cesarean Section on the Same Woman.—Dr. J. H. CARSTENS of Detroit, drew the following conclusions: 1. In cases of cesarean section for bony deformities, with normal pelvic organs, and ordinary health, we were not justified to sterilize the woman. 2. In cases of cesarean section for eclampsia or placenta previa, we were not justified to sterilize the woman. 3. In cases of tumors of various kinds, they should be removed at the time of operation, if possible, and the woman not sterilized. 4. In cases of multiple fibroid tumors, where they cannot be enucleated, hysterectomy was indicated. 5. In rare cases, where constitutional conditions existed, such as tuberculosis, etc., sterilization might not only be justifiable, but actually indicated.

Cesarean Section.—Dr. ASA B. DAVIS, New York City, stated that obstetric surgery shared the progress of general surgery, making it possible to perform abdominal cesarean section now with a maternal mortality of not more than two per cent. in clean, uncomplicated cases and no fetal mortality. This method of delivery was easier than normal labor for the child as it was not compressed. Better results than these may be looked for. Already some operators reported considerable series without mortality. Improvement in morbidity was well marked. The reduced danger made the operation applicable to a greater variety of difficult labors. Now it was an operation of election, coming into competition with other forms of operative delivery. Some forms of contracted pelvis formed the greater number of indications for the operation, as eclampsia, placenta previa, malignant disease of the cervix, old cicatrices of the cervix preventing dilatation, atresia or deformities of the vagina after ventral suspension of fixation without progress of labor, marked disproportion between the fetal head and capacity of pelvis, accidental hemorrhage, moribund mothers to save the child, tonic contraction of the uterus, obstructing tumors, rupture of the uterus with living child, impacted face, chin posterior. In cases where the mother had been repeatedly delivered instrumentally, resulting in a stillbirth each time, prolapse of the cord in undilated cervix might be suitable indications for the operation in well considered cases. He reported 149 consecutive cesarean sections in twelve years, with the loss of seventeen mothers, maternal mortality in all cases, 11.4 per cent.; 152 children delivered, twins three times, twenty-five children stillborn or failed to live, a fetal mortality of 23 per cent. He reported seventy-one consecutive cesarean sections in the past two years, with a loss of four mothers, maternal mortality of 5.6 per cent. There were seventy-two children delivered, eight died or were stillborn, a fetal mortality of 11 per cent. He reported fourteen cases of eclampsia so delivered, ten lived, 71.5 per cent.; four died, a mortality of 28.5 per cent. Sixteen children were delivered, eleven lived, 68.8 per cent. Five children died or were stillborn, a mortality of 31.2 per cent.: twelve mothers were para I, one para II, one para III, none were in labor. Sterilization of the patient was not practised. Repeated cesarean section had been performed twenty-seven times, eighteen the second time, seven the third time, one the fourth time, and one the fifth time. The best time to operate was at once after labor started, thus insuring a mature child. If one was sure of the duration of pregnancy, the operation might be done at one's convenience at any time near term. It was not necessary to wait for dilatation of the cervix. After operation it relaxed enough to allow ample drainage. This was noted in the primiparous eclamptics who were not at term nor in labor. Unless there were urgent reasons, he advocated performing only the cesarean section, allowing involution to take place and then, if necessary on account of tumors, malignant diseases, etc., do such operation as was required. He prepared the patient as for any laparotomy, injecting ½ dram of ergotol half an hour before operation, so as to secure a tonic uterus. The operation was done by a short median incision wholly above the umbilicus, in the midline. The uterus was held up to this opening by an assistant pressing against the flanks. The uterus was opened in front midline from just below the fundus downward. It was closed by an interrupted layer of chromic sutures down to the mucosa, and this layer was buried by a continuous suture, so that no raw surfaces were left upon which adhesions could form. The uterus dropped into the lower abdomen as after normal delivery. Adhesions could not take place between it and the abdominal wound, which was high above it. He had not seen hernia in any of his high operative cases.

The President's Address.—Dr. LOUIS FRANK of Louisville said he often wondered if four years of study in a medical school really qualified one to undertake all the responsibilities of practice—the graver ones of medicine and of surgery, and those which came often in the still hours of the night—when not only one but two lives were dependent upon the skill of the attendant. In a long experience with recent medical graduates, in twenty years' observation of young hospital internes, he regretted to say that his belief was it does not. In this department of work the American schools were far behind and this in what was one of the most important branches of our art. Obstetrics must be better taught and must be viewed from a broad standpoint. Williams had recently drawn attention to imperfect obstetric education and to the inability of many of our obstetric teachers. It would seem we had retrogressed, certainly there had been no advance. The branch was poorly taught and the practice as generally carried on was worse. Most obstetricians, both teacher and practitioner, had been deprived of, or surrendered, such surgery as rightly and properly they should do. The surgeon of to-day should no more be called upon to do a primary perineorrhaphy or other operative procedure in the lying-in room, than to put on forceps, do a version or an accouchement forcé; yet our obstetricians, for the greater part, assigned such work to the surgeons, not only in practice but in teaching the subject. Our students must have better training, a larger actual experience, hospital training, and more rigid requirements before entering this field of practice. Let us insist that the men who were to introduce our progeny into this world should be something more than "grannies"; that they should be not only obstetricians but obstetric surgeons. Here was a great field for our post-graduate schools, one which if properly carried out with demonstrations and practical teaching of the requisite kind could, with the abundance of material at hand in our large cities, fill a place far more useful to the profession and public alike than they at present occupied. It must be confessed that our post-graduate schools, and even our surgical clinics, had been in many instances an inspiration not always for good. The mercenary spirit was still dominant in post-graduate schools of medicine, and these institutions, rich in endowment though the large ones might be, and with ample hospital facilities and excellent men in their faculties, required investigation as to the duration of courses, the manner of their teaching, and the conferring of certificates; if necessary, they must be regulated. Specialists could not be made in six or eight weeks, yet certificates of proficiency were granted following courses of such duration, during which time the sole opportunity for qualifications had been to observe some seventy-five or one hundred operations, and, for a fee, to do two or four operations with the assistance (?) of the tutor. He urged special examinations for those members of the profession who desired to wield the scalpel, with additional requirements in an increased hospital experience for all specialists, surgical, obstetrical, and medical. Then recognizing as such those who were able to qualify as specialists, compelling them to adhere to such practice and not surreptitiously engaged in work other than that for which they declared themselves particularly qualified.

Biological Interpretation of Abdominal Pain and Its

Surgical Relation.—Dr. GEORGE W. CRILE of Cleveland, Ohio, took this as the title of his address in surgery. He said that the only types of infections that were associated with pain were those in which the infection might be spread by muscular action or those in which the fixation of parts by continued muscular rigidity was an advantage. The type of infection that might cause muscular action when it attacked one region of the body might cause no such action when it attacked another region. But turning to the significance of abdominal pain, he considered a new viewpoint and a practical as well as fascinating one. He could best illustrate this point by referring to two cases. In the medical ward of the Lakeside Hospital several years ago there was admitted a man seventy-eight years old, whose chief complaint was obstinate constipation. The abdomen was only slightly distended; there was no fever; no increased leucocytosis; no muscular rigidity, and but slight general tenderness. He claimed to have lost in weight and in strength during the previous several months. A tentative diagnosis of malignant tumor of the large intestine was made, but free movements were secured rather easily and he abandoned the idea of an exploratory operation. The patient gradually failed and died without a definite diagnosis having been made by either the medical or the surgical service. At autopsy there was found a widespread peritonitis, arising from a perforated appendix. An infant several years old was taken ill with some indefinite disease. A number of the ablest medical and surgical consultants of a leading medical center thoroughly and repeatedly investigated the infant. Although at last they could make no definite diagnosis they all agreed that it surely was not appendicitis, because there was no muscular rigidity and no tenderness. The autopsy showed a gangrenous appendix and general peritonitis. How could the absence of pain in these apparently anomalous cases be explained? Among 8,684 abdominal sections performed by his associates, Drs. Bunts and Lower, and himself in the Lakeside Surgical Service, 923 were on the stomach and intestines, 725 on the urinary tract, 744 on the gall-bladder, 2,130 on the female genital organs, and 3,988 on the appendix. In a recent conference, after tabulating all their cases, they felt that certain conclusions could be drawn; that certain lesions of the viscera mentioned caused pain and indigestion; whereas lesions of the solid viscera caused usually no primary pain; that lesions of the hollow viscera causing no pain were rarely benefited by operation; that most cases of painful indigestion, if not duodenal or gastric ulcers, were extragastric; that the cause of the pain was the stimulus to muscular action; that pain was a damaging agency to health; that acute abdominal pain was usually surgical; that these phenomena obeyed a general biological law of adaptation; that the adequate stimulus of many of the phenomena acted through the brain; that when the brain was disconnected these phenomena disappeared and thus might the mortality and the morbidity be placed measurably further under the surgeon's control.

The Stomach from the Standpoint of the General Practitioner, the Specialist, and the Surgeon.—Dr. CHARLES G. STOCKTON, Buffalo, in this address in medicine, said he had frequent opportunity of observing the working of good and evil in the professional management of stomach diseases. This field was rich in illustrations because derangements of the stomach formed so commonly a part of pathology starting in almost any part of the economy; because disease arising in the stomach often concerned directly the physician, the specialist, and the surgeon. Few regions more generously rewarded the correlated study of the physiology and chemistry, of psychology and general medicine, of special technique and wise surgery. Nowhere, now that the craze for oophorectomy and for fixation of the kidney had subsided, might one so often see the unhappy results of unthoughtful surgical interference; the failure from timid negligence of needed operative intervention; especially the evil consequence of arly misunderstanding, misinterpretation, and subsequent mismanagement of cases. He reviewed a few conspicuously familiar cases illustrating various pathological conditions and arranged these in three groups.

First Group.—A case of unrecognized tuberculosis, with gastric irritability. A specialist, after analysis of stomach contents, recognized a gastric neurosis and treated it by lavage and restricted diet. Improvement was not forthcoming, so a surgeon was invited. He saw a reflex, secondary to chronic appendicitis, and removed the innocent organ. Following a brief period of improvement, the result of psychic impression and suggestion, the case marched on; there was now fever, cough, expectoration, heralding infiltration, softening, and vomiting.

Comment.—It was a case for general medicine, not one for specialist or surgeon; yet it might have been, and both these might better have studied the case jointly with the family physician until the diagnosis was established.

Illustrations showing the need of the specialist and in which the general practitioner and the surgeon were inadequate were present in the following group:

Second Group.—A case of gastric atony, with anemia, emaciation, and mental depression; with constipation, slight hepatic derangement, tenderness, and recurring bilious attacks. The general practitioner perceived the denutrition, yet harmed the patient with superalimentation and chalybeates. A surgeon, noting the gastric distress, the moderate motor insufficiency, the colonic stasis, and the disturbed liver, felt that the primary fault was an infected and irritable gall-bladder, and drained the useful organ with no worse effect than making it small, limiting its movements, and binding it by adhesions to the surrounding parts. In fact, the case was one for the skillful specialist, who, by local treatment, carefully suited diet, and general development of the patient, in the end relieved the symptoms; then, by educating the patient as to his dietetic limitations and necessities by teaching forbearance, willingness, and waiting, had the satisfaction of seeing him restored to reasonable health. Our defeats might often have been converted into victories had we adopted the sensible and uplifting course of united, closely knit effort in the diagnosis and management of cases. Yet more, the spirit of modern democracy, which well might flaunt the old French legend, "Liberty, Fraternity, and Equality," had invaded our profession. With its spread there would come, at least temporarily, an enormous advance in mediocrity and self-sufficiency. Higher medical education could not stop it; at best it could only hinder; at worst, it would accelerate it; legislation could not control it. The remedy lay in the united stand for higher ideals, for a better sentiment; in an actual, not nominal, getting together in our work. The management of an important medical case was a responsibility suited to a carefully selected committee, not to an individual who represented but one side of the truth. Not to the staff of one of those clinics whose subalterns were subsidized for the magnification of a single phase of medicine.

Cleft Palate Operation: Results as Demonstrated upon Dog's Palate.—Dr. GEORGE V. I. BROWN of Milwaukee said there would seem to be no question of the correctness of the following conclusions, based upon the results of the demonstrations of the experiments thus far accomplished:

1. The application of compressive force sufficient to cause traumatic injury or disarrangement of the developing teeth or surrounding jaw structures, or the application of clamps of any kind which might inhibit growth across the palate in infant harelip and cleft palate cases was unnecessary even in the most difficult types of these affections and could not fail to do permanent harm to the future development of the nose, palate, teeth, jaws, face, and pharnyx, and thus militate against the acquirement of correct speech.

2. Expedients, such as the carrying in of external tissue from the lip or skin, or the turning up-side-down of the muco-periosteum for the purpose of bridging the palate fissure were not acquired because the same purpose could be accomplished otherwise in practically all cases and because the resulting scar tissue formation with loss of bone development rendered the best speech result impossible.

3. Notwithstanding such unavoidable disadvantages and difficulties as might be encountered, the effort from first to last in the treatment of all cases of harelip and cleft palate should be to restore the parts in such manner that in every possible way the normal growth and development might be favored.

Experiences in Spinal Surgery: Observations upon Sixty Laminectomies for Spinal Disease.—Dr. CHARLES A. ELSBERG of New York City presented observations based upon sixty primary laminectomies, twenty-two for tumor, nine for section of posterior spinal roots, four for inflammatory bone disease, five for old fracture of the spine, two for syringomyelia, one for intramedullary cyst, one for aneurysm of spinal vessels, three for a peculiar disease of the cauda equina, and thirteen exploratory. He showed that the dangers of a laminectomy should be very small, but that spinal surgery was a special field demanding special training and experience. After considering the technical aspects of the operation it was his belief that the value of the Wassermann reaction in making the indications for operation in spinal disease had been overestimated. In several instances a glioma was found at operation in patients with a positive serореaction. It was almost as great an error to allow a pa-

tient with a possible spinal tumor to become totally paraplegic while antisyphilitic remedies were being tried, as to allow a patient with a possible specific brain tumor to become blind while mercury was being given. The correct diagnosis of the level of the lesion should usually be made, but one must not forget that a stasis of fluid above the lesion might give level signs above the true level. Secondary degenerations might rarely cause a shifting upwards of the level signs. The supposed danger from the sudden escape of cerebrospinal fluid during an operation was not great; the author had never seen any symptoms in his patients. Retention of urine might occur ofter a spinal operation, but the frequency of its occurrence was in direct proportion to the injury done to the cord. A very marked abdominal distention often occurred after laminectomy in the lower dorsal region. After complete laminectomy, the function of the spine was fully recovered because the main support depended upon the vertebral bodies. As many as seven spines and laminæ could be removed and perfect function of the spine recovered. Some stiffness and rigidity might remain for a few months, especially after operations, in the lower dorsal and lumbar regions. Free mobility was most quickly recovered after laminectomy in the cervical region.

He considered the surgical aspects of old fractures of the spine, and showed by a report of cases that the results of operations for old fracture of the spine with evidences of compression of the cord were little short of brilliant. Ultraconservatism was indicated in fresh fracture of the spine and only few patients should be subjected to an operation. But in the patients in whom symptoms only appeared after weeks or months after the injury and in the patients in whom there was improvement at first and stationary symptoms persisted, decompressive laminectomy should be done. Marked angulation of the cord could be straightened out, intramedullary cysts drained, etc. Laminectomy for decompressive purposes was often indicated; the opening of the spinal canal might and often did have a profound effect upon the spinal cord, which might act beneficially upon some spinal diseases whose nature was as yet not understood and whose pathology was unknown. The removal of an extramedullary tumor of the spinal cord was one of the most satisfactory operations in surgery. The operation could usually be done in less than one-half hour and the danger was small. Two stage operations were indicated in intramedullary growths and in the giant tumors of the roots of the cauda equina. The treatment of localized intramedullary tumors by the method of extrusion had opened up a new field. It was both feasible and safe to incise the cord in order to allow of the extrusion of intramedullary tumors, to empty cysts of the cord, for decompressive purposes in infiltrating growths and in spinal gliosis.

Pancreatic Lymphangitis and Chronic Pancreatitis.—Dr. John B. Deaver of Philadelphia said that pancreatitis must still be studied with an open mind in regard to its etiology and particularly in respect to its relation to chronic inflammatory disease of the alimentary tract that resulted in retroperitoneal lymphangitis; that treatment was promising in the early stages and practically hopeless when the stage of interstitial deposit of fibrous tissue was reached; that the most promising field for treatment consisted in the means already devised for the treatment of chronic inflammation in the organs with which pancreatitis was commonly associated and upon which it appeared to be dependent; finally, that pancreatitis was common and not rare, that its presence should be suspected in all cases of obscure upper abdominal indigestion, and that like other chronic inflammatory lesions of the abdomen when it was uninfluenced in a reasonable length of time by medical measures it should receive surgical attention along surgical lines.

Pre- and Post-Operative Treatment of Prostatectomy.—Dr. William N. Wishard of Indianapolis said that the more discriminating use of urinary antiseptics had been suggested by gastric and renal irritation, following the prolonged use of large doses of urotropin. If renal elimination was good, as shown by urinary analysis, prolonged use of urinary antiseptics was not imperative. Where the urine was alkaline and offensive in odor, and pus present in considerable amount, it had seemed desirable to use urotropin for several days before operation, and to continue its use guardedly for a few days afterwards. The average period of preparatory treatment required in the writer's cases, had occupied from one to two weeks, and while some cases had been operated upon earlier, others had been maintained upon preparatory treatment for a much longer period. Whether a suprapubic or perineal operation was performed, liability to postoperative hemorrhage was much influenced by the carefulness with which enucleation was done. In median perineal operations, the writer had found much advantage from the use of a solid metal inflow and outflow tube devised by his assistant, Dr. H. G. Hamer. If a two-way rubber tube was used, its walls should be as firm as possible, as pressure from packing within the wound and around the tube might occlude the outflow. On changing the dressing and removing the gauze packing the morning following operation, the metal tube above referred to was also removed and subsequently a single soft rubber drainage tube used. While incontinence might not follow suprapubic operations, a fistula might occur either after suprapubic or perineal prostatectomy. Careful and thorough excision of the cicatricial tissue and thorough curettment of the deeper portion of the fistulous tract followed by suturing, and the maintenance of drainage by an anchored catheter in the urethra, had been followed by prompt closure in all the few cases of persistent fistula which the writer had observed after suprapublic or median perineal prostatectomy. Two cases of fistula had been referred to him where an inverted V-shaped incision and extraurethral enucleation had been done, and in one of these closure was secured, but in the other the fistula persisted and in both there was associated incontinence. Occasional occurrence of fistula, however, was not necessarily an argument against any form of enucleation. Permanent incontinence had not followed in any of the writer's cases operated by median perineal incision, although it had persisted for a great or less length of time in some of them. Systematic and persistent use of dilatation of the prostatic urethra and vesical orifice with Kollmann's dilator had usually given prompt relief.

Symptomatology and Pathology of Prostatic Hypertrophy.—Dr. E. O. Smith of Cincinnati said the symptoms of prostatic hypertrophy were due either directly or indirectly to a mechanical obstruction to the outflow of urine from the bladder. The prostate gland, located as it was around the proximal portion of the urethra and in very close relation to the bladder could but interfere with the normal urine channel when it underwent changes that disturbed these normal relations. Increase in size and shape of the prostate would necessarily produce a mechanical change in the shape, length, or entrance into the urethra. Among the earliest changes noticed by the patient was the decrease of the force with which the urine was ejected. There was no projectile force that carried the urine away in a good stream. It was possible for a patient to have both a cord lesion and prostatic hypertrophy. This applied more particularly to cases that came during the early period of expected enlargement of the prostate.

As a result of the nature of the mechanical obstruction to the outflow of urine and the effect on the bladder, there was sooner or later a failure on the part of the bladder to completely empty itself, which was the beginning of residual urine. Acute, complete retention might come on suddenly without warning, following indiscretions on the part of the patient. From a prognostic viewpoint, probably the most important symptoms were those referable to the kidneys. The kidneys were affected either from back pressure, from infection, or both. Dilatation of the ureters and pelvis might follow long-continued obstruction to urinary outflow, thus making a pressure on the renal parenchyma. Resulting from this was a functional insufficiency of the kidneys. The quantity of urine might not be diminished but the urea and other products of elimination were below the normal. It had been his observation that a great many, in fact, a majority of patients troubled with prostatic hypertrophy suffered from marked mental depression. There were two general varieties of changes in the structure of the gland. One in which there was an increase in the so-called glandular part of this structure and the other when there was but little tumor mass with greatly increased amount of dense, tough, fibrous tissue. In the open dissection of the perineum, the first part of the gland met was the posterior lobe which must be cut through before the real hypertrophy was reached. This bit of anatomical relation might explain some of the difficulties encountered by those attempting the open dissection method for the first time. Unless one got the enucleating finger into the capsule, the line of cleavage would be missed and a very difficult task was made out of a comparatively simple one. The easiest place to find the line of cleavage was in the roof of the prostatic urethra.

(*To be continued.*)

Miscellany.

Religion and Sanitation.—The religious customs of the non-Christian portion of the British Empire are generally brought into public notice by the problems of hygiene, health, or sanitation which these customs raise. The latest example of this is the comprehensive survey which the Government of India is instituting into the best methods of improving the sanitary arrangements at the various centers where Mohammedan and Hindu pilgrims meet for starting on their journeys to Mecca or for other religious purposes. The number of such pilgrims has increased so enormously with modern traveling facilities that there is always a serious risk of the importation as well as the outbreak of disease at these centers. The inquiry is expected to co-ordinate the arrangements which have already been enforced at some of the more important centers. Each province will have the benefit of the Imperial Sanitary Commissioner's presence, who will draw up a report on the result of the local inquiries. On each local committee will be a representative of each railway which is engaged in the pilgrim traffic. These facts have peculiar interest as showing how Western science complicates at first Eastern religious customs by making their observance possible to even larger numbers of the devout, and then, by regulations necessary for the public health, may end in modifying them to a degree not foreseen or contemplated.—*The Hospital*, October 19, 1912.

Some Attributes of Success.—R. A. Walker enumerates some of the qualifications which are more essential to the physician than to any other professional man. The doctor should have good health and tact to use the knowledge he possesses. He should exercise promptness in responding to calls. He should cultivate the virtue of sympathy, for the physician who does not display sympathy for suffering humanity can never endear himself to his patients. If to this be added cheerfulness and charity then, if carefully handled, church, lodge, and political affiliation can be used as a lever to advantage. Of some of the hindrances to success at the beginning of a young man's life, wealth is the greatest, for in many individuals it begets laziness, carelessness, and a tendency to shirk work in unpleasant weather, because there is no sense of compulsion. Poverty, while an unfortunate handicap, may be frequently overcome by grit, energy, and good management. Another great hindrance to gaining and holding the confidence of one's patrons is excessive self-aggrandizement. The physician who is always on the go night and day when all other doctors in the community are comparatively idle, who passes through epidemics of malignant diphtheria and scarlet fever and cures every case, the doctor that treats hundreds of cases of pneumonia and typhoid fever and never loses a patient, is generally the doctor, if the truth is told, that is incapable, as a rule, of making a correct diagnosis. Such boasting is, to say the least, in bad taste, and the best people lose respect for the doctor who descends to this practice. The too frequent use of technical terms in conversations with laymen can be overdone and in some cases it creates disgust.—*Virginia Medical Semi-Monthly.*

"Shop Talk."—J. G. Mumford discourses on this subject as follows: "The solemn converse of young professional people always interests me. It is not babble; and sometimes it is informing, because it shows how the wind sets. Students of law and medicine and young practitioners seem to be most given to this sort of talk. The awful person who chatters of stocks develops his awfulness late in life; and the politician is nearly always acceptable, because the politician, whether wise or foolish, deals with subjects of widest interest. Moreover, his talk is rarely technical. Medical talk in public—"doctor rot" as one of my tired friends calls it—is sometimes heard even from venerable lips which should have been better trained. I have agonized memories of hanging on to trolley-car straps with certain merciless consultants, while they poured out upon me and upon our long-eared neighbors the details of the case we were about to visit. I've tried to escape from my misery by sitting down even while my companion remained standing, but that maneuver stimulates one's tormenter to worse aggressiveness and louder shoutings. The best plan is to murmur appreciation and to approach a listening ear as near to his lips as decency will permit. Even so, painful moments arise, as when he nips off his discourse suddenly and demands in truculent tones what you would do under the conditions he has described. I have learned to say that I can't tell until I have seen the patient."—"A Doctor's Table Talk."

The General Practitioner and His Mission.—In a recent book entitled "The Doctor and His Work," C. J. Whitby states that the successful physician is an artist, not a mere prescribing machine; he treats the individual, not a label. To do this he must know the personal peculiarities of the patient. Herein lies the justification of the general practitioner's existence. A man of sense who has brought human beings into the world; who has tended them through the disorders of infancy; who has seen them grow up, marry, and have offspring of their own whose early years, at any rate, he may well have the opportunity of observing; succeeds in knowing them as a consultant, even of the keenest clinical insight, cannot know them. He knows how they react to diseases and to remedies. He knows how heredity shows itself in matters pertaining to health. In a word, he knows the natural history of disease in a way beyond the teachings of the laboratory or instruments of precision. A man of this kind has a store of knowledge, acquired during long years of observation, and developed by practice till it becomes intuition. This experience cannot be transmitted and for the most part dies with the possessor, but while he lives it is invaluable, and it will be an evil day if ever the charge of sick people is handed over to medical officials who have not the same opportunity of studying their peculiarities, and whose treatment, therefore, must be largely a matter of cut and dried formulæ. There is, moreover, the psychological factor to be taken into account. The general practitioner necessarily learns much of the mental as well as of the bodily structure of his patients, and the faith in him that makes them stick to him as their family doctor for many years is a professional asset beyond price. If there is to be no choice of doctor, as would result from the nationalization of the practice of medicine, this potent element of cure must tend to fade away. —*British Medical Journal*, October 12, 1912.

Eugenics in Constantinople.—The Armenian Patriarch in Turkey recently issued a decree forbidding the clergy to celebrate any marriage unless the parties thereto furnish a medical certificate showing that they are in physical and mental health.

Medical Record

A Weekly Journal of Medicine and Surgery

Vol. 82, No. 21.
Whole No. 2194.

NEW YORK, NOVEMBER 23, 1912.

$5.00 Per Annum.
Single Copies, 15c.

Original Articles.

CALORIMETRIC OBSERVATIONS.

By GRAHAM LUSK.

NEW YORK.

(From the physiological laboratory, Cornell University Medical College, New York City.)

ONE of the important considerations for the welfare of the people is that of their food. In the recent Congress of Hygiene held at Washington, consideration was given to the action of foods, in the special section of the congress entitled Dietetic Hygiene. This section was presided over by Dr. R. H. Chittenden and the most notable guest present was the distinguished international president of the congress, Professor Max Rubner of Berlin.

Carl von Voit, the master of Rubner, working in association with Pettenkofer, was the first to measure accurately the end-products of oxidation in man, using the celebrated Pettenkofer respiration apparatus which was built in 1862 through the financial aid of King Maximilian of Bavaria.

To Rubner the world owes the construction of the first calorimeter which correctly measured the heat given off from an animal. This calorimeter Rubner constructed with very modest means in the University of Marburg to which, as a young man, he had been called to be professor of hygiene. With this apparatus he was able to show that the heat eliminated from a dog in 24 hours was exactly the amount of heat which would have been produced by the dog from the oxidation of those materials which he destroyed in his body during the period in which he was in the calorimeter. This quantity of fat, carbohydrates, and protein which was oxidized was measured by Rubner through determinations of the products excreted from the animal during the time.

Here, then, for the first time, the law of the conservation of energy was proved to apply to the living organism. The heat produced was simply the heat which would have been produced from the materials oxidized during the period of 24 hours when the dog was in the calorimeter. The effect of various foods was noted. Also, the effect of various temperatures was observed. Rubner has called attention to the fact that men, through the use of clothes, seek to surround their skins at all times with a tropical temperature so that thermal influence need not usually be considered as modifying the heat production in human beings.

Atwater worked in Voit's laboratory with Rubner and derived his ideas from this source. Returning to America, Atwater, with the aid of the physicist Rosa and supported by United States Government funds constructed in 1890 a calorimeter sufficently large for a man and showed that the same principles held true for a human being that Rubner had shown for the dog. Benedict, succeeding Atwater, has carried on work with enthusiasm and success in the new Nutrition Laboratory of the Carnegie Institution of Washington, the laboratory being located in Boston.

Through the generosity of Col. Oliver Hazard Payne, sufficient funds were given to allow of the construction in this laboratory of a calorimeter modeled on the lines of those in the Boston laboratory, but smaller in size, so that the heat production of dogs, babies, and dwarfs might be accurately determined. The construction of this apparatus was under the charge of Dr. H. B. Williams, who, besides being a physician, is also a physicist and mechanic of the highest attainments, and through his skill sensitive regulatory apparatus was installed in connection with the new calorimeter so that Dr. John Howland was able to determine in hourly periods the heat production of a baby weighing less than seven pounds, and to compare this with the quantity of heat which should have been produced from the materials destroyed in the baby's organism during the time. The quantity of fat, carbohydrate, and protein oxidized were calculated by determining the amount of oxygen absorption, carbonic acid elimination, and nitrogen outgo of the body.

Metabolism experiments upon a dog were, for the first time, possible in hourly periods. It was possible, for example, to follow the heat production after giving meat and to see how it varied from hour to hour and also the action of other foods.

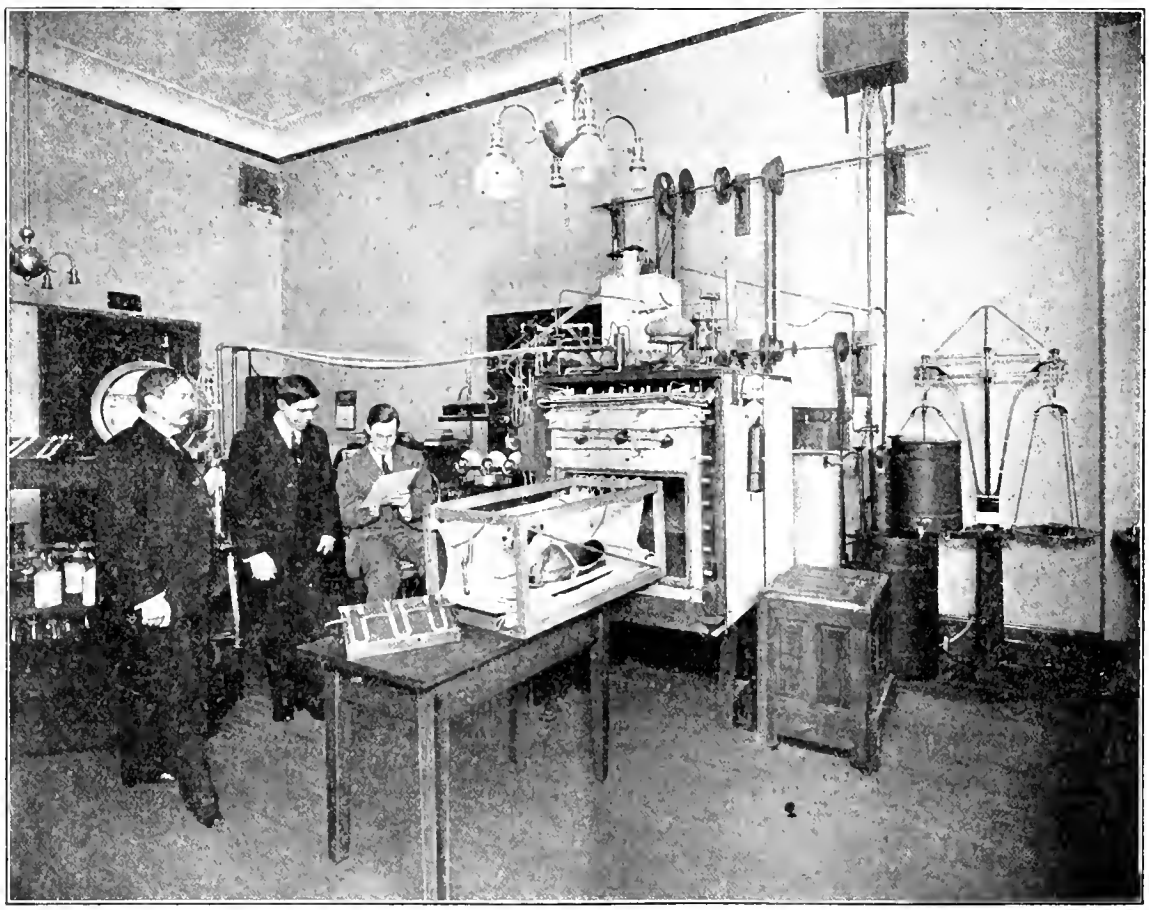
When meat was given in quantities as high as 1,200 grams at once, it was found that the heat production in one dog rose from 22.3 calories per hour before the food was given to a level of 36 calories during the second hour after food and to 42 calories during the third hour after food, near which level it remained until the eleventh hour, when it gradually declined to 25 calories 21 hours after the ingestion of the meat. It is apparent, therefore, that meat given in this quantity can nearly double the heat production in the animal.

The question now arose, what was the cause of this great heat production? Rubner explains the rise in heat production after giving meat by stating that protein is of such a chemical structure that much of it cannot be used as a source of energy for the cells of the body, but is destroyed with the production of free heat. Such heat is simply that fraction of fuel value which is wasted because it is not furnished to the cells in the form of sugar or fat, which substances are the essential fuel supply of the cells. In order to understand the action of protein it is necessary to recall that it is made up of a great many chemical units called amino-acids which, strung together in various quantities, build up the varying proteins of the different cells. When

protein is eaten it is digested through the digestive juices, and it is broken down into the individual fragments or individual amino-acids of which the large molecular complex consists. These amino-acids are soluble in water, soluble in the juices of the gastro-intestinal tract. They are absorbed directly into the blood, carried by the blood to the tissues and deposited in the tissues, as has been recently demonstrated by the work of Folin and Denis, work which has been confirmed by Van Slyke. Folin and Denis have shown that amino-acids increase in quantity in the blood and increase in quantity in the tissues one hour after they are introduced into the intestinal tract, although, during this first hour, there is no increase in the quantity of urea in either the blood or the muscle, which indicates that the process of destruction of the amino-acids is not immediately effected.

The simplest of all the amino-acids founds in the organism is glycocoll, which is amino-acetic acid. This substance introduced into the gut of a cat by Folin gave the results indicated above. Glycocoll is also a substance which, if fed to a diabetic dog, can be converted completely into glucose, as work in the writer's laboratory has demonstrated. If Rubner's idea were correct that the great heat production which followed the ingestion of protein was due to the fact that the materials in the protein were not completely convertible into sugar or fat which could be utilized by the cells, then the ingestion of glycocoll, which is completely convertible into sugar, should have no more effect upon heat production than would a quantity of sugar which could be produced from the glycocoll administered.

Since 25 grams of glycocoll result in the production of 20 grams of dextrose, the effect of these two substances was compared in these quantities. It was found that when 20 grams of dextrose were given to the animal in a certain nutritive condition, the heat production was increased to the extent of 2.5 calories, whereas when 25 grams of glycocoll were given, the heat production was increased 31.3 calories. It was apparent, therefore, that glycocoll had an enormously greater power to increase metabolism than its equivalent quantity of sugar possessed. It might be thought that the increased heat production here observed was due to the elimination of an increased quantity of urea, but experiments showed that after giving urea to the dog there was no increase in the heat production. Again, it might be thought that the process which involved the removal of the nitrogenous portion, that is, the NH_2 group, from the non-nitrogenous remainder of the amino-acid might evolve heat. However, it was shown that when another amino-acid called glutamic acid was given, there was no increased heat production whatever. The nitrogen of this amino-acid was recovered as urea, hence it must have been deaminized. The process of deamination, as it is called, that is, the removal of the NH_2 group, has therefore no effect on the heat production. These experiments proved that the great



This figure shows a respiration calorimeter built at a cost of about $5,000. The dog, wearing a bandage which holds a rectal thermometer in place, is shown lying on a cot suspended from a frame which may at any time be slid into the open chamber of the calorimeter. This accomplished the front is then sealed. The animal respires within the chamber, the water and carbonic acid which he eliminates are removed by circulating the air through absorbing chemicals, and fresh oxygen is admitted automatically to replace the oxygen absorbed by the animal. Four people are constantly employed during the experiment. The heat produced by the dog is removed and measured by a current of water flowing through a system of pipes within the calorimeter.

heat production after giving glycocoll was not due to the elimination of urea, a substance formed in the course of its metabolism, and was not due to the process of deamination. It is therefore necessary to conclude that the action of glycocoll upon metabolism is in virtue of its chemical structure and that it has a stimulating effect upon the cells, causing an increased heat production.

Other experiments showed that a high heat production was caused by alanine, a substance which is completely convertible into dextrose in the organism, and that leucine and tyrosine also had some effect in this regard.

Zuntz believed that the increase in heat production was due to the work of the intestines or "Darmarbeit," but Benedict has shown conclusively that the introduction of cathartics into the intestinal tract or the introduction of indigestible agar agar do not in the slightest way affect the metabolism of man. Alanine and glycocoll act as irritants to the mucous membrane of the stomach, frequently causing vomiting, and it might be considered possible that the results were due to this stimulation. However, the dog employed remained perfectly quiet throughout the hours of experimentation and showed no signs of nausea. Furthermore, a solution of urea, which causes nausea, has no effect whatever upon the metabolism. From these facts the conclusion must be drawn that amino-acids absorbed into the blood, carried and deposited in the tissues, as they are, act directly as stimuli upon the tissues, increasing their heat production.

As regards the influence of carbohydrate, new points have been brought out in these recent experiments. If a dog be given 50 grams of dextrose in water, the heat production rises from 16.2 calories per hour to 20 calories per hour and remains at that height during the second, third, and fourth hours after administering the substance. It is found from the respiratory quotient during this period that, aside from the small protein metabolism, the whole of the heat production is derived from the dextrose which has been ingested. At the end of the first hour the dextrose has risen in percentage in the blood and then on account of the osmotic conditions the blood becomes more dilute as is indicated by a decrease in the percentage of hemoglobin present in it. During the fourth hour, the last hour of the high metabolism, a large volume of urine is eliminated and the blood tends to regain its former composition. During the process of dextrose absorption, dextrose is carried through the liver into the general circulation, affording opportunity for its ready oxidation on account of its free diffusion into the cells. The writer has called this increased heat production a metabolism due to plethora. Urea and salt solutions which must produce osmotic changes between the blood and the tissues have no effect upon metabolism when they are given to the dog *per os*. If fat be introduced, the metabolism will also be increased, an increase which is evident during the second and subsequent hours after its ingestion. Experiments show that emulsified fat introduced into the stomach quickly induces a considerable flow of milky chyle from the thoracic duct, which is due to absorbed fat coming from the intestine. Here again one can speak of an increase in metabolism as due to plethora.

It appears almost certain that mechanical work can be done more easily if this condition of plethora exists. That is to say, if carbohydrate and fat are continually entering the blood stream so that they can be carried to the cells in increased quantity.

Rubner in recent brilliant experiments has shown that when the yeast cell acts upon a sugar solution, the energy of the fermenting yeast is derived from the conversion of sugar into alcohol and carbonic acid. A small portion of energy is also liberated exo-cellularly, the yeast enzymes acting directly upon dextrose present in the solution itself. One might conceive that a similar effect is produced in the organism after giving sugar. One might imagine that the greater portion of the suar poured into the circulation is used directly for the motions of cell life, whereas a small fraction is destroyed on account of the presence of enzymes in the circulating fluids. In the latter case, the reaction would produce only free heat.

This hypothesis, fascinating though it be, is not borne out by the results obtained when a mixed diet is given to the dog. A diet was given consisting of 50 grams of cracker meal, 33 grams of meat, and 10 grams of lard. The heat production rose from 16.2 calories to 20.2 calories. When alanine was added to this mixture, alanine which of itself alone would raise the metabolism from 16.2 calories to 19.2 calories, no effect whatever was observed. When 20 grams of glycocoll were given, the metabolism rose just about as high as the glycocoll itself would have caused it to rise if it had been given alone. It has been set forth that glycocoll acts in virtue of its being a stimulus to cellular protoplasm. When it is given, however, in a mixed diet which has already established a rhythm of cellular motion equal to that which the amino-acid would have caused if given alone, there is no increase in the heat production. It would seem, therefore, that the increased heat production after giving carbohydrate was not due to an increase in the liberation of free heat, but that it was due to a mechanism akin to the mechanism set in activity by the amino-acids. In other words, amino-acids entering alone would cause a certain extra amount of oxidation. Carbohydrates entering in quantity would establish, perhaps, a similar level of oxidation, but the amino-acids entering with the carbohydrates would encounter a height of metabolism already established which they themselves alone could produce, but to which they can not further contribute.

These results lead to the general conclusion that there exist the following forms of metabolism in the quiet or sleeping dog excluded from thermal influences.

1. *A basal metabolism* when the cells are nourished by a blood stream which does not receive food from the intestinal tract and the composition of which is regulated by the organs of the body.

2. *A metabolism due to plethora* induced by an increased quantity in the blood of carbohydrate or fat metabolites which are being absorbed from the intestine.

3. *A metabolism due to the stimulus of incoming amino-acids* acting upon the cells.

The metabolism of plethora and the metabolism of amino-acid stimulation cannot be added to each other; there is no summation of effect when both influences are brought into action together. In other words, cellular activity induced by the presence of carbohydrate is not further intensified by the stimulus of amino-acids unless the latter alone would accomplish the result.

The height found for the basal metabolism of the perfectly quiet resting organism, excluded from

thermal influences and determined eighteen hours after the ingestion of food, confirms Rubner's law of skin area, but places the heat elimination at a lower level. Thus the basal metabolisms of two dogs of different weights and that of a dwarf seventeen years old and weighing 21.3 kilograms showed the following values for calories produced per square meter of surface, calculated as for a period of 24 hours.

	Weight in kg.	Surface area in sq. meters	Calories per square meter of surface
Dog I	13.8	0.696	759
Dog II.	9.3	0.496	784
Dwarf, J. P.....	21.3	0.946	775

The values in the last column agree within 3 per cent. In sleeping infants, however, the basal metabolism reached 1,100 calories per square meter of surface and here the metabolism was also shown to be especially sensitive to protein ingestion (amino-acid stimulation), indicating that a high metabolism is characteristic of youthful protoplasm.

As a practical conclusion of these experiments it appears that in a quiet and resting animal the heat production is increased by about 20 per cent. after the ingestion of a mixed diet, and this increase continues during the period of intestinal absorption; also addition of moderate amounts of protein to the diet has little effect upon the production of heat, even though this protein given alone would of itself cause a considerable rise in the heat production. Hence, a mixed dietary is physiologically economical.

Experiments are soon to be undertaken to establish the validity of the conclusions set forth in this paper as regards man both in health and disease.

LITERATURE.

1. Rubner: "Calorimetrische Methodik," Marburg, 1891.
2. Atwater and Rosa: "A New Respiration Calorimeter," U. S. Department of Agriculture, Office of Experiment Stations, Bulletin 63, 1899.
3. Howland: "Der Chemismus und Energieumsatz bei schlafenden Kindern," *Zeitschr. f. physiolog. Chemie*, 1911, Bd. 74, p. 1.
4. Williams: "Animal Calorimetry, I, A Small Respiration Calorimeter," *Journal of Biological Chemistry*, 1912, Vol. 12, p. 317.
5. Williams, Riche and Lusk: "Animal Calorimetry, II. Metabolism After Meat Indigestion," *Journal of Biological Chemistry*, 1912, Vol. 12, p. 340.
6. Lusk (with Riche): "Animal Calorimetry, III, Metabolism of Dextrose and Fat, *Journal of Biological Chemistry*, 1912, Vol. 13, p. 27.
7. Fischer and Wishart: "Animal Calorimetry, IV, Dextrose Absorption and Blood Composition," *Journal of Biological Chemistry*, Vol. 13, p. 49.
8. Lusk (with Riche): "Animal Calorimetry, V, Metabolism of Amino-acids," *Journal of Biological Chemistry*, 1912, Vol. 13, p. 155.
9. Lusk (with Riche): "Animal Calorimetry, VI.," "Metabolism of Mixtures of Foodstuffs," *Journal of Biological Chemistry*, Vol. 13, p. 185.

ETAT VERMOULU—A FORM OF SENILE CORTICAL DEGENERATION.*

By EDWARD MERCUR WILLIAMS, M.D.,

PHILADELPHIA.

INSTRUCTOR IN NEUROLOGY AND NEUROPATHOLOGY IN THE UNIVERSITY OF PENNSYLVANIA AND ASSISTANT NEUROLOGIST TO THE UNIVERSITY HOSPITAL.

THIS form of degeneration of the brain cortex to which Marie ascribed the name Etat Vermoulu, or worm-eaten state, has been reported by several of his pupils (Dougherty, Léri, Ficai, Rossbach), but up to the present time has not been described in any of the English or American journals.

*Presented at the meeting of the Philadelphia Pathological Society, April 25, 1912.

For my material I am indebted to Dr. William G. Spiller and Professor Pierre Marie, in whose laboratory I started the work on this subject. I wish also to thank Dr. Allen J. Smith for his kindness in photographing the specimens.

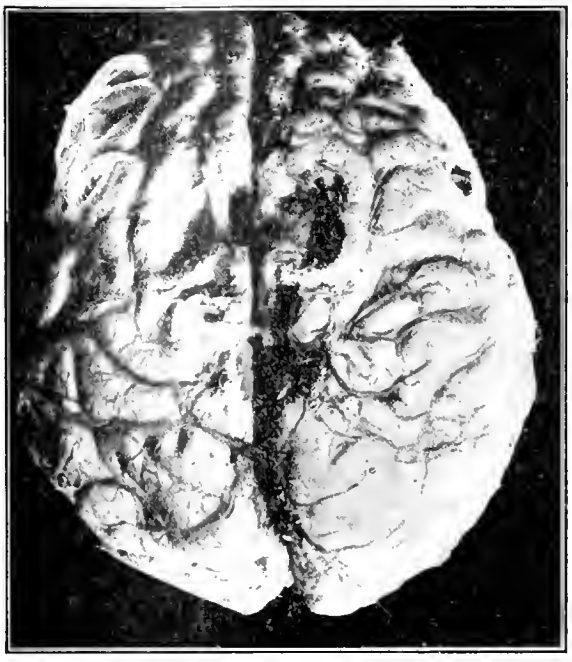


FIG. 1.—View of top of brain showing ulcerated appearance of the frontal and paracentral areas. (Case of Dr. Spiller.)

Etat Vermoulu is found in senile brains, particularly in those having a more than usual degree of arteriosclerosis. According to Léri it was present in two per cent. of all the brains examined at the Bicêtre.

It occurs as somewhat irregularly shaped and sized ulcerations on the surface of the brain with the formation in the more advanced cases of small cysts or cavities in the deeper subcortical tissue.

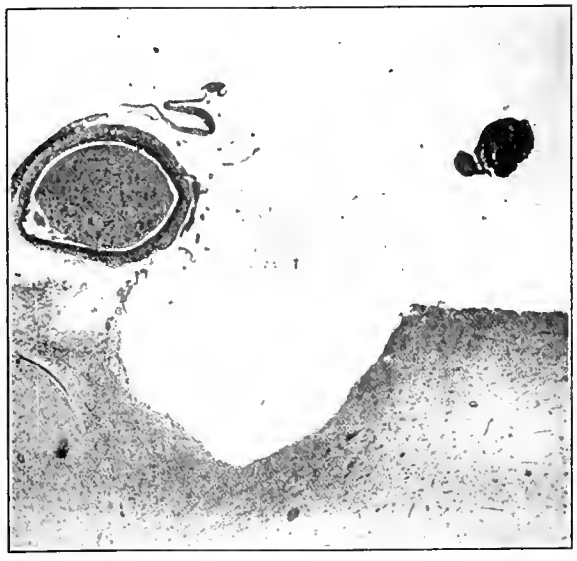


FIG. 2.—Section of the frontal cortex, stained by Van Gieson's method, showing the cone shaped ulceration of the cortex and the glial thickening of the cavity wall. (Case of Prof. Marie.)

The clinical picture as a rule is not other than that of a senile dementia of greater or lesser intensity. Perhaps this is in part due to the frequent occurrence of the disease in the frontal lobes,

though the place of predilection seems to be the temporal region. The involvement of other cortical areas, according to the location, may give different symptoms. Often there are some motor disturb-

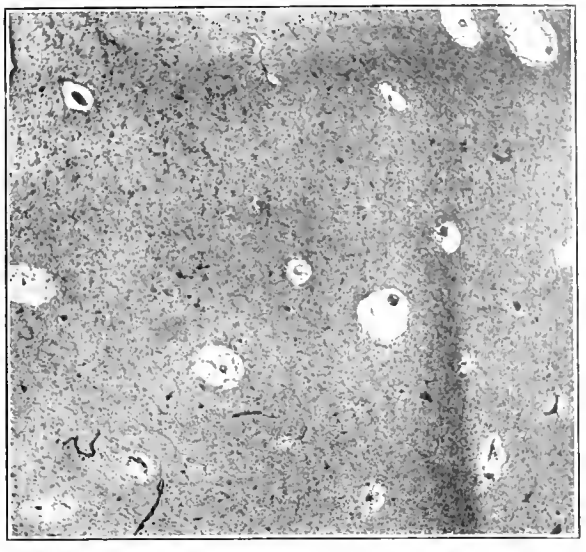


Fig. 3.—Specimen of temporal cortex, stained by Van Gieson's method, showing the intense degeneration around the walls of the blood vessels, forming the large perivascular spaces. (Case of Prof. Marie.)

ances from the presence of additional subcortical lesions, such as small areas of softening (lacunæ) in the internal capsules.

The gross appearance of such a specimen is that of numerous small ulcerated areas on the surface of the brain. In a fresh specimen they appear yellow, gray, or brownish in color, the walls usually becoming stained by the yellowish fluid or semi-gelatinous substance contained in the cavities. These ulcerations are irregular in shape and outline. They have sloping walls and extend only to the border of the white and gray substances. Several adjacent convolutions may be involved or there may be several unaffected convolutions intervening between those more seriously affected. The seemingly unaffected convolutions, however, by micro-

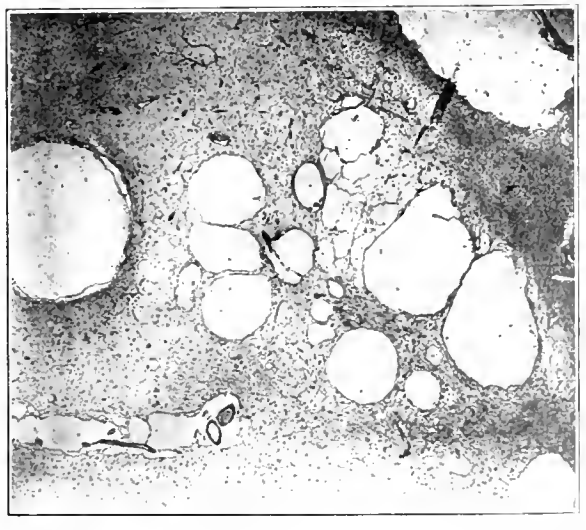


Fig. 4.—Section of temporal cortex stained with hemotoxylin-eosin, demonstrating the great degree of disintegration and vacuolization of the cortex and the absence of any ganglion cells. (Case of Prof. Marie.)

scopical examination show intense changes, probably the beginning of what would later have the characteristic lesion of the etat vermoulu.

The pia, due to its atrophied condition over these areas, usually tears very easily, falling inward and leaving irregularly sized funnel-shaped cavities with the bases outward.

Microscopically, the pia in close proximity to the ulcerated areas is infiltrated and thickened, the blood vessels are sclerosed, hyaline, and many of them almost completely occluded. Calcareous degeneration, so frequent, according to Ficai, was only present in one or two arteries. Directly over the ulcer the pia is usually thinned, atrophied, and fallen in, forming irregular folds near the edges.

The cortical substance shows a proliferation of the glia, this often taking the place of the tangential fibers as well as of the cellular elements. The glial overgrowth is mainly confined to the fibrillary substance as there appears to be no excessive increase in the glial nuclei. Such overgrowth is probably secondary to the earlier process of softening from the imperfect nutrition following the gradual obliteration of the lumens of the cortical vessels.

In a number of the sections there appeared to be an unusually yellow tinge in the walls of the ulcerated areas, suggesting the presence of blood pigment. This was probably caused by the ab-

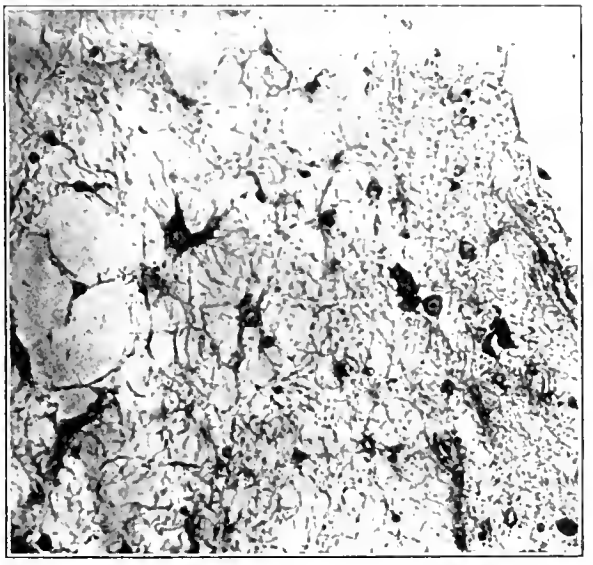


Fig. 5.—Area from Fig. 4 with greater magnification illustrating the absence of nervous tissue and the prominence of the neuroglial reticulum.

sorption of blood coloring matter before its chemical change into hemosiderin. No reaction was obtainable to the tests for hemosiderin, though several vessel walls stained a greenish blue by the ferrocyanide method showing the presence of albuminate of iron in the vessel coats. The possibility of blood coloring matter being carried in solution and not giving the iron reaction before a certain definite chemical change has taken place is shown in a recent article by Claude and Loyez.

Amyloid bodies are very numerous, much more so than in ordinary conditions of senility, and in some of the sections they form almost a solid layer in the region of the tangential fibers. Other bodies having a hyaline appearance are scattered throughout the sections, staining a deep pinkish red by both the hematoxylin-eosin and Van Gieson methods. These are blood vessels occluded by hyaline material so as to form solid hyaline masses, in which there are in many cases no distinct vessel walls visible. Where the longitudinal axes of the vessels have been cut there are long, irregularly shaped hyaline cords.

Throughout the gray cortex and to a much lesser

degree in the subcortex, the vessels are surrounded by broken-down, rarefied tissue, leaving in its place only a slight perivascular reticulum of glial fibers, containing a few nuclei, some cellular débris, and fluid. These perivascular cavities may be seen also in the substance of the cord in one of the specimens examined. Such small areas are doubtless points of origin for the cysts occurring in the advanced stage.

The areas or plates of miliary sclerosis described by Redlich and referred to by Léri and others as being frequent in this condition could not be found in any of the specimens examined.

With the extension and confluence of these cavities and the overgrowth of the glial and even, to some extent, of the connective tissue, the cellular portion undergoes destruction in varying degrees. Even in those cases where the cystic formation is absent and only a light grade of superficial ulceration is present, the brain cells show considerable disintegration and destruction, due no doubt to the faulty nutrition so common in the sclerotic cortical changes of senility. In some instances the cortical destruction and overgrowth of glia is so great that there remains practically nothing but a loose meshed network of neuroglia.

The disease most frequently affects the temporal lobes, often the frontal and parietal, and Léri reported even involvement of the cerebellum.

In its early stage this condition probably could not be distinguished from cases of senile arteriosclerosis, of which I believe it to be only a more severe and advanced form. These more severe changes are probably (Léri) due to the imperfect nutrition from the gradually occluded arteries, causing a slow breaking down and disintegration of the tissue around the vessels, with its absorption and an overgrowth of glia, to a certain extent compensatory in nature. In the ordinary senile sclerotic changes described by Alzheimer, however, unlike the etat vermoulu, the nerve cells are disturbed and often destroyed, but there is never a true destruction of tissue with disintegration and absorption and cavity formation.

LITERATURE.

Alzheimer: *Allgem. Ztschr. f. Psych.*, 1895 and 1897.
Claude et Loyez: *Compt. rend. Soc. Biol.*, Paris, 1911, LXX.
Dougherty: *Rev. Neur.*, 1909.
Ficai: "Arch. d. méd. exp. et. anat, patholog.," Paris, 1907, xix.
Horand et Puillet: *Rev. Neur.*, 1911.
Léri: "Congres d. méd. alien. et neur. de France," Lille, 1906.
Marie: "Congrès de Neurologie," 1905.
Marie: *Rev. Neur.*, 1905.
Rossbach: *Zeitschr. f. d. gesamm. Neur ü Psych.*, Orig., I. 1910.

A CASE OF CHRONIC PANCREATITIS WITH POLYCYTHEMIA (CLINICAL DIAGNOSIS: PANCREATIC LITHIASIS).

By G. A. FRIEDMAN, M.D.,
NEW YORK.

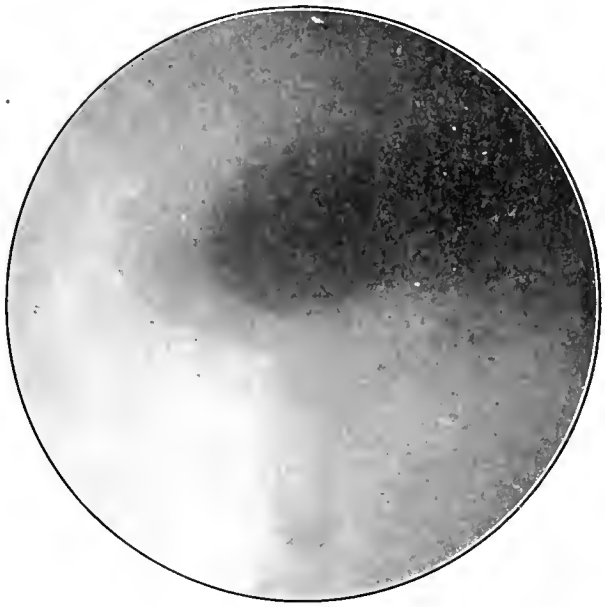
HIEF IN INTERNAL MEDICINE, MOUNT SINAI DISPENSARY; ATTENDING PHYSICIAN IN DIGESTIVE DISEASES, VANDERBILT CLINIC.

THE following case which was under my observation for a little over 4 months, presents many interesting points, and I therefore believe it worthy of publication.

Patient, D—d I——s, 32 years old, lieutenant in the Russian army, 7 months in this country, was seen at the Vanderbilt Clinic on January 12, 1912.

History.—Has had four attacks of severe pain in the epigastric region during the last 18 months. The pain, though chiefly localized in this area, radiates to the right and left of the back and upper chest. It is rather of a dull and gnawing character and lasts four to five weeks; in the intervals between the paroxysms patient is in perfectly good health. The attacks of pain are not so severe as in typical severe gallstone colic, and therefore never necessitated the injection of morphine.

No matter how annoying the pain may be, it ceases when the patient lies down for 30 to 60 minutes. After having been in the recumbent position for that time, he is relieved for a few hours. The pain occurs several times during the day and always ceases in the decubitus. At night patient is free from pain. When, during one of the paroxysmal attacks, he happens to be in the street, the patient is frequently compelled to partake of some food. This somewhat relieves, but does not stop the pain, as is the case in the recumbent position without a previous meal. These data were obtained from patient after cross-examining him many times. When, after four or five weeks, the paroxysmal pains subside, he finds he has lost five



Showing a Shadow, Probably of a Pancreatic Calculus, Below the Tip of the Third Lumbar Vertebra.

pounds in weight, which he recovers in the intervals.

He claims that the fourth attack was more intense and lasted longer than any of the three previous ones. During the attacks there was constant nausea, but actual vomiting occurred only on one occasion. He is also suffering from obstinate constipation.

Past History.—Twenty years ago patient suffered from dysentery; fifteen years ago from malaria (in the Caucasus); five years ago from smallpox in a mild form during an epidemic in Russia. When, eight months later, he became convalescent from smallpox, bulimia occurred, from which he suffered for one month. This condition passed away without any treatment. Has been in perfectly good health since then until 18 months ago, when he had to flee from his native country as a political convict, and it is to this time that he dates back his first attack. Patient has been married for six years, and is father of three healthy children. Syphilis was denied. Never takes alcohol in excess, but drinks occasionally: tea and coffee moderately. Smokes 10 cigarettes daily.

Family History.—Father died from blood poison-

ing after a trauma, mother from phthisis. One brother and one sister are living and well.

Physical Examination.—Patient does not give the impression of a sick man, but looks rather robust. Skeleton and muscles are excellently developed. Teeth in very good condition. Lungs: Left upper lobe in region of fossa infraspinata reveals somewhat rough vesicular breathing, no râles. Percussion note over both lungs shows normal resonance. Heart: Apex beat can be palpated in fifth left intercostal space, somewhat inside of the mammillary line. Heart sounds clear. Superficial and deep heart dullness normal. Systolic blood pressure 160. There are no signs of arteriosclerosis on inspection, and on palpation of the accessible arteries: temporals, brachials, radials, and dorsalis pedis. Abdomen is not distended. Border of liver not palpable; spleen not enlarged. There are no tender spots characteristic of gallstone colic or gastric ulcer, there is marked tenderness midway between epigastrium and umbilicus. Palpation in this region gives the impression of an inflammatory mass like a small adherent tumor. On many subsequent occasions this resistance could not be felt any more. Kneejerks somewhat exaggerated. Pupils react to light; accommodation normal.

The first examination of the urine did not reveal any albumin, nor an excess of indican, but sugar was demonstrated with Fehling's test. The sediment did not contain any casts; it was amorphous, and not a single crystal of calcium oxalate could be detected.

Considering that there were paroxysms of pain in the epigastric region with radiation to the back; that the pain did not become aggravated after meals; that there were no tender spots to the right or left, and that the attacks did not resemble renal colic at all, the provisional mental diagnosis could have been duodenal ulcer (pain and bulimia); but the presence of sugar made one rather suspicious of pancreatic lithiasis. This possibility was communicated to the patient at the first examination.

January 14.—Urine: Amount for 24 hours, 1,230 c.c. Albumin, none. Bile, none. Sugar, positive. Polariscopic examination: 0.7 per cent. = 8.4 gm. pro die. Indican, not in excess. Sediment, amorphous, no oxalates.

January 15.—Analysis of stomach contents on fasting after a preliminary test supper. Amount obtained 20 c.c., well digested: no stagnation, a few yeast cells, no sarcinæ. Urine: no sugar (Fehling, Nylander, and polariscopic examination). Sediment, enormous amount of large and small oxalates.

January.—Ewald's testmeal. Obtained 50 c.c. contents, well digested. Free HCl 98, total acidity 116, starch—blue. Urine: no sugar, but slight reduction with Fehling, negative with Nylander's test. Sediment, small oxalates.

Feces: Offensive smell, not clay-colored, but rather brownish. After weighing out 5 gm. of feces and adding 20 c.c. of physiologic salt solution, it took very much time to rub up the mass in a mortar. After centrifuging the filtration proceeded at an unusually slow rate. This filtrate showed the presence of trypsin, but diminished against normal (50 units).*

Amylopsin was about normal. Bile was clearly present. Test for occult blood negative.

*Friedman, G. A.: "The quantitative estimation oftrypsin and amylase in the feces and in duodenal contents." Preliminary report MEDICAL RECORD, February 24, 1912.

Microscopic: Many meat fibers and crystals of neutral fat.

Having obtained more evidence for pancreatic insufficiency (chronic pancreatitis) the possibility of calculus as a probable cause for the condition was strengthened. Having in mind the fact that pancreatic calculi, derived from cholesterin may be seen on a skiagram, patient was referred to Dr. L. G. Cole, whose report with one plate follows:

January 17.—There is a clear-cut, well-defined shadow just below the tip of the transverse process of the third lumbar vertebra, much further out than the normal course of the ureter, and this lies in the position of the head of the pancreas.

From a study of these plates the diagnosis of a calculus in the abdominal cavity outside of the kidney and outside of the normal course of the ureter, is justified. There is a very strong probability of its being a pancreatic calculus.

Second report, January 20.—Stomach filled with bismuth. The same findings, except that the relation of the shadow to the head of the pancreas was not discernible.

The following two tables show the quantitative analysis of the feces. The first analysis was made on January 18 when patient had his paroxysmal pains, the second one on April 17 when absolutely free from pain.

FECES ANALYSIS I. (DR. V. OEFELE.)

Amount received, 55.5 gm. Coherence, lumps of hazelnut size. Color, in different pieces from dark brown to yellow brown. Odor, slightly of putrid cheese.

Naked eye examination: Very few dark pieces, the largest about 3 mm. long.

Litmus reaction: Clearly alkaline. Stercobilin: Between slightly and clearly present.

Blood (Lyle) test: Inside of the fecal masses, absent; few particles of mucus on outside show a faint trace of blood.

Specific gravity: 0.910.

The feces dissolved in 9 times the weight of water.

Total sediment: 340 per cent. vol. (*a*) Poorly divided, none. (*b*) Finely divided, 30 per cent. vol. dark brown and tan-colored particles mixed. (*c*) Slime: 310 per cent. vol. medium brown.

The upper liquid not translucent medium brown. Cream 0.8 per cent. light tan-colored.

Total solids by weight, 30.9 per cent. Ash by weight, 13.92 per cent. slightly red.

Sol. minerals, 4.01 per cent. by weight. Insol. minerals, 9.91 per cent. by weight.

Coefficient of non-utilized food, 40.5:100.

Mucus by volume 370 per cent., by weight 21.62 per cent. solid to solids.

Bacteria by vol. 63 per cent., by weight 9.03 per cent. solid to solids.

The coefficient of intestinal autointoxication: 365 per cent. of normal.

Albumin sol. in H_2O vol., trace only; by weight, trace only.

First ether extract: 29.65 per cent. Color of first ether extract: Light olive. The first ether extract of 100 gm. solid matter needs 41.4 c.c. N/10 NaOH to neutralize.

Second ether extract, 8.27 per cent. Total ether extract, 37.92 per cent. Stearinic acid (Fried. Mueller), 1.18 per cent.

Unsplit fat (Mueller), 28.47 per cent. Split fat (Mueller), 9.45 per cent. Total nitrogen of fresh

feces, 6.02 per cent. Total albumin, 37.63 per cent. Carbohydrates, 17.80 per cent.

Microscopically seen: In sediment *b*—Some tissues of vegetables and fruit slightly masticated, many vegetable hairs; some triple phosphate, many muscle fibers. In sediment *c*—Mostly detritus and mucus of slight transparency, few muscle fibers.

Interpretation of Feces Analysis—By Dr. v. Oefele.—The time of voiding in the morning is normal. The voiding interval of 24 hours is also normal. But the total amount of 55.5 gm. in 24 hours (normal 90 gm.) is too low. The total solids of 31 per cent. (normal 25 per cent.) is too high. It is evident, therefore, that the organism intends to make a compensation by a higher resorption in the colon. The patient has a difficulty in moving his bowels. This causes very slight bleeding of the anus. There are no evidences of any bleeding through the intestines. The reaction to litmus is normal. The amount of bile is also normal; but the decomposition of the bile pigment goes to a higher degree than normal. There are very many muscle fibers of different sizes seen in the microscope. Most of these muscle fibers have sharp-pointed corners and are strongly pigmented. This is an evidence that the meat is well masticated and mixed with the saliva of the mouth, but the pancreatic juice does not perform its duty. The color of the feces is slightly plaid. This shows a slight degree of liver trouble. The amount of ash, 13.92 per cent. (normal 13.95 per cent.) is about normal; but the relation between soluble ash to insoluble ash 4.01 : 9.91 per cent. (normal 1.87 per cent : 12.08 per cent.) is increased in this way that the residue of food (soluble ash) is increased and the excretion of the organism (insoluble ash) is decreased.

The ether-soluble matter in these feces (commonly called fat) is twice increased (29.65 per cent. instead of 14.2 per cent.). The specific gravity is 0.970 (normal 1.062). The low specific gravity in this case comes from the high ether-soluble matter. If we make the examination according to Prof. Friedrich Mueller the total ether extract would be 37.92 per cent. (normal 17 per cent.), the stearinic acid or free fatty acids, 1.18 per cent. (normal 6.16 per cent.); soaps of Prof. Mueller, 8.27 per cent. (normal 2.80 per cent.); unsplit fat, 28.47 per cent. (normal 8.04 per cent.), and the split fat, 0.45 per cent (normal 8.96 per cent.). Therefore the fat splitting, according to Prof. Mueller, would be 22.3:100 (below 40:100 evidence), very strong for insufficiency of pancreas. The degree of resorption of split fat is about normal or maybe more than normal.

In a more chemical way the ether extract has 41.4 degrees of rancidity and 531 degrees of esterification (in 100 gm. total solids). It can be seen that the molecular weight of the present fat in average is normal; but the amount of true free fatty acids and soaps is too low and the amount of true neutral fat is too high. There are only 1.31 per cent. (normal 9.7 per cent.) true fatty acids (saponifiables), 17.66 per cent. of dyslysines and 10.68 per cent. (normal 4.50 per cent.) cholesterin and coprostearin. To the fat metabolism also belongs the steapsin, which in these feces is absolutely absent.

The ternary substances, mostly called carbohydrates, are in this case 17.80 per cent. (normal 18.10 per cent.); it is about normal. The carbohydrate-splitting ferment amylopsin is very strongly present (more than normal). It was isolated by glycerol. The calculated carbohydrates in this case seem to be normal, but they are decreased and this difference is only covered by increased amount of mucus.

The total nitrogen is 6.02 per cent. (normal 8.60 per cent.). True albumins soluble in water are only present in pathological cases, but in this case absent. Total albumins 37.63 per cent. (normal 53.75 per cent.) In regard to the high amount of ether-soluble matter the diminution is about normal; but especially the mucus and muscle fibers are increased and other nitrogenous matter decreased. The mucus of the feces treated by nine times its weight of water, that is 370 per cent. volume, should normally slightly exceed 150 per cent. The increased amount of mucus and the increased amount of cholesterin and coprostearin is a prevention against too high intestinal autointoxication, according to Prof. Oscar Liebreich. In this case the amount of bacteria is 9.03 per cent. of total solids (normal 33 per cent.). The intestinal autointoxication is 305 per cent. of normal according to the decreased amount of bacteria. The trypsin is clearly present, but in a smaller amount than normal and the splitting of casein gives more abinuret and less albumoses and peptones than normal. The oxidases are very strongly present and would be equal to the oxidizing power of a solution of 16 per cent. sodium nitrite.

Feces Analysis II.

Amount received: 85 gm. Coherence: Dry-formed coherent matter. Color: Inside and outside chocolate brown. Odor: Sweet putrid.

Visible with naked eye: Some dark pieces 4 to 5 mm. long.

Litmus reaction: Starting slightly alkaline, turns slightly.

Stercobilin: Clearly present.

Blood (Lyle test): Clearly present.

Specific gravity: 1.033.

The feces dissolved in 9 times its weight in water.

Total sediment: 155 per cent. vol. (*a*) Poorly divided; 22 per cent. grayish brown. (*b*) Finely divided; very dark brown. (*c*) Slime, 1.33 per cent. vol.; grayish chocolate brown.

The upper liquid not translucent reddish chocolate brown, marked trace of cream.

Total solids: 29.84 per cent. by weight. Ash: 12.97 per cent. by weight, strong reddish brown.

Soluble minerals, 1.41 per cent. Insoluble minerals, 11.56 per cent.

Coefficient of non-utilized food, 12:100.

Mucus by vol., 182 per cent.; by weight, 18.10 per cent. solid to solids.

Bacteria by vol., 12.5 per cent.; by weight, 2.72 per cent. solid to solids.

The coefficient of intestinal autointoxication, 1200:100.

Albumin sol. in H_2O vol. trace; by weight trace.

First ether extract, 23.22 per cent.

Color of first ether extract, dark coffee brown. The first ether extract of 100 gm. solid matter needs 122 c.c. N/10 NaOH to neutralize and 243 c.c. more to saponify.

Second ether extract, 4.64 per cent. Total ether extract, 27.86 per cent.

Stearinic acid (Fried. Mueller), 3.45 per cent.

Unsplit fat (Mueller), 19.77 per cent. Split fat (Mueller), 8.09 per cent.

The coefficient of fat splitting, 29:100. Nitrogen, 1.894 per cent.; Total albumin, 11.84 per cent. Carbohydrates, 51.97 per cent.

Microscopically seen: Rare starch granules, many large muscle fibers, some vegetable hair, many mucous threads.

Steapsin, absent. Amylopsin, clearly present. Oxydases, faint trace. Trypsin, marked trace. Sugar producing, marked trace.

January 23.—Examination of blood (Dr. Snyder): Hemoglobin, 100 per cent. Red blood corpuscles, 6,500,000. Leucocytes, 9,000. Differential: Polymorphonuclear, 67. Small lymphocytes, 28. Eosinophiles, 5 per cent.

On three more occasions polycythemia was found. Blood pressure on two occasions: when patient had pain, 160; when there was no pain, 120 to 130.

January 30.—Analysis of Urine. (Dr. v. Oefele.) Amount in 24 hours: 1,980 c.c.

Physical.—Amount received, 445 c.c. Appearance, clear. Odor, not abnormal. Color, in passing light, yellow; in reflected light, light orange.

Qualitative.—Reaction to litmus paper, clearly acid; indican, about normal; blood, absent; bile pigments, absent.

Carbohydrates.—Sugar, less than 0.05 per cent. (less than 1.00 gm.); other reducing matter, very strongly increased.

Fats.—Fat, acetone, absent; diacetic acid, absent.

Dissolved Proteins.—Mucin dissolved, absent; nucleoalbumin, marked trace; seralbumin, absent; albumin by ferrocyanide, absent; albumin by picric acid, absent; albumin by nitric acid, absent; albumoses, marked trace; peptones, absent; amino-acids, strongly present.

Centrifuge Sediment.—After 12 hours icebox: Total sediment, less than 0.1 per cent. This sediment consists mostly of very many small oxalates, very rare occasionally pus cells, very rare epithelia, occasionally one mucous cast (cylindroid) seen.

Microscopical and Microchemical Examination.—Cast, mucous casts; crystals, very many very small oxalates; amorphous deposits, absent; red blood cells, absent; leucocytes, very rare; epithelium, very rare.

Quantitative.—Specific gravity, 1.020; total acidity, 36 (713 c.c. N/10 NaOH).; normal should be 40; total solids by weight, 5.30 per cent. (104.94 gm.); by Haeser, 4.660 per cent.; organic substances, 3.72 per cent.; normal should be 3.634 per cent. or 78 per cent. of total solids. Ash, 1.58 per cent. (31.28 gm.); normal should be 1.026 per cent. or 22 per cent. of total solids. Urea, 2.20 per cent. (43.56 gm.); normal should be 2.096 per cent. or 45 per cent. of total solids. Uric acid total, 0.108 per cent. (2.14 gm.); normal should be 0.047 per cent. or 1 per cent. of total solids. Uric acid dissolved by 4° C., 0.108 per cent.; normal should be 0.047 per cent. or 1 per cent. of total solids. Ammonia, 0.068 per cent. (1.35 gm.); normal should be 0.47 per cent. or 1 per cent. of total solids. Chlorine, 0.610 per cent. (12.08 gm.); normal should be 0.699 per cent. or 15 per cent. of total solids. Phosphoric acid (P_2O_5), 0.200 per cent. (3.96 gm.); normal should be 0.233 per cent. or 5 per cent. of total solids. (9.27 gm.) sulphuric acid (H_2SO_4), preformed 0.468 per cent.; normal should be 0.233 per cent. or 5 per cent. of total solids. Etherified sulfuric acid, 0.017 per cent. (0.33 gm.); normal should be 0.020 per cent. or 0.43 per cent. of total solids. Lime (CaO), 0.050 per cent. (0.99 gm.); normal should be 0.023 per cent. or 0.5 per cent. of total solids. Magnesia (MgO), 0.009 per cent. (0.18 gm.); normal should be 0.012 per cent. or 0.25 per cent. of total solids. Sodium and potassium, 0.698 per cent. (13.82 gm.).

Special Remarks.—Trypsin, absent; amylopsin, strongly present; steapsin with cottonseed oil, marked trace; with ethyl butyric, absent; by calorimeter, color corresponds to an average urine with specific gravity, 1.012.

During the month of February urine was examined four times. On one occasion sugar was absent, oxalates present; on three others sugar present, 1.2 per cent, 1.4 per cent., 1.6 per cent., oxalates absent.

March 2.—Analysis (by Dr. Bookman). Amount of urine, 1,400, strongly acid; sugar, 1.68, 23.62 gm.; acet. diac., negative; preformed sulphates, 5.5356 gm.; etherified sulphates, 0.213; no oxalates.

March 14.—Sugar, 1.2 per cent., no oxalates.

March 20.—Sugar, 1.5 per cent.; no oxalates.

April 14.—Amount 1,650; sugar, 1.8 per cent.

An *x*-ray picture taken April 17 by Dr. Cole showed the same shadow as in the two original plates.

Patient was free from pain from the beginning of February until the beginning of May, when the attacks were even more intense and frequent than in the fourth attack.

On May 14 patient came to the clinic asking to be admitted to the hospital. While in the clinic he had such severe pain of the same character that he asked permission to lie down. After lying down for an hour, he was relieved, but the pain did not cease as in previous attacks. He was admitted to the Roosevelt Hospital on May 16 and on the next morning operation for pancreatic lithiasis was performed by Dr. Peck.

Report of Operation.—Duodenotomy, choledochotomy, pancreatotomy. Dorsal position. Gas and ether anesthesia.

Incision to inner edge of right rectus one-half inch from median line, abdomen opened, head of pancreas explored by separating the gastrocolic omentum at its right border, drawing the transverse colon downward and duodenum to the right. Head of pancreas was lumpy and thickened. No mass suggestive of a calculus could be felt. Several lumpy thickenings were explored with a fine long hypodermic needle, while the fingers held the head of the pancreas firmly from behind and in front without any calculus being detected by the needle. Incision through the retroperitoneum to the right of the duodenum with rotation of duodenum forward and to the left to expose the posterior part of head of pancreas and bring duodenum forward. Careful palpation with head of pancreas between the fingers and thumb failed to detect any calculus. Duodenotomy was then performed and a search for the papilla made. A small papilla, evidently an accessory pancreatic duct, was found, *but the main papilla of Vater could not be identified.* After a prolonged search duodenum further rotated forward, exposing the retroduodenal portion of common bile duct. This was incised and a probe passed downwaard through incision and duct into duodenum, curving this forward and using it as a retractor, the duodenum and head of pancreas were lifted forward and a second probe was passed from papilla up into pancreatic duct well out into the body. This could be felt within the pancreas by the palpating fingers. An incision was then

made through the pancreatic substance anteriorly down to the probe opening the main duct. Through this incision another probe was passed outward into the body and backward toward the duodenal opening without detecting any dilated portion of the duct or any calculus. Severe bleeding occurred from numerous veins during the procedure. Hemorrhage was checked with catgut ligatures passed on needles into pancreatic substance. After a careful search and further needling of all suspicious hardened nodules in pancreas, the pancreatic wound was closed with a mattress suture of catgut and the probe into the pancreatic duct was withdrawn. Opening into duodenum was carefully sutured with two tiers of continuous suture. The duodenum was then held forward, the opening in common duct explored and closed by continuous suture of No. 00 chromic gut. The exposure of structures and manipulation was difficult throughout and very prolonged. A rubber tube drain wrapped with gauze and rubber tissues of good size was then carried down to the region of the wound in the common duct alongside of duodenum. The wound was closed by layers with catgut, chromic gut for rectus sheath, silkworm gut and silk to exit of drain. Total time of operation, three and one-half hours. Condition fairly good, although the patient showed considerable evidence of shock. Pulse about 120 at end of operation, and small.

Patient died May 19, 1912.

Partial Autopsy performed by Dr. Mann. Abstract of Report.—Complete clinical diagnosis, pancreatic calculus.

Summary of History.—Exploratory laparotomy for supposed pancreatic calculus. Negative findings except for chronic pancreatitis.

Anatomical Diagnosis.—Chronic interstitial pancreatitis. Postoperative acute hemorrhagic pancreatitis with fat necrosis of surrounding parts, and local peritonitis beneath wound. Edema of the lungs. Renal congestion with parenchymatous degeneration.

Microscopical Diagnosis by Dr. Warren.—Fat necrosis with inflammatory reaction (tissue near pancreas). Chronic interlobular hepatitis with recent central degeneration. Intestinal chronic myocarditis with acute exacerbation. Diffuse mild parenchymatous nephritis. Necrosis of mesenteric fat. Chronic interstitial splenitis. Interlobular pancreatitis with autolytic necrosis and postmortem degeneration.

Discussion.—Although at the operation and autopsy only chronic interstitial pancreatitis was found, it is probable that a small concrement from Wirsung's duct could have escaped during manipulation, as the papilla of Vater could not be identified at the operation. The attacks of pain pointed rather to a calculus. As no adhesions were found it is hard to understand why the pain was promptly relieved (with the exception of the last attack) in the recumbent position: a condition occasionally met with in urethral calculus. It is a well known fact that in biliary obstruction a suspected calculus may not be found at operation, and yet symptoms due to the obstruction will disappear. The same holds good for renal calculi. I well remember a patient who had had several attacks from renal calculus, with bloody urine, and in whom a ureteral calculus was distinctly shown on the *x*-ray plates. At operation, however, performed by Dr. A. A. Berg in Mount Sinai Hospital, no calculus was found. The operation was performed about six years ago, and patient never had any attacks of pain during this period.

I wish to quote briefly a case of Atkinson and Hirsch, which very much resembles my case. "Patient, a coachman, had a number of malarial attacks six years previously, from which he made a perfect recovery. He had also had measles and grippe. Dyspepsia and abdominal pain, for which the patient applied for relief, had come on insidiously about eighteen months ago, the last attack being rather more severe than the preceding one. It occurred about two weeks ago and was characterized by abdominal pain in the upper quadrant, associated with a feeling of oppression about one hour after eating. These symptoms were never considered alarming by the patient, nor did they give him any marked discomfort and were generally relieved by some simple remedy. There was no evidence of loss of flesh. Possibly there were gallstones in the gallbladder or cystic duct. The man fell dead in the ward. At autopsy, chronic interstitial pancreatitis was found; about 2 cm. from the termination of the duct there was a calculus about the size of an orange seed, very irregular in outline." It is possible, therefore, that a concrement of such size or a little larger could have been present in the case reported without marked dilatation of the duct, which became lost during the long time of search for the papilla of Vater. Escape with the feces before operation is also possible, as at the Roosevelt Hospital one day before operation a shadow in the region of the pancreas could not be demonstrated.

The occurrence of glycosuria, at first transitory and later more permanent, is uncommon in chronic interstitial pancreatitis, but in the presence of calculi sugar has been observed, according to Albu, in 45 per cent. of cases.

And last, but not least, the most frequent cause of chronic pancreatitis is, according to Opie, obstruction of the duct of Wirsung due to pancreatic calculi, if biliary calculi in the terminal part of the common bile duct, or carcinoma invading the head or body of the gland are excluded. These conditions are ruled out in our case. There was neither syphilis, nor alcoholism. Supposing there was no calculus, then the etiology of our case remains obscure. Dysentery and malaria could not have been seriously taken to explain the etiology, as patient was well after these ailments. How much the smallpox played a rôle as an etiological factor for the occurrence of chronic pancreatitis, remains an open question. Yet, Robson pointed out the occurrence of chronic pancreatitis after infectious diseases.

In connection with the etiology of pancreatitis in the latter condition, I remember having saved a colleague several years ago from an exploratory laparotomy for gallstones or pancreatic cancer. Patient, who was over 50, suddenly became jaundiced, the icterus being a deep one. Treatment for several weeks was of no avail. It was known to me that he had grippe some time before icterus appeared, and, therefore, I considered his present condition to be a catarrhal icterus due to swelling of the head of the pancreas and pressure on the common duct. In about eight weeks the icterus disappeared and the patient has been well since.

Case I.—In a man with catarrhal icterus, speaks very much for the fact that a catarrhal icterus may be of pancreatic origin. In this case, low values were found for trypsin and amylopsin in the feces

while patient was jaundiced, the values becoming gradually higher as the icterus disappeared.

Though explanation to Table I of feces analysis was given, it is interesting to note that the analysis of feces showed slight liver trouble (chronic hepatitis confirmed at autopsy), but for chronic interstitial myocarditis and nephritis there were no signs during life, nor perhaps for chronic *splenitis* (malaria). The blood pressure of 160 on many occasions could be explained by pains, as in the intervals the blood pressure was 120-130. The polycythemia is interesting. Robson calls attention to the high color index in pancreatic disease, and he compares the findings in this condition with pernicious anemia, yet I could not find such a high red blood cell count in the literature on the subject of diseased pancreatic gland. In this respect, therefore, our case is unique.

Mention should also be made of the "vicarious oxaluria" when sugar was absent. Mayo Robson called attention to such findings in diseases of the pancreas.

REFERENCES.

1. Atkinson, A. D., and Hirsh, J. L.: "Pancreatic lithiasis with chronic interstitial pancreatitis followed by diabetes mellitus." *Am. Jour. of the Med. Sciences*, 1907, 543-551.

2. Albu, Albert: Beiträge sur Diagnostik der inneren und chirurgischen Pankreaserkrankungen, Halle, 1911, p. 76.

3. Opie, Eugene L.: "Disease of the Pancreas." Philadelphia and London, 1903, p. 213.

4. Mayo Robson and Cammidge: "The Pancreas, Its Surgery and Pathology." Philadelphia and London, 1907, p. 423, p. 232, 240.

5. Friedman, G. A.: "The Quantitative Estimation of Trypsin and Amylase in the Feces and in Duodenal Contents."

123 East Ninety-fifth Street.

A LARGE ABSCESS OF THE TEMPORO-SPHENOIDAL LOBE, COMPLICATING A CHRONIC PURULENT OTITIS MEDIA, WITHOUT ANY SYMPTOMS EXCEPT AN OCCASIONAL MARKED RISE OF TEMPERATURE.*

By ROBERT LEWIS, M.D.,

NEW YORK.

Mary McNeely, æt. 8, was admitted to my service in the New York Eye and Ear Infirmary, December 25, 1909. The history of her aural disorder, as ascertained from the mother, was as follows: Two years previously she had experienced an acute purulent inflammation of the right middle ear, complicating an attack of scarlet fever. In March, 1909, a polypus had been removed from the middle ear, and then for a few months she had been free from any visible discharge from the ear. In September or October the same year, however, the discharge had reappeared, and had continued up to within ten days of the time of her admission to the infirmary, when it suddenly ceased. Then, three or four days later, she began to complain of a severe pain in the ear, accompanied by general headache, which latter symptom had continued up to the date of her entrance into the hospital.

An examination made at the time of her admission to the infirmary showed her heart, lungs, and kidneys to be normal. The body temperature was 102° F., the pulse was 108, and the respirations were 26. The external auditory canal was stenosed to such a degree as to prevent a view of the drum membrane. Pressure upon the mastoid process showed a very marked tenderness of this bone, and evidences of a subperiosteal abscess were present.

Operation.—The subperiosteal abscess was first evacuated, and then it was seen that a small perforation existed in the cortex of the mastoid process. The removal of the overlying bone showed that the antrum was filled with a cholesteatomatous mass. This was thoroughly removed and the radical mastoid operation was performed. During the eight days immediately following the operation the temperature remained below 101.2° F.; on the tenth day it rose to 102.4° F., and on the twelfth day it reached 105.2° F.

During the next nine days, *i.e.* from the twelfth to the twenty-first day following the operation it rose, on four occasions, to heights varying between 104° and 105.2° F. On the morning of the twenty-second day after the operation, the temperature fell to normal and remained below 99° F. until 8 P.M. of the twenty-fourth day, when, following a chill, it began to rise and ultimately reached 105.2° F. at 4 A.M. of the twenty-fifth day.

Dr. Walter B. James and Dr. Walter Lester Carr, the consulting physicians of the infirmary, examined the patient at this period of her illness, and declared that they were unable to discover any lesion (apart from the disturbance in the region of the ear) which might account for the changes in her temperature.

The patient had no headache, no drowsiness, no stupor; on the contrary she was very bright, even when awakened from a sound sleep. The eye grounds were normal and the reflexes were normal.

The Widal test gave negative results. No tubercle bacilli were found in the stools. Smears from the aural discharge showed a mixed infection. On January 15 the blood culture furnished a negative result.

BLOOD COUNT.

	Jan. 5	Jan. 8	Jan. 12	Jan. 17
Red B. C.	4,800,000	4,800, 00	4,000,000	4,020,000
White B. C.	25,200	7,400	16,000	8,200
Small Mononuclear	7.5	16.	9.4	35.2
Large Mononuclear	2.5	6.	2.6	7.6
Transitionals	0.	1.8	1.0	.6
Polynuclear	89.5	75.8	87.	56.
Eosinophile	0.	.2	0.	.6
Mast Cells	.5	.2	0.	0.

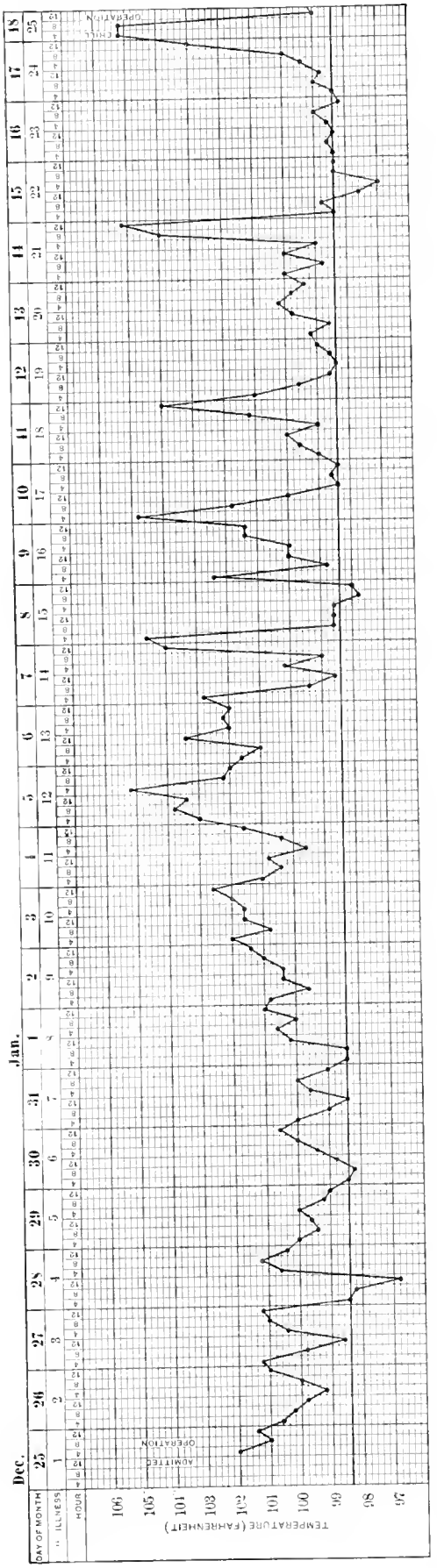
On only two occasions was the pulse slower than seemed compatible with the temperature curve.

On January 18 (the twenty-fourth day after her admission to the infirmary) she complained of a slight headache. She was weak and emaciated. There was no symptom of a definite lesion in any organ nor of a general dyscrasia. Had it not been for her temperature the girl would probably have been sent home.

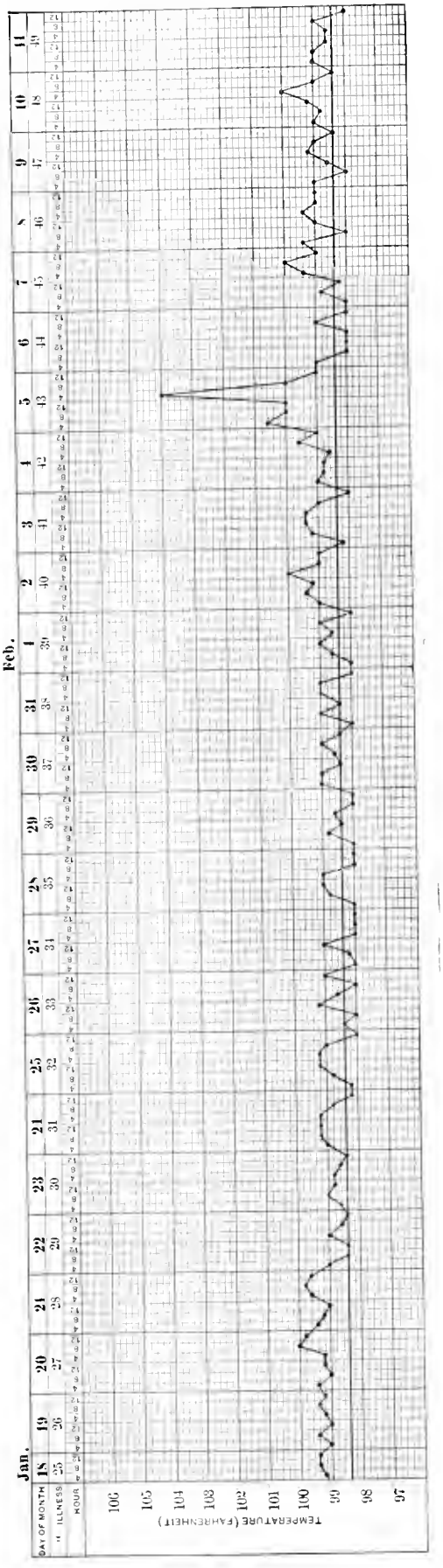
The wound had done well except over a small area in the extreme upper posterior portion of the region where the mastoid cells had been excavated. This area, the diameter of which was about that of an ordinary lead pencil, presented a dark coloration and manifested no tendency to develop granulation tissue. I determined to investigate this area more closely, and accordingly, on January 18, I reopened the wound and excavated the discolored region by means of a curette. I found that the area of discoloration increased as I made my way through the cellular structure of the bone towards the middle fossa, and as I removed a portion of the inner plate

*Read before the Otological Section of the New York Academy of Medicine.

of the bone forming the floor of this fossa there was a sudden gush of foul-smelling pus. The opening in the bone was enlarged and about three ounces of foul pus was evacuated.



The abscess cavity, measured from the dura at the point of ulceration in an upward, inward, and backward direction, extended fully two inches into the brain substance. It possessed well-defined



walls. It had ruptured through the dura mater immediately above the necrotic area of the bone, and was prevented from extending over the meninges by an exudate of plastic lymph.

Subsequently to the operation the temperature never exceeded 100° F., except on February 6, when it rose to 103° F. for a short time.

I believe that in the present case the abscess had been present for some time, and that the radical mastoid operation had kindled into action a latent inflammatory process. The fact that the abscess had well-defined walls undoubtedly increased very greatly the patient's chances of recovery.

During the first day or two after the abscess had been evacuated I used a rubber drain, but after that I depended entirely upon gauze for drainage purposes.

The patient made a rapid recovery.

48 West Fortieth Street.

LITERARY GENIUS AND MANIC-DEPRESSIVE INSANITY.

WITH SPECIAL REFERENCE TO THE ALLEGED CASE OF DEAN SWIFT.

By ARTHUR C. JACOBSON, M.D.,

BROOKLYN.

There is a strong disposition among many writers to postulate the essential "insanity of genius." In the Medical Record, June 15, 1912, there occurs the statement that "apparently no writer can dare to aspire to literary distinction without running the risk of submitting to psychological dissection by the alienists. In many instances it is no longer a question as to whether a certain genius was insane or not. The modern query is 'From what form of insanity did he suffer?' " These remarks were prompted by an article which recently appeared in the *American Journal of Insanity*, under the title, "Manifestations of Manic-Depressive Insanity in Literary Genius," the author of which, Dr. Eva Charlotte Reid, one of the physicians at the Government Hospital for the Insane, at Washington, D. C., sets forth that the study of the life and works of the literary genius would indicate that the literature was incidental to the psychosis and simply formed an outlet for the abnormal feelings and passions of the writer. This mental disease, it will be remembered, is marked by alternations of elation and depression, of frenzy and despair, of mania and melancholia, and Dr. Reid discerns in the writings of many of our greatest authors much evidence that they experienced such emotional turmoil. She draws the conclusion that they were victims of manic-depressive insanity and that their infirmity was the motive force that drove them on to more or less glorious expression. "With an emotional instability which raises him (the literary genius) to the pinnacle of exaltation one day and plunges him into the depth of despair the next, his industry must be spasmodic." Unable to adapt himself to his surroundings, "in his literature he finds an outlet for all his abnormal feelings and passions. Here he pours forth, under various guises, his rapturous joys and fears, his dreams of bliss, and his dread of impending calamity. The manifestations of his abnormal mental condition, which are denied him in actual life, find an outlet in poetry and fiction, under the guise of literary and poetical inspiration."

The present writer finds it difficult to lend his intellectual sympathy to such a thesis, which practically amounts to claiming that geniuses are geniuses *because* they are insane. There is a vast amount of evidence showing a family history of insanity or degeneracy of some sort in the case of many, if not most, of the greatest geniuses, and such geniuses are unquestionably more likely to become insane than are less highly organized people—and do so become very frequently indeed—but the writer contends that these facts in no way justify such assumptions as those of Dr. Reid, and the great majority of writers who have occasion to touch upon the subject of genius. A watch is not built to withstand lawn mower usage. And it must not be forgotten that literary geniuses differ from most subjects of psychological or psychiatric study in that they have written themselves down, so to say. Their hopes and fears, in some cases—like Rousseau—all their inner lives, are recorded. Who shall say that the emotional reactions portrayed are so vastly different in kind or in degree from those of other noble but less expressive minds under special stress? Then we ought to consider the adequacy of the factors entering into elation, depression, etc. If Swift was downhearted after his virtual banishment from England, if he was depressed after the death of his dearest friends, if he became choleric under the grievously hard political knocks he received from bitter enemies, if he was a sufferer from arteriosclerosis after the age of twenty-three, why must we read into such facts manic-depressive insanity, any more than the response to adequate factors that might be expected to occur in such a mighty mind, or even in any first-rate mind? Why is failure to react strongly to adequate intellectual stimuli made the criterion of sanity?

It seems an odd thing to the writer that a great literature is not emanating from the asylums of the land, if it be true that the relation of genius and insanity is so close. The answer is that the great genius must be eminently sane. He must possess in the highest possible degree the critical faculty directed toward his own literary productions. No great literary work can possibly be produced if this endowment be lacking. Such a lack is one of the most marked characteristics of the insane. The mind that produced Hamlet was super-sane. To the critic who insists upon intellectual mediocrity and slow emotional reaction as the criteria of sanity, such a mind seems essentially insane. The "normal" man, says Dr. Reid, rises above the common ills of life—poverty, sickness and death—that is, is not greatly or for very long affected by them. It was the presence of such things around him in Ireland, in superlative degree, that inspired the best efforts of the greatest of English satirists. The writer would say that Swift was the most "normal" man in the Ireland of his day because he did react so strongly to the terribly adequate factors that surrounded him, which reaction gave us the "Drapier Letters" and awoke his compatriots from their moribund state. It is the abnormality of the social masses of to-day, and not their normality, that precludes an effective reduction of infant mortality. Those who realize the appalling conditions and are fighting them are not victims of manic-depressive insanity, either. No critic with only a partial sense of humor ought to examine the writings of literary geniuses with a view to their conviction on the score of manic-depressive insanity. To one in whom this sense is somewhat atrophied or absent De Quincey's "Murder as One of the Fine Arts"

would certainly seem brimful of manic-depressive evidences. De Quincey, it is true, is cited by Dr. Reid as one of the group of insane geniuses. Probably a study of this masterpiece on murder helped to the fatal conclusion. To our mind, the writing of such a piece of literature is conclusive proof of what we have called super-sanity.

Dr. Reid confesses that Swift's brilliant satire, "A Modest Proposal for Preventing the Children of Poor People in Ireland from Being a Burden to Their Parents or Country," convinced her of his insanity. How utterly lame such a conclusion really is the writer will endeavor to show in detail. The effort is worth while, for a strong light will be thrown on the hasty and superficial character of the conclusions drawn by those critics who are determined to make unconformable facts conform to their theories. Dr. Reid not only betrays a total lack of the ironic humor sense, but she is either unfair or grossly uninformed as to the circumstances in which the "Modest Proposal" was written. The piece in question was written in 1729, after Swift's final break with Walpole. It is a wonderful piece of sustained irony, suggesting with a ghastly vividness the horrible state of the Irish people, whose champion Swift was. In studying it we must take into consideration the frightful conditions that inspired it, the motive of the writer, and its political effect. When this is done it will be seen very clearly to have been justified. Read in ignorance of such considerations, the piece might seem a diabolical fantasy. As a plain matter of fact it proved one of the most effective efforts of the great satirist. And it was only one of a long series of powerful attacks upon the indefensible English policy in Ireland against which Swift contended with all his tremendous intellectual power. The Irish "were a people to be crushed, ruined, persecuted, tormented, extirpated." (Sir William Wilde.) England had done everything destructive to Ireland's interests that could well be conceived of by the ordinary mind, and it was merely left to Swift, the Irish patriot and man of unique political genius, to suggest ironically the suitability of Irish children for English food, "examining the conception in every aspect, following it out in all its consequences, and deriving from it, systematically and consistently, a train of the most grotesque incidents." (Lecky.) Seeing that England had done almost every conceivable harm to the Irish, that she should eat them was at least metaphorically in order. Swift burned with a hatred of tyranny, injustice, and oppression, and while he had no special love for Ireland, if we may believe his own declarations, "his humanity and charity were equal to his wit, and required as good and true a taste to be equally valued." (Pope.) In what better cause could he have employed his great powers of sarcasm and irony, trenchant, original wit, and tremendous invective, than in that of Ireland of the eighteenth century? The intellectual qualities of this terrible partisan made him the natural leader of the exploited Irish, who fully recognized his patriotic services, despite his Protestant creed, his profession, and his personal intolerance of Roman Catholicism. Lecky credits him with being the first man to teach the Irish to rely upon themselves and to lead them to victory at a time when they were deprived of every hope. "He gave a voice to their mute sufferings and traced the line of their future progress. . . . An intense and terrible sincerity was one of the chief elements of his power." The poverty and desolation prevailing in Ireland at this time, due to English exploitation, could hardly be exaggerated, and resistance on constitutional grounds was out of the question. Only the peculiar literary genius of Swift met the indications adequately. His was the voice of the people, and it spoke with success. Its echoes "marked the transition from an age of semi-barbarism to an age of civilization—from the government of force to the government of opinion." (Lecky.) England had systematically crushed Ireland by draining her of sound money and substituting a debased currency (Wood's copper coinage, the patent for which was awarded to the King's mistress, the Duchess of Kendal, who jobbed it out to Wood for £10,000); by forbidding, in 1666, the importation of cattle from Ireland into England, cattle being the principal article of Ireland's commerce, three-fourths of which commerce was with England; by enacting, in 1696, that no goods of any sort could be imported directly from the colonies into Ireland; by penal laws of atrocious severity; by preventing as far as possible the holding of public office by Irishmen, lucrative and influential posts being given to Englishmen; by passing in 1699 an act "of crushing and unprecedented severity," which forbade the export of the Irish woolen manufactures not only to England, but to all other countries, this industry having threatened England's supremacy in the same field; by shipping her supernumerary beggars to Ireland, augmenting the alarmingly large number already in that unhappy country; and by smothering the legislative powers of the Irish Parliament and the utterances of Irish champions like Molyneux, whose "Case of Ireland" was formally condemned by the English House of Commons. Thus a premium was put upon destitution, chronic famine, beggary, crime, and servility. We are, of course, not unmindful of those apologists who tell us about political exigencies and the expedients sometimes forced upon even humane conquerors where the conquered present special problems, but their dialectics are not especially convincing.

Lecky appraised the celebrated piece of humor the inspiration of which we have discussed at its proper value, and Sir Walter Scott saw in it nothing worse than "inimitable gravity of irony," relating with keen amusement how a foreign author had seriously accepted Swift's proposal that the rich English feed upon the poor Irish. Scott represents Swift as concerned with the emancipation of the country of his birth and as wholly indifferent to personal aggrandizement. The "Modest Proposal" is assuredly shocking. It was intended to shock the England of Walpole's day, and that country certainly needed all the shocking that could be administered by the masterful Irish satirist or anybody else possessed, not by insanity, but by superb intellectual and literary power, for of constitutional remedies there were none. But Dr. Reid is quite blind to its political and sociological significance and can only say: "Many of his (Swift's) writings could only be the productions of an insane mind. For instance, in a pamphlet entitled 'A Modest Proposal for Preventing the Children of Poor People in Ireland from Being a Burden to Their Parents or Country,' he suggests that these children be fattened, sold to the wealthy, killed, their bodies used for food, and their skins for gloves and shoes. He dilates in the most horrible manner on the age at which they would be most palatable, the best man-

ner of cooking, and the relative weights and values at different ages."

Sir William Wilde, after a study of the available data, declared that there was no proof that Swift had ever been insane, and that his peculiarities in later life were due to the ordinary decay of nature. The opinion of this eminent Irish physician is practically conclusive.

A recent writer on true neurasthenia recites as leading emotional symptoms ill-humor, unreasonableness, peevishness, irritability, impetuousness and a tendency to fault-finding, trifling occasions leading to outbursts of temper; a prevailing mood of depression and despondency is characteristic of these sufferers; frigidity or sexual impotence is frequently observed. Swift had all of these traits and the diagnosis may well stop short in his case at neurasthenia. Dr. Reid's citation of such traits amounts practically to an attempt to show that Swift ought to have been insane, even if he were not, but nothing beyond the implication of neurasthenia can be tortured out of them. That he should have been a neurasthenic is quite understandable, when one considers the man's stormy political life, ill health, and inability to marry because of a sexual defect, as well as his misfortunes in general, and what might be called his involuntary failure as an ecclesiastic. He was not the first man, and will not be the last, to be suspected of insanity because he ferociously and effectively assailed political corruption. For a considerable period, before his exile to Ireland, land of his birth and education, he controlled English public opinion more than any other man, and was influential to that degree that he became the most powerful defender and counsellor of the Tory party, leading the way to the dismissal of Marlborough and the Peace of Utrecht. In the case of Swift we are not dealing with a second rate character, nor with a lunatic of any kind or degree, but with one of the greatest men of all time, possessed of marked defects easily lending themselves to the grossest exaggeration, and of traits that made him feared or hated by the pygmies and knaves of his own day and the "tin horn" critics of posterity. He was "the most tragic figure in the literature of the eighteenth century—the only man of his age who could be conceived as affording a groundwork for the creations of Shakespeare." One smiles in his case when he reads Dr. Reid's dictum that the industry of the victim of manic-depressive insanity must be spasmodic. There was nothing spasmodic about the indefatigable and continuous labors of the author of "Gulliver's Travels." One laughs in his case when he learns from Dr. Reid that the manic-depressive genius is unable to adapt himself to his surroundings and that it is this which leads to the selection of literature as an outlet for the thoughts that he has spun in his own unreal world. Swift had "an eminently practical mind, seizing with a happy tact the common-sense view of every question he treated, and almost absolutely free from the usual defects of mere literary men." (Lecky.)

The writer has spoken of Swift's arteriosclerosis. At the age of twenty-three he began to suffer from dizziness and ringing in the ears. As he grew older his querulousness, irritability, and other symptoms increased. We are well aware to-day of the relationship sustained between arteriosclerosis and neurasthenia. The autopsy that was made after Swift's death disclosed cerebral shrinkage and arteriosclerosis. Dr. Reid claims that the aural symptoms marked the beginning of the psychosis from which she alleges he suffered. The terminal breakdown at the age of seventy-three (death came five years later) Dr. Reid calls an "engrafted arteriosclerotic dementia." To the writer's mind, Swift's case typified arteriosclerosis as Osler and other observers have noted this condition in the very young, the symptoms of cerebral neurasthenia therefore resting upon an organic basis, a relationship which has been dwelt upon particularly by Stengel. Being a simple and sensible view, based upon known facts interpreted in a non-sensational way by one who is not a professional alienist obsessed by the bizarre doctrine that postulates the essential insanity of genius, it may not appeal to the lovers of the *outré*. Let us discourage all such doctrines of the crowd, lacking as they do any sound or even defensible psychiatric basis. They belong in the class of Lombroso's arguments touching upon the alleged insanity of Christ, whom he considered and tried to prove a paranoiac. The simple truths of science and of life are fascinating enough.

That the true genius is necessarily crazy is essentially a vulgar view, fostered, apparently, by every intellectual plebeian. It is high time that it be shattered. There is a failure to distinguish between the insane temperament and actual insanity. Too fine a distinction for the bourgeoisie of science, it nevertheless is a vital point. Still finer for them is the fact that the insane temperament itself, only less than actual insanity, is a handicap to the genius and not his "motor force." It is easier to conclude the essential insanity of genius and save a deal of sound, hard thinking. Why, say these short-cut philosophers to the writer, you yourself admit insane family history, insane temperament, and the frequent occurrence of insanity. What are you driving at?

Genius makes for insanity, but neither insanity nor the insane temperament makes for genius. The genius is usually, if not always, of insane temperament, but his best creative work reflects the man at his best, that is to say, sanest. To the degree that clinical insanity enters in, to that degree is his work vitiated. Insanity is the Nemesis of the delicately balanced genius, never his good angel. He does his work not because of, but in spite of, the Damoclean sword. The genius differs from other men in that he presents a curious capacity for superlative sanity alongside a similar capacity for insanity. In all respects clinical insanity is antithetic to the faculties that actuate the creative mind, but nature implants the insane diathesis in accordance with her law of compensation. Psychopathological states, the result of the insane temperament or of the toxins of tuberculosis or colon bacteriemia undoubtedly at times excite and color the creative labors of true geniuses, but they are not geniuses because of the psychopathology. The fundamental quality of mind is *sui generis* and the thesis of Dr. Reid utterly fallacious. Genius is not a disease.

115 JOHNSON STREET.

BACTERIN TREATMENT IN PULMONARY TUBERCULOSIS.

BY GEORGE SANDERS, M.D.,

NEW YORK.

THE following is a continuation of a report of Case II, published by me in the MEDICAL RECORD of February 24, 1912. In this case Mrs. M. commenced bacterin treatment on October 25, 1911, and received up to March 25, 1912, injections of the combined

bacterins twice a week, the dose being gradually increased until 0.9 cubic centimeters was reached. The bacterins used are a combination of streptococcus, multivalent, 50,000,000; staphylococcus, multivalent, 500,000,000; coli communis, multivalent, 100,000,000; and pneumococcus, 100,000,000 in each cubic centimeter, the initial dose used being one-half cubic centimeter or less.

During the time of treatment the patient stated that she felt better and better, that her appetite was improving, and that she noticed that her health in general was better. The patient did not return after March 25, 1912, and I have not seen her since.

On March 11, 1912, a microscopic examination of this patient's sputum was made in a private laboratory. The report showed the presence of tubercle bacilli, one or two in a field, and also a few staphylococci. A monthly examination of the sputum hereafter was contemplated in regard to all pathogenic germs in order to obtain a better record of progress, but no opportunity was given.

The subsequent larger doses of bacterins were well borne. The patient's chart of her fever and pulse, taken four times daily, showed that the temperature rarely reached 100° F. However, on February 24, in the evening, it reached 101 1/5° F., and March 1, at noon, 101° F. At no time was it subnormal. The pulse averaged 90. There was no gain in weight.

Tuberculin treatment was to be given this patient at an early date. Perhaps her condition of well-being made her discontinue treatment.

Case III.—Mr. C., aged twenty-two years, a steamfitter's helper, came to me on November 3, 1911, with the following history: Patient had had a cough for the past two years, but had been in fair health until July, 1911. At that time he had pleurisy and was ill for one week. Owing to a suspicion of pulmonary trouble he was sent to Sullivan County, N. Y., where he remained for seven weeks. His sputum was found to contain tubercle bacilli. Since that time he has been getting worse. He had an hemoptysis a week ago. He has experienced no feverish sensations, and has had no night sweats. He often feels chilly and has dyspnea on slight exertion. His appetite is good, his bowels are regular. He has no headaches. His former weight was 123 pounds, but he now weighs 108 pounds. A brother died of consumption.

On examination the patient's lungs showed the usual signs: dullness, subcrepitant and crepitant râles over the right upper and middle lobes, etc. Sputum positive.

On November 1, 1911, I injected 0.5 c.c. of combined bacterins, the initial dose. The patient came twice weekly for these injections until December 27, 1911, after which he failed to return. There was a slight reaction after the fourth injection, and rarely after the following ones. From the initial dose of 0.5 c.c., a gradual increase up to 0.8 c.c. was made. His weight increased to 112 pounds, a gain of 4 pounds. The pulse and temperature, taken only in the office, showed an average of, pulse, 120; temperature varying from slightly above to slightly below normal. The patient stated that he felt no change, except an improvement in the dyspnea on exertion.

Case IV.—Mr. C., aged forty-seven years, born in Italy, came to me on November 8, 1911, with the following history: He has had pulmonary tuberculosis for about three years. His cough, which began three years ago, has been steadily growing worse. His appetite is very poor. Bowels regular. He vomits a thin, clear fluid nearly every morning. His cough is excessive on rising in the mornings. His weight, which had been 155 pounds, is now 130 pounds. His sputum is thick and often greenish. At first he had night sweats, but he has none now. He has had no hemoptyses or feverish sensations. He has dyspnea on exertion and walking; he feels very tired and weak all the time. His surroundings are of the poorest kind and not clean. The patient looks very emaciated and unclean. He was advised to return to Italy at once as he could not live very much longer. There was no history of consumption in his family. On examination he showed signs of severe lung involvement. Sputum contained tubercle bacilli.

From November 8, 1911, to March 27, 1912, the patient received injections of the combined bacterins in doses varying from the initial dose of 0.2 c.c. to 0.8 c.c. twice weekly, after which he failed to return. He had some headache and malaise after only a few of the injections. His appetite began to improve almost immediately, and his general feeling of well-being became stronger and stronger. His cough became decidedly better. His temperature, taken at regular intervals, by himself, showed a variation between 99° and 100° F. in the afternoon and evening, and was always subnormal in the mornings. There was a decided improvement in the dyspnea. His weight averaged 141 pounds, at one time reaching 143 pounds, a gain of 13 pounds.

Case V.—Miss O'D., aged forty-six years, unmarried, came to me on November 9, 1911, with the following history: At the age of seventeen years she had pleurisy; thereafter whenever she took cold she had pains in her chest. Twelve years ago she had pneumonia, and about eight years ago she developed a bronchitis, and ever since she has complained of a severe cough, especially on rising in the mornings; expectoration is a thick, greenish mucopus. She does not remember having had night sweats. Her weight and strength have been steadily declining for the past two years, and she has had severe hemorrhages from the lungs. She has severe dyspnea on walking and on slight exertion. Her appetite is very poor, and for the past four weeks she has taken little nourishment. She has had fever for a long time. Her bowels are constipated. She sleeps fairly well except when severe coughing spells keep her awake and restless for long periods. Her weight when in fair health was about 116 pounds, and she now weighs 85½ pounds. Her father died of pulmonary tuberculosis. Her sputum contains tubercle bacilli.

This patient returned to me on December 10, 1911, for treatment. She was given 0.3 c.c. for the initial dose, which was followed by a severe reaction. This patient came twice weekly for these injections. She was kept on doses of 0.3 c.c. of combined bacterins for some time and the dose was gradually increased to 0.5 c.c., which dose later she stood very well. Her appetite improved at the beginning, but later varied exceedingly. She felt a slight improvement generally on some days. The temperature showed an average of 101° F., and often reached 102° F. and a little over. She had a constant normal temperature in the early morning. Her weight varied also, the last weighing showing 81¼ pounds. This patient stopped treatment after March 31, 1912.

The cases so far treated by me have all shown some good effects from the use of the combined bacterins. If in some cases no more was achieved than an increase of appetite or a better feeling gen-

erally, this in itself would be an indication to use this agent in order to cheer the patient, inspire hopes, and make his burdens easier.

It is an unfortunate circumstance that those who came for treatment to me did not have the patience to continue for at least eight months or a year, in order to reach a definite conclusion as to the ultimate effects of these injections.

210 West One Hundred and Seventh Street.

THE MILK SUPPLY.

By CHARLES CRISTADORO,

POINT LOMA, CAL.

When in connection with the prevention of infant mortality milk, as a food, was discussed at an international medical congress, and Dr. Abram Jacobi, who was present, was called upon for his views, he summed up the whole situation in two words, so it is reported, *"clean milk."*

New York City is being served with milk by 40,000 dairies, more or less, all within 600 miles of New York, the aggregate milk amounting to 4,000,000 pints daily. The dairies supplying such milk are all presumably subject to inspection by the New York Board of Health, 18 inspectors in all being employed by the Health Department for that purpose. An inspector may average one inspection of each one of the dairies in his district once a year, when in many, perhaps altogether too many, cases the inspector should make his rounds once a week or once a month at least, to insure sanitary conditions.

Before the days of the Chicago Drainage Canal, when Lake Michigan did double duty as receiver of Chicago's sewage and its source as a water supply, the Board of Health would when necessary notify the public to "boil all drinking water until further notice."

So, with inadequate inspection facilities at its command, the acknowledged presence of the tuberculous cow and the typhoid-tuberculosis stable bred fly, and the presumed lack of sanitary measures, in instances too numerous, there is nothing to do but, as Chicago did with her water, make the milk germ-free by pasteurization. It is the cutting of the Gordian, unsanitary knot, as far as New York City's milk was concerned.

Primarily the unscreened stable and the ungroomed cow opened up avenues of germ and physical contaminations in the milk—the typhoid fly and the manure-covered bag, udders, and flanks of the cow. The development of the tuberculous cow in conjunction with the now understood typhoid-tuberculosis fly, complicated matters in a germ sense.

The dangerous foremilk of even a healthy cow, streptococcus-laden slime, and tuberculosis carrying dust being harbored in the teats, added to the difficulties. The excreta also of the cow that contained virulent tuberculosis germs, when drying into dust, facilitated the scattering of these germs into the milk pail, upon the flanks, udders, and bag of the cow, and into the already more or less dusty hay in the manger of the cow.

The airing and sunning of the milk utensils in the open at and near the very homes and breeding places of the typhoid-tuberculosis fly (the cow stable and manure piles), instead of within outdoor enclosures, thoroughly fly-screened, added to the unsanitary list of infection possibilities.

The storing of open milk cans in the stable longer than necessary, instead of in the cleanly milk room where the pails of freshly drawn milk could be speedily carried added neither to the sanitation nor the flavor of the milk.

Inspection, frequent inspection, and, when necessary, the withdrawal of a license to ship one's milk to town, is the solution of and is the complete answer to this unsanitary proposition, fortified in each case by the process of clarification. As soon as the milk comes into the milk room, before it is cooled, warm from the cow, by machine clarification the foreign matter, manure, blood, germ-laden slimes (mostly from the udders), hairs, and dust are instantly mechanically precipitated from the milk, although the milk remains in its original, whole, unseparated condition, for this clarification of the milk is a measure of complete physical dirt and slime's expurgation, although in no manner disturbing the relations of cream and milk, the milk leaving the machine as it entered, whole and entire, but clarified as to dirt and slimes.

Milk separation, the dividing into separate and distinct bodies (the cream and the skimmed milk, freed from some of their impurities because of the centrifugal force) is a helpful process, but in no sense as thorough as clarification, whose office is to attend strictly to the precipitation of slimes and all germ-laden foreign matter.

The fact that cream, under the separating process, when dragged, as it were, through and away from the body of the milk, drags also with it more than its percentage of germ life, *making butter a greater carrier of tuberculosis than milk itself*, emphasizing strongly and pointedly the indisputable sanitary conclusion, that in the making of butter the warm milk should be at once clarified by the farmer as soon as the milk pail enters the milk room, and if the farmer does his own separation, the milk then separated, the cream cooled properly, and when delivered at the creamery the final pasteurization to take place. This would mean not only clean, well flavored, and well keeping butter, but absolutely innoxious germ-free butter.

Enlightenment on the milk sanitation question is speedily to lead up to the machine clarification of the milk, to rob it of all foreign matter (90 per cent. of which is manure), before machine cream separation, followed by pasteurization, takes place for butter making purposes.

Prof. Metchnikoff endorses the mechanical clarification of milk so pointedly, so strongly, that he insists that all milk be machine-clarified. It might seem that in the case of certified milk it would be gilding gold to clarify or pasteurize it. But we take a quantity of certified milk, unpasteurized, and by the plate process we find 12,000 bacteria per cubic centimeter present, 30,000 being the maximum allowed. We pass that same milk through the clarifying machine and, *in the slimes thrown down*, find 800,000 bacteria to the cubic centimeter. When Prof. Metchnikoff declares that all milk demands machine clarification it would seem that he had good and sufficient reasons for his contention.

Mr. Straus, realizing that milk, clarified first and then pasteurized, was a very sane and sanitary measure, now has the milk at all the pasteurized milk stations under his control clarified. A great step along the sanitary milky way. Clarification is adopted at various sanitary milk stations and is helping to solve the clean milk situation beyond compare. New York and a score of large cities are now partially using it.

But in the clarification of milk one thing should be well considered, namely, that if manure, slime,

blood, pus, seeds, dust (likely to harbor and give out, when dissolved, germs of tuberculosis), be present in the milk (and to a *greater* or *lesser* degree they are present in all milk, no matter what the precautions along sanitary lines), there can not be a single argument advanced, even restricted to the commonest ideas of decency and ordinary food cleanliness, against machine clarification. If such "foreign matter" can be effectually removed by mechanical clarification why should there be any delay; why should not removal be a matter of quick action, and this done in the milk when it comes fresh and warm from the cow and before solution of the foreign matter begins to set up fermentation and germ dissemination, a thing likely to take place during a 600-mile, more or less, railroad journey and a period of 24 hours between the dairy and the table of the consumer in New York? If during that time through refrigeration the milk is kept below the temperature that invites fermentation, the foreign matter, the physical "dirt" (90 per cent. of which is manure) gets little chance to ferment, but solubility has resulted in that time and just a little carelessness as to an allowing of higher temperatures because of refrigerator neglect, is sufficient to play germ havoc with the milk.

On November 17, 1906, an article of the writer's appeared in these columns pleading for Federal Milk Inspection and Compulsory Clarification. We have Federal Meat Inspection, and yet the nature of milk and its paramount food value, as compared with meat, as an absolutely necessary and essential food for infants and children, receives no official recognition at the hands of the sanitation officers of the Government. The helpless infant and the growing child, so far as milk is concerned, must take care of themselves.

The National Milk Commission of to-day is the first step towards solving the problem that New York City has failed in utterly—the inspection of 40,000 dairies within 600 miles of New York, supplying 4,000,000 pints of milk daily, and to make such milk safe for human consumption, 75 per cent. or 3,000,000 pints of it must be pasteurized to make the germs and physical dirt in it innocuous. Milk, like Shakespeare's man, must too have seven ages along its sanitary pathway of life and evolution. The neglected age, the watered age, the skimmed age; the preserved (salicylic acid, boracic acid, formaldehyde), the tuberculosis age; the pasteurized age, and finally the golden age, when we shall have Federal inspection; when the tuberculous cow will be quickly detected and removed from the herd; when, in addition to fly screening, every conceivable sanitary measure shall be employed around the stables and as to the cows; when no milking shall be done in the stable itself, but in an annex where no feeding is done, no manure, hay, and other flying dust is present; when all milk utensils shall be aired in the sun and air, in simple enclosures screened from the typhoid-tuberculosis carrying fly; when the milk, while fresh and warm, is instantly cleansed, mechanically clarified by hand-power machines; when the milk so clarified is cooled and aerated, then bottled under sanitary conditions, sealed and, to make assurance doubly sure, pasteurized in the sealed bottle and then cooled and kept cool until upon the breakfast table or in the nursery of the infant.

If the human salvage value, the worth to the nation of each infant's life prolonged into manhood and usefulness; if the saving of doctors' fees, nurses' cost, druggists' bills, and undertaking expenses, were made up into one great economic total, the results of Federal milk inspection and clarification would give a balance over and above the expenses of such inspection, large enough to save Congress the worry of deciding whether one, two, or three new battleships required appropriations.

Better milk means a higher price, of course it does, and it is because of the 2 to 3 cents per quart paid the farmer to-day that 75 per cent. of the unsanitary situation holds. It is cheaper to produce dirty, unsafe milk than it is to supply "certified" milk, in fact clean milk, and in the ratio to the willingness of the public to pay a good price for a good article, will the quality of the milk supply enhance.

Let us compare bread, milk, and meat on a food value basis, the actual food we get out of each that goes to nourish and energize our bodies and discard the moisture of the loaf, the water (natural) in the milk, and the moisture and bone in the meat.

A ten-cent loaf of bread weighing say 24 ounces yields 1 pound of "food value." A pound of steak, costing 25 cents, yields three and two-tenths ounces of "food value," and four quarts of milk, costing 32 cents, yield one pound of "food value."

So, on an actual food basis, we pay the baker 10 cents per pound; the butcher $1.25 per pound, and the milkman 32 cents per pound. Even if we pay the certified milk man 20 cents per quart for his milk we get a pound of "food value" at a cost of 80 cents and we are yet nearly 50 cents a pound to the good, compared with what we pay the butcher for our steak. So, ordinarily, we pay $1.25 per pound for the meat on our table but only 32 cents a pound for baby's meat that means to the little chap far more than our steak, because *we* can get reconstructive values and energy from a score of palatable and digestible foods, other than meat, whilst little Bobby in the nursery has to diet along on 32 cents, and it's a matter of Hobson's choice with him. He is up against it dietetically good and hard; if he gets dirty milk he dies, if he gets no milk at all he dies, and if he gets clarified and pasteurized milk he must pay 80 cents per pound for it instead of 32. If the public understood this, were willing to pay more for their milk, not necessarily a "certified" price, and some way could be devised to see that the advance went into the pocket of the farmer now getting from 2 to 3 cents per quart for his milk, instead of halting by the way to keep the middleman company, milk conditions would, as it were, automatically improve.

Duration of Immune Bodies in the Blood After Antityphoid Inoculation.—M. Wollstein notes that in a series of twenty-four persons inoculated with antityphoid vaccine, the immune bodies in the blood reached their height within two months after the first inoculation, or one month after the third, then fell rapidly within the next two months. Only nineteen of the cases could be followed longer, and eight of these were negative for bactericidins within ten months after inoculation, and fifteen were negative after thirteen months. Only one serum reacted in a dilution of 1 to 1,200 at the end of thirteen months. The addition of lecithin to the vaccine did not influence the local reaction after inoculation, nor did it appreciably affect the formation of immune bodies to the typhoid bacillus. There is, of course, no justification for the conclusion that clinical immunity can be determined absolutely by the measure of immune bodies in the blood, since experience has apparently proved the contrary, a fact which can be accounted for by the latent power of the body cells to react more quickly to a stimulus which has once made them sensitive. That this power lasts for many years after an attack of typhoid fever is well known. It would seem, however, that reinoculation with typhoid vaccine within a year is indicated when exposure to typhoid fever seems imminent.—*Journal of Experimental Medicine.*

MEDICAL RECORD.

A Weekly Journal of Medicine and Surgery.

THOMAS L. STEDMAN, A.M., M.D., EDITOR.

PUBLISHERS

WM. WOOD & CO., 51 FIFTH AVENUE.

See fourth page following reading matter for Rates of Subscription information for Contributors and Subscribers.

New York, November 23, 1912.

AN INSTITUTE FOR THE PSYCHOLOGICAL STUDY OF ANTHROPOID APES.

ACCORDING to the computations of those best qualified to speak, the gorilla, chimpanzee, orang, and gibbon will be practically extinct a hundred years hence. Study of these anthropoids has already rendered such vast service to science that steps should at once be taken to defer as far as possible this period of final extinction, and especially to utilize to the utmost the remaining opportunities for research of all kinds. No effort should be wasted in seeking to acclimate specimens in temperate regions for study purposes, but experiment stations should be established directly in the habitat of the animals.

Rothmann, who discusses this subject in an article in the *Berliner klinische Wochenschrift*, October 18, 1912, regards the Canary Isles as an ideal locality for an experiment station. Not only is the climate well suited to the anthropoids but the islands are readily reached from the European capitals. Gorillas and chimpanzees could be transported readily from Western Africa, their habitat. If the orang and gibbon could not be successfully carried thither and made to thrive, a second station could be established somewhere in the East. Rothmann himself has already taken the initiative in this project. Last spring, upon the occasion of a journey to Teneriffe, steps were taken to procure and care for a consignment of chimpanzees from German West Africa, after it had become apparent that these animals could thrive there without requiring acclimatization.

The next step is to send to the station an expert who will study these animals from the viewpoint of experimental psychology. The aspects of the latter to be covered first are phonation, gesture, comprehension of spoken language, enumeration, perception of color, and education possibilities of the hand. At present the general movement has gone no further than the creation of a committee, headed by Professor Waldeyer. It is not clearly stated by whom this committee was created, nor it duties, nor to whom it is to report. Prominently mentioned in connection with this movement are the German Intercolonial Government, the Provincial Government in German West Africa, and two scientific foundations (Selenka and Plaut). The progress made will evidently depend largely on private means. The movement will not be restricted to psychology, but will include all branches of biological study, not the least being breeding and crossing experiments. That all possible efforts will be made to decide the problem of the evolutional relationship between anthropoids and man goes without saying. Rothmann lays considerable stress upon the belief universal among the savages who have always dwelt with the anthropoids, that the latter are not brutes but men like themselves. This belief appears to argue the existence of traits unknown to investigators.

Of special interest is the point made by Klaatsch, Sergi, and others that Eastern anthropoids have structural peculiarities in common with Eastern primitive man. Just as a similar correspondence is seen between Western anthropoids and the lowest forms of African aboriginal man. This has led to the hypothesis of a double origin of modern mankind. As it is already conceded that the latter is quite unrelated to some of the first men, who became entirely extinct in glacial or other cataclysmic epochs, it is hoped that more light will be shed on the relationship between the first men, modern men, and the anthropoids.

THE RECOMMENDATIONS OF THE SURGICAL CONGRESS.

OF the two recommendations made by the Surgical Congress at its closing session last week, the one calling for public instruction regarding the nature of uterine cancer and the need of early diagnosis and early operation in such cases must meet with the hearty approval of every medical man. Operation for cancer is a desperate remedy, but in the present state of the therapeutics of that disease it is the only one that offers any hope; and therefore until some one of the many workers in that field shall have discovered a specific the knife remains our only resource. Therefore it is very proper that women should be taught the necessity of seeking medical advice at the first sign of any trouble with the pelvic organs. Many times, fortunately, they will learn that the trouble is not serious, but now and again such prompt notice of slight symptoms will lead to the diagnosis of an incipient cancer, and this to early operation and possible cure.

Regarding the second recommendation, namely, that a special surgical degree be established, to be given by the colleges only after a special course of post-graduate study, and that the right to practise surgery, major surgery at least, be granted only to the possessor of such a degree, there is room for considerable discussion. Such a setting apart, and above, of one branch of the medical profession would not be looked upon with entire favor by the general practitioner, and it would not be surprising if any attempted legislation looking to that end aroused a decided opposition within professional ranks. The medical student is compelled, and rightly, to devote a large part of his college course to the study of surgery and surgical anatomy and he might justly claim that his time and his money had been wasted if he is to be debarred from putting such knowledge as he has acquired to prac-

tical use. The internist might also retaliate by demanding that the man with the new surgical degree should be debarred from general medical practice unless he could prove his right to such practice by a supplementary degree obtained by special postgraduate work in internal medicine. It is doubtful whether the needed legislation could be secured, for the tendency is rather the other way. In this State, for example, no distinction is made in the examination between the different schools, therapeutics having been removed from the list of subjects, a knowledge of which is demanded of candidates.

There is much, however, to be said in favor of this recommendation for a special degree and there will be time for its discussion after it has been definitely formulated by the committee appointed to work out the details. The members of this committee are men of high professional standing and of sound judgment and whatever the conclusions of their deliberations may be, we may be sure they will be worthy of the respectful consideration of the profession at large.

TWO EPIDEMICS OF TYPHOID FEVER.

In the Annual Report for 1911 of the Medical Officer of Health of the City of Bristol, England, is given the result of an investigation by B. A. I. Peters of an epidemic of typhoid fever which occurred in that city early in 1911. The fifty-one cases which comprised the outbreak were divisible into three groups, in each of which the source of infection could be traced to a single individual who had recently recovered from an attack of the disease. In each instance the possibility of infection by means of water, milk, or food was carefully considered, and, so far as possible, was excluded. The possibility of "contact infection" has certainly always been recognized, but it is usually met with as the cause of isolated cases. If flies can be acquitted as the carriers in this epidemic, as Peters is inclined to believe, then it is almost a unique instance and deserves such consideration as will tend to prevent the development of like epidemics in the future. One noteworthy fact was that as soon as the cases were reported, inspected, and removed to the hospital, the epidemic ended.

A second epidemic occurred in this country and has aroused a great deal of comment in the public press. It is reported by George W. Stiles, Jr. (U. S. Dept. of Agriculture, Bureau of Chemistry, Bulletin No. 156). Following a dinner held in Goshen, N. Y., at which there were 155 guests, a certain number became ill. Oysters from various sources were included in the menu and 127 persons ate "Rockaway oysters" from Jamaica Bay. Of these 17 developed typhoid fever and 83 suffered more or less from diarrhea. Of the remaining guests there were two taken sick after the dinner with the sort of indigestion which not rarely follows such a function. Other articles on the menu were carefully scrutinized and found blameless so that it seemed certain that the source of infection was to be found in the Jamaica Bay oysters. Stiles then investigated the conditions under which the oysters in Jamaica Bay were grown and "floated." He found that the waters of the bay are dangerously polluted by enormous quantities of raw sewage and was able to demonstrate typhoid, paratyphoid, and colon bacilli in oysters floated in these waters. The raw oyster is a favorite article of food, especially in the cities along the seacoast; it is a good culture medium, and any condition which endangers the purity of the oyster exposes to infection an enormous number of people. It is, therefore, gratifying to note that the Health Commissioner of New York City has ruled that henceforth dealers must prove the purity of the water in which their oysters are fattened in order to retain their permits.

It is essential that every member of the medical profession should consider it his duty to impress upon the minds of his patients the obvious lessons taught by these epidemics. Typhoid fever is preeminently a preventable disease and every case is the result of the negligence of some individual or set of individuals. Hard work will be necessary entirely to eradicate the disease, but it is possible.

ACUTE UTERINE HEMORRHAGE.

Every physician doing obstetrical work has met with serious hemorrhages from an atonic uterus occurring after expulsion of the placenta. Usually the administration of ergot and mechanical irritation of the uterine muscle by massage through the abdominal wall are sufficient to put a stop to the bleeding. Occasionally packing of the vagina is necessary, and still more rarely a radical surgical operation with ligatures of the vessels must be resorted to.

Some years ago Fritsch described a very simple method of dealing with such bleeding, his proceedure consisting in displacing the enlarged uterus out of the small pelvis and pressing it forward against the pubic synchondrosis. This may be done by manipulation through the vagina, and occasionally it may be successfully performed by external manipulation of the abdominal wall. Recently, and quite independent of Fritsch's proposal, Dr. N. Rachinsky has hit upon the same method and has found it very serviceable in several cases of alarming uterine hemorrhage (*Russkii Vrach*, Vol. XI, No. 34). Rachinsky considers that the success of the method is due not so much to the mechanical compression of the uterus against the bone as to the stretching of the broad ligament and the consequent obliteration of the blood-vessels supplying the uterus. With the flabby and stretched abdominal wall of a parturient woman it is quite possible to bend the uterus forward quite over the pubic joint, where the weight of the organ will keep it in this position. Occasionally a suitable bandage or some gauze in the vagina will be necessary to prevent the organ from resuming its former position. In all his cases Rachinsky found that the hemorrhage promptly ceased and the uterus could be safely replaced in a couple of hours' time. This procedure is so simple that he calls the attention of obstetricians to Fritsch's article (*Deutsche medizinische Wochenschrift*, No. 1, 1904) and to his own experience so that the method may be tried.

Random Thoughts on the Surgical Congress.

To the cities in which they are held, the meetings of the Clinical Congress of Surgeons of North America offer an unequaled opportunity of establishing their claims to rank as centers of surgical teaching and progress. In diversity, scope, and number, the clinics of the Congress just ended surpassed those of previous years and the demonstrations in the allied branches of surgical investigation and experimentation emphasized the fact that this city is leading in that work which conduces to substantial progress along scientific lines. The work of the clinics and laboratories was open to the inspection of probably the most critical audience that could be assembled, and the impressions carried away by the visiting members will undoubtedly play a considerable part in determining the degree of regard to be accorded future contributions in the literature of that surgeon or laboratory worker whose work has been so displayed. For the evening meetings the programs were well selected as representing those subjects that are at present arousing the most active interest of surgeons throughout the country. That the speakers were recognized as authorities in their given subjects, the attendance at those meetings was an adequate indication. Whether the visiting members came to this Congress with the idea merely of receiving stimulation through hearing and seeing in a general way that which is considered newest and best in surgery, or of obtaining a brief and concentrated course in some particular branch of surgery, the opportunities were equally great. To the workers in the field of surgery in Greater New York also the Congress was of no little value. Not only was their work reviewed at first hand instead of through the literature, but they had an opportunity never before presented of observing, through the lists of clinics for each day of the Congress, the scope of the work being done in their own community. It is noteworthy that there was little or no undue publicity in relation with the Congress. The newspapers indeed reported the evening meetings and described in greater or lesser detail some of the more notable clinics; but this was merely in the way of legitimate news gathering; the accounts were devoid of sensationalism, as a rule, and antemortem eulogies of individual surgeons were conspicuous for their absence. In this avoidance of réclame the Congress showed itself actuated by a truly scientific spirit.

A Reflection of Medical Activity in the United States.

A current number (October 21) of the *Berliner klinische Wochenschrift* certainly makes no announcement of a symposium of articles by or concerning medical men in the United States; and it is not often that such communications are found among its original articles. We do not look for them there, because the function of this periodical is to reflect the local work of the German metropolis, and to a less extent of the provincial clinics. It is therefore a striking commentary on the importance of the work being done at present in the States that four of the leading articles in this one number chance to be of transatlantic source. The first paper, by Harvey Gaylord of the New York State Institute for Cancer Research, Buffalo, relates to work which has been done in the prevention and cure of piscine cancer. The second article is by Oertel of the Russell Sage Pathological Institute of this city, and deals with a new disease first described by the author in 1904—a lesion of the liver secondary to cardiac stasis, which is unlike nutmeg liver and all other recognized conditions. A third article is by G. A. Friedmann of the Mt. Sinai Hospital, New York, on the clinical association of angiosclerosis in the mesenteric and femoral vessels, of syphilitic nature and apparently cured. Finally an article on organotherapy by Münzer is practically a résumé of Cushing's recent work on the hypophysis.

News of the Week.

A Royal Disease.—It has recently been stated in Russia that the young Czarevitch, whose mysterious illness has caused much alarm, is a sufferer from hemophilia, and it is pointed out that this may almost be called a "royal disease" since it is now more than ever prevalent among the princes of Europe. The late Duke of Albany is said to have succumbed to the disease, which also afflicts the second son of the King of Spain and some of the relatives of the Queen of England and of the Emperor of Germany.

Supervision of Dairies.—The New York Milk Committee has prepared, for presentation to the next Legislature, a bill making the supervision of the milk supply at the dairy obligatory on the State, instead of on the city as at present. The committee believes that the licensing and inspection of dairies, creameries, and milk shipping stations should be done by the State Board of Health; that the State Department of Agriculture should control the health of the dairy cattle and the sanitary conditions of the barns, etc., and of the methods of milk production and handling; and that the City Department of Health should test and inspect the milk as it is received here.

For New Cocaine Law.—The present law governing the sale of cocaine being generally considered inadequate, preparations are now being made to present to the next Legislature an amendment to it. As it stands the law makes the sale of the drug, except on a physician's prescription, a felony with punishment limited to one year's imprisonment and a $1,000 fine, and the possession of it a misdemeanor punishable by six months' imprisonment and $500 fine. It is proposed that the law be amended so as to make the sale of cocaine punishable by five years' imprisonment at least, the attempt to sell the drug punishable by three years' imprisonment, and the mere possession of it punishable by a fine of $1,000 or imprisonment for one year.

Dole for Blind.—The needy blind of New York City to the number of 548 recently received the yearly dole provided for them by the State, amounting to $49 each.

Hospital and College Alliance.—Through the generosity of Mr. George F. Baker of New York, a coalition has been made possible between the Cornell University Medical College and the New York Hospital. It is understood that an alliance similar to that between the Presbyterian Hospital and the College of Physicians will be effected, and that, in consideration of a substantial fund donated to the Hospital to aid its future building projects, the institution gives to the medical school, for purposes of teaching and research, one-half of its entire service, comprising medical, surgical, and children's wards.

in all about one hundred and fifty beds. Cornell has heretofore utilized one-fourth of Bellevue Hospital for its clinical teaching, but the more definite control of a hospital service of its own will enable it to continue, upon much broader lines, the research work for which it already enjoys so great a reputation. The further announcement is made of a gift to the College of a fellowship of $1,000 annually to be allotted for work in medicine in the wards of the New York Hospital.

Carrel Honored.—On November 16, in the Great Hall of the College of the City of New York, Dr. Alexis Carrel was the guest of honor at a reception attended by the President of the United States, the Ambassador from France, the President of the College, and more than five thousand others, including many of the delegates to the Clinical Congress of Surgeons. In acknowledging his reception, Dr. Carrel paid tribute to those who had worked before him, and especially to Dr. Flexner to whom and to the spirit of the Rockefeller Institute his success was largely due.

Resignations from Fordham.—That the dissension in the Fordham University College of Medicine has continued was shown on November 13, by the announcement of the resignations of four members of the Faculty in addition to those already noted, the school thereby losing the services of Dr. Smith Ely Jelliffe, clinical professor of mental diseases; Dr. John B. Huber, professor of pulmonary diseases; Dr. C. R. Keppler, clinical professor of orthopedics, and G. F. Shiels, adjunct professor of surgery. From the University, however, comes the announcement that the appointment of Dr. William F. Healy as Dean of the medical department, to take the place of Dr. James J. Walsh, was ratified at a meeting of the faculty on November 19. At the same meeting the appointment of instructors to take the places of those who resigned with Dr. Walsh was also confirmed, and the new constitution of the medical school was formally put in operation.

"S. C. A. A. News."—For the purpose of keeping its 10,000 members in touch with its work in the field of preventive philanthropy in New York State, the State Charities Aid Asssociation has begun the publication of a monthly newspaper, the *S. C. A. A. News*. The first number, bearing date of November, 1912, is a well illustrated, eight page journal of small size, and contains reports of various county tuberculosis hospitals, and a description of the proposed site for New York City's farm colony for inebriates. There is no subscription list, and the *News* will be sent to anyone interested upon application to the office of the Association, 105 East 22d Street, New York.

Medical Reserve Corps.—The New York Division of the Medical Reserve Corps of the United States Army was formed by the resident officers at a meeting at the Army and Navy Club on November 7. Col. L. Merwin Maus, Chief surgeon of the Eastern Division of the United States Army, presided and read a paper on the purposes of the Corps. The following officers were nominated for 1913: *President*, Henry Clark Coe; *Vice-President*, Thomas Darlington; *Secretary*, Harold Hays; *Treasurer*, H. Sheridan Baketel; *Councillors*, Arnold Knapp, Howard Lilienthal, Clarence A. McWilliams, Eugene H. Pool, and J. B. Rae. The next meeting will be held on Governor's Island on December 5.

Red Cross Christmas Seals.—In a new design the Red Cross seals for Christmas, 1912, have already made their appearance, and are being distributed throughout the country in large quantities. It is hoped that ten million will be sold in New York State alone.

Personals.—Col. William C. Gorgas of the Medical Corps of the United States Army and chief sanitary officer of the Panama Canal Zone, has been awarded the Buchanan medal by the Royal Society of England in recognition of his remarkable administration of the health affairs of the Canal.

Dr. John Cutting Berry of Worcester, Mass., has received from the Emperor of Japan, the Imperial Order of the Sacred Treasure of the Third Class, in consideration of his eminent and disinterested services while in Japan, looking to the promotion of her material well-being, notably his signal contributions to the improvement of medical and sanitary organizations. Dr. Berry was for twenty-one years a medical missionary in Japan.

Hospital Saturday and Sunday.—The report of the Hospital Saturday and Sunday Association shows that during the past year the sum of $116,940.26 was collected and distributed among the various hospitals of the city. Three hospitals, the Neurological Institute, the Manhattan Maternity, and the Jewish Maternity Hospital, were admitted during the year, making a total of forty-seven in the association. The associated hospitals during the year gave 1,950,170 days of hospital treatment, of which 61 per cent. were given without compensation to the hospitals from either the patients or the city.

New Hospitals.—Plans have been prepared for the erection of a new hospital on East 123d Street, New York, for the treatment of deformities and joint diseases. Two floors of the building will be devoted to a gymnasium and mechanical apparatus for the correction of deformities, and there will also be operating and sterilizing rooms, laboratories, complete *x*-ray and photographic equipment, and in the basement a shop for making shoes and surgical appliances.

The Volunteers of America also have filed plans for a hospital which they propose to erect on the lower East Side of New York, to be known as the Volunteer Hospital. The building will front 74.8 feet on Beekman Street, and 56.9 feet on Water Street. The cost is estimated at $65,000.

St. John's Guild.—During the past summer, the Guild cared for more children than ever before. A total of 55,617 patients were carried on the trips of the floating hospital, and for the first time sick children with their mothers were allowed to spend the hot nights on the boat. The seaside hospital of the Guild had the record number of 3,219 days of hospital care. The receipts for the year including $25,000 allowed by the city, were $127,000.

Tuberculosis Work.—The Jewish Consumptives' Relief Society held its eighth annual convention in New York on November 10 to 12. The meetings were addressed by Dr. Abraham Jacobi, Borough President McAneny, Dr. Philip Hilkowitz, and others. The society has a membership of nearly 25,000.

Aid Association.—At the annual meeting of the Aid Association of the Philadelphia County Medical Society held on November 11, the following officers were elected: *President*, Dr. Roland G. Curtin; *Vice-President*, Dr. John R. Schellenberger; *Treasurer*, Dr. John B. Turner; *Secretary*, Dr.

Lewis H. Adler, Jr. The president pointed out the great need for a home for destitute and aged physicians.

Army Medical Corps Examination.—The Surgeon General of the Army announces that preliminary examinations for the appointment of First Lieutenants in the Army Medical Corps will be held on January 20, 1913. Full particulars can be obtained from the Surgeon General, U. S. Army, Washington, D. C., the essential requirements being that the applicant be a citizen of the United States, between 22 and 30 years of age, a graduate of a recognized medical school, and of good moral standing. There are at present thirty-five vacancies in the corps.

Civil Service Examination.—The United States Civil Service Commission will hold an examination for dental interne, men only, on December 11, 1912, for the purpose of filling a vacancy in the position of dental interne in the Government Hospital for the Insane, Washington, D. C., at a salary of $600 per year, with maintenance.

Dedicate Medical Library.—The new building of the Lane Medical Library of the Leland Stanford University, San Francisco, was formally dedicated by President David Starr Jordan on November 3. The library, which contains 40,000 volumes, is a memorial to the late Dr. Levi Cooper Lane and his wife, through whose generosity it was made possible. The new structure in which it is housed was erected at a cost of $125,000, and is as nearly fireproof as it can be made.

Charitable Gifts.—By the will of the late Dr. Arthur Cabot of Boston, the Harvard Medical School received a bequest of $100,000; and upon the death of Mrs. Cabot the residuary estate, estimated at about $500,000 is to go to Harvard University.

The accounts of the estate of the late Mr. George Crocker, which have just been filed, show that Columbia University has received $1,566,635 for the Crocker Special Research Fund to be used in the study of cancer.

The Children's Hospital of Philadelphia has received a gift of $25,000 for the construction and equipment of an operating pavilion in the new buildings planned for the hospital. The gift is made by Miss Hetty King as a memorial to her sister Mrs. Mary Bankson King Wainwright. The pavilion will contain a main operating room and two smaller operating rooms, as well as complete dressing rooms.

St. Luke's Hospital, New York, receives a bequest of $7,500 by the will of Mr. Francis M. Bacon, who died last September at Ridgefield, Conn., for the endowment of a memorial bed.

By the will of the late Mr. Thomas Barden of New York, the following institutions receive bequests: St. Vincent's Hospital and St. Joseph's Home for Consumptives, $1,000; St. Rose's Cancer Hospital, and the Hospital for the Blind, $500 each.

The Society for the Relief of the Ruptured and Crippled of New York and the Home for Incurables, Fordham, receive bequests of $5,000 each under the will of the late Elizabeth F. Noble.

Smallpox Holds Steamship.—The steamship *Barbarossa*, which arrived in New York on November 13 from Bremen, was detained at Quarantine, owing to the appearance of a case of smallpox in the steerage.

Cholera in Turkey.—Startling reports of the spread of cholera among the Turkish troops have been received. Four hundred deaths are said to have occurred in one army camp during twenty-four hours, and the total number of cases at Tchataldja was estimated on November 15 to be about 7,000.

Phillips County (Mont.) Medical Association.—The following officers were elected at the annual meeting on November 5, at Helena: *President*, Dr. W. C. King; *Vice-President*, Dr. H. H. Thompson; *Secretary*, Dr. W. P. Orr.

Chickasaw County (Ia.) Medical Socety.—At the annual meeting held in New Hampton on November 7, the following officers were elected: *President*, Dr. H. D. Fallows, New Hampton; *Vice-President*, Dr. I. D. McKinley, Lawyer; *Secretary*, Dr. Paul E. Garden, New Hampton.

The Late Dr. Newcomb.—The following resolution was adopted at a recent meeting of the Faculty of Cornell University Medical College: "The Faculty of Cornell University Medical College record with deep sorrow the death of Doctor James Edward Newcomb which took place at his summer home, Lake Kushaqua in the Adirondacks, on August 27, 1912. He was born in New London, Conn., August 27, 1857, and had consequently just completed his fifty-fifth year. He was educated at Bulkley School, graduated from Yale University in 1880, and completed his medical course at the College of Physicians and Surgeons in New York City. Subsequently he became interne at Roosevelt Hospital, and since then practised in this City, confining his efforts to Laryngology and Rhinology. He was appointed Instructor of Laryngology at the foundation of Cornell University Medical College in 1898, and in 1911 was made Professor of Laryngology. He was an able and fluent writer, contributing many valuable papers to his special branch of surgery. The high esteem in which he was held by the profession is attested in part by his election to the following societies: American Laryngological, Academy of Medicine, West End Medical, Alumni Roosevelt Hospital, and Hospital Graduates. He was also consulting Laryngologist to Roosevelt Hospital. Although suffering from a chronic ailment he worked bravely; never neglecting a duty and remaining faithfully at his post until the end. Resolved that these expressions of regret be spread upon the minutes of the meeting of the Faculty and that a copy be forwarded to the widow of Doctor Newcomb as a token of the esteem and admiration in which he was held by his colleagues. (Signed) WILLIAM M. POLK, FREDERICK WHITING, ROBERT G. REESE."

Obituary Notes.—Dr. JOHN E. MONROE of Orange, Mass., a graduate of the Medical Department of Western Reserve University, Cleveland, in 1893, died in the Memorial Hospital, Worcester, on November 5, aged 53 years.

Dr. ROBERT FLETCHER, assistant librarian in the library of the Surgeon General's Office, War Department, Washington, died at his home on November 8, aged 89 years. Dr. Fletcher was born in England and received his medical degree from the Royal College of Surgeons in 1844. He came to the United States shortly thereafter, and during the Civil War served as a surgeon in the United States Army. Since 1876 he had been attached to the Surgeon General's library. For many years the work of compiling the "Index Medicus" was in his hands. He was a member of the American Medical Association, and the Medical Society of the District of Columbia, and a fellow of the College of Physicians, of Philadelphia.

Dr. John William Mallet, emeritus professor of chemistry in the University of Virginia, died at his home on November 7, aged 80 years. He was born in Dublin, Ireland, in 1832, and was educated in Germany, receiving the degree of Ph.D. from Göttingen in 1852, and of A.B. from the University of Dublin in 1853. He came to this country in the latter year, and took his medical education at the Tulane University of Louisiana, from which he was graduated in 1868, having served also as professor of chemistry. After holding the chair of chemistry in the University of Texas and in the Jefferson Medical College of Philadelphia for several years, he became professor of chemistry in the University of Virginia in 1885, and served until 1908. During that time he held many important lectureships and was the recipient of many honorary degrees, testifying to the breadth of his knowledge and the value of his researches.

Dr. Edwin R. Dibrell of Little Rock, Ark., a graduate of the Medical Department of the University of Arkansas in 1882, a member of the American Medical Association and of the Arkansas State and Pulaski County Medical Societies, and professor of medicine in the University of Arkansas, died at his home of cancer on October 20, aged 54 years.

Dr. William B. Charles of Hanford, Cal., a graduate of the Medical Department of the University of Louisville in 1887, formerly county physician and city health officer of Hanford, died at his home suddenly on October 18, aged 55 years.

Dr. William C. Steagall of Ozark, Ala., a graduate of the Bellevue Hospital Medical College, New York, in 1860, died at his home after a long illness on October 25, aged 85 years.

Dr. William H. Dorsey of Griffin, Ga., a graduate of the Georgia College of Eclectic Medicine and Surgery in 1897, died suddenly on October 26, aged 42 years.

Dr. Hiram B. Cross of Boston, Mass., a graduate of the Cleveland University of Medicine and Surgery, Ohio, in 1866, a member of the American Institute of Homeopathy, the Massachusetts Homeopathic Medical Society, and the Boston Homeopathic Medical Society, died at his home on November 1, aged 79 years.

Dr. William I. Hamlen of Detroit, Mich., a graduate of the Michigan College of Medicine, Detroit, in 1883, a member of the Michigan State and Wayne County Medical Societies, and formerly vice-president and secretary of the Michigan College of Medicine, died at his home on October 26, aged 57 years.

Dr. John Nutting of Mankato, Minn., died at his home on October 21 from cancer of the throat, aged 78 years.

Dr. Frank L. Hamilton of Chester, Pa., a graduate of the University of Pennsylvania, Department of Medicine in 1893, and a member of the Pennsylvania State and Delaware County Medical Societies, died at his home on November 4, aged 50 years.

Dr. William H. Robinson of Pottsville, Pa., a graduate of the University of Pennsylvania, Department of Medicine, in 1868, secretary of the Pottsville Board of Health, died at his home on November 4, aged 67 years.

Dr. John Thomas Duncan of Toronto, Canada, a graduate of the Toronto School of Medicine in 1882, and attending oculist to the Toronto Western Hospital, died in California on November 3, aged 69 years.

Correspondence.

OUR LONDON LETTER.

(From Our Regular Correspondent.)

PSYCHIATRY AT R. S. M.—IS INSANITY INCREASING?—HEALTH OF CITY WORKERS—THE INSURANCE QUESTION—ACTION AGAINST THE B. M. A.—OBITUARY.

London, November 1, 1912.

The Royal Society of Medicine has inaugurated a new section—Psychiatry—which was opened on the 22d of October, and certainly the Royal Society of Medicine is to be congratulated on having secured as the first president of its new departure Sir George H. Savage, whose long experience of mental disorders is accompanied by other qualifications for the post. He seems to have looked upon the office as somewhat of a burden, for in his opening address he said that lying on a mountain slope, last summer, he could not forget that he had a great responsibility arising from that address, and as he thought of many things, some wild imaginations took possession of him, until he reflected that great discoverers have held imagination to be all-important even in the most mechanical arts and sciences. His responsibility need not have weighed so heavily, after all; at any rate, he has discharged it so well that his address may challenge comparison with most productions of the kind. It embodies a brief survey of his subject and its prospect for the future. It teems with striking thoughts, but so closely knit together that only here and there some may be detached. He paid a tribute to some of the more earnest workers, including Hack Tuke, whose power of work was amazing, and whose Psychological Dictionary he called a mine of wealth, containing many evidences of what younger men often think they originate. Governed by our organized inquisitiveness, we call it science, and collect facts, but are not mere fact-heapers, for in the multitude of facts not knowledge, but confusion, arises. One swallow does not make a summer, but may warn us of its coming; a single case may direct our studies, but is not a base for a theory. So we must define knowledge, but definitions are only for resting on while peering into the indefinite. Death and the dead are definite. We must collect and record, but remember the truth to-day may to-morrow be only partly so. Accepting experimental psychology and psychic analysis, when the practical physician says *cui bono* we reply we must follow truth; an open mind must be cultivated.

Considering on the mountain slope Schäfer's recent address on the origin of life, Sir G. Savage said it left him a believer in something more than the mere chemical theory. All elements, however arranged, were not equivalent to any living thing. The chemist had built up wonderful compounds, called organic, but which did not live.

Another point Sir George maintained, as he has done before, that many mental disorders deserve to be called functional, in so far that they are not represented by any material change in the central nervous tissues. "Nature provides the iron, but man makes the horseshoe for service." As to heredity, he gave his opinion that in some persons there is transmitted a tendency to nervous or mental disorder, but only a certain proportion found in asylums can be proved to have had insane relatives.

The study of the nervous system as a whole was

enjoined, neurology and mental disorder no longer separated. Bodily and mental relationships were exemplified by cases of alternation, as one in Bethlem, with acute mania lasting for weeks, then suddenly becoming sane, but paraplegic, and later on the reverse change returning.

"Waves of thought," said the speaker, "roll on and leave shore lines and raised beaches." At present we seemed on a chemical wave; cells have had their turn, bacteria are having a distinguished career, but the results of both these are, after all, supposed to be chemical products. Internal secretions may be so classed, and the discoveries as to their potency seem very striking; it looks as if every organ had a two-fold relationship: one with the outer world, the other with the self. The central nervous system and its nerves had it with the outer world, but there remained consciousness. Could that result from an internal secretion? It pleased Sir G. Savage to think of it as a byproduct of nervous section, and he could not help seeing in some instances of morbid mental states evidence that such an idea was not altogether wild.

Dr. F. W. Mott read a paper on Tuesday, at the Sociological Society, with a view of showing that the popular opinion that insanity is on the increase is erroneous. Admitting that a greater number of cases are registered, he attributed the increase to the inclusion of the worst forms of imbecility, idiocy, and senile dementia in recent statistics. Further, there was a declining death rate, and fewer discharges from asylums, with the consequent accumulation of cases in the London county asylums, at a rate of 125 to 200 a year for some time past. The excessive use of alcohol and drugs tended to bring out insanity in modern civilization, and it was yet to be found out how far such causes were neutralized by segregating patients. The alarmist statements so often circulated had no foundation in fact, but to failure to study the causes that lay behind an increase in registered insanity.

A conference on the health of city workers has been held, appropriately enough, in the Guild Hall. It was promoted by the Institute of Hygiene, and opened on Monday by the Lord Mayor, who said that during his sixty years' medical practice in the city he found no reason to complain of the air provided for workers. He believed in open fireplaces, for chimneys were excellent ventilators. During his time fevers had practically disappeared from the city, as they had, in fact, from all London, with the improved drainage and water supply. Sir William Bennett, as president of the Institute, explained that it was thought that the habits of individuals working in cities might be influenced by circumstances which should be discussed. That day it was proposed to consider the personal hygiene of the business man. Dr. Olsen said business men were brain, not muscle workers, often hurried or worried, and should take but light luncheon without flesh. Two meals a day was a good system. Dr. C. Gillies said the city men who suffered were highly strung, and the rush of business was increasing. With that pick-me-ups at the chemist's were resorted to. These men could be seen going into public houses early who formerly did not. The resort to narcotics or drink was dangerous, and counsel might well go forth from this conference. Dr. F. Buzzard did not look on business men as unhealthy. Mere rush or sedentary life had less influence than heredity. As to drink, people thought whiskey the safest, and they had been told so by some doctors, and went on increasing the quantity. Every organ of the body suffered. He recommended smaller quantities of food. Exercise used nervous energy as much as brain work. It should only be taken in fresh air. Dr. J. Cahill agreed to this, and that was why golf was the best game for city and brain workers. Dr. Goodhall advised taking time over meals, without business or exciting talk, moderation in everything, and avoiding fads. The chairman, closing the discussion, said much nonsense was talked about exercise, which suited some but killed others. He took as little as possible himself. A tired man should not tire himself further. Drinking between meals he regarded as the most vicious thing in the world, but every man should be left to find out what suited him best. He credited his own good health for the last twenty-seven years to a good breakfast and light luncheon.

The second day's discussion was confined to the health of clerks and warehousemen, though it must be confessed their hygienic surroundings differed but little from those of their masters, and their personal habits were often similar. The same questions therefore arose, and the debate furnished further illustrations of differing opinions. Professor Halliburton took the chair and remarked that pure air in the streets was of little use if the offices were not properly ventilated. He warned against cranks, especially the non-breakfast advocate. A few minutes less in bed and more over the breakfast table would help the day's work. The quick lunch of America was also injurious. Dr. Leslie indulged in statistics of vital force, computed by physiologists as 3,300 foot tons for the average man; of this fully nine-tenths was used for maintaining life, leaving 330 for locomotion, exercise, thought, and action. Two-thirds of this were wanted for the fatigue incident to getting a living—a sort of bank balance, or health capital which it would be dangerous to overdraw. He would pay in two good meals daily and a light luncheon to keep up the balance. Dr. Lister said the health of clerks was no worse than that of other workers, and gave mortality figures in proof. But deficient ventilation must be condemned, as must bad habits and drink. Dr. Alex Haig was rather pessimistic, and told the conference that in thirty years' experience in hospitals in the city, or near it, he hardly met a man who could stand every physiological test of good health. Apparently he did not remember at the moment that hospitals were not just the places to look for such a rarity. He put down degeneracy of the race to improper feeding, and argued that the ills we suffer from are not diseases, but only the outcome of bad feeding. He attributed the fall of Rome to her people taking to eating meat! What about fads after that?

The question of questions with the profession just now is shall we accept the government's revised offer? If it had been the definite sum in cash which the chancellor calculates it may be, I believe there would have been no hesitation. But Mr. Lloyd George's vanity had to be soothed and his defeat concealed, so he has mixed up the sum with balances from other funds. But that has only made many ask, "Is it another trap?" The more so because this week a threat has been put forward that he will start a state service unless his new offer is accepted. Knowing he cannot do so at once, he will begin in a small way—say, a couple of cities—and he is declared to have 100 competent and efficient

men selected from the younger members of the profession, who are ready to begin. Some are laughing at the absurdity of his bluff, others are applying less complimentary words both to his proposals and himself. Meetings are being held all over the country, and there is considerable difference of opinion. On the whole, I am inclined to think an attempt at compromise may be made. The British Medical Association will come to a decision at the meeting a fortnight hence.

Last night, at the dinner of the Irish medical schools and graduates, Sir James Barr, president of the British Medical Association, said they were promised an efficient service, but what they would get was no more like it than the London fog was like sunshine. Those who agreed to serve would only be the riffraff of the profession, and would be ostracized by all others.

Dr. Esmonde, M. P., said no honest, self-respecting man could have taken the first offer, but everyone should consider very carefully whether the new terms should be accepted or rejected. It was easy for the prosperous to say stick out, but he had experienced the difficulty of finding the quarter's rent, and he felt in the interest of the less prosperous some effort for settlement should be made.

The medical members of the Advisory Committee have issued a statement this morning on the intention of the government, which they regard as certain, to try for three years a state service unless the profession accept, and in view of this proposal, without presuming to offer advice, they ask whether it would be wise to refuse to work the act? They evidently think not. Some others seem to think that as the government promise the opportunity of revising after a time, a trial might be made.

A nine days' trial of an action brought against the British Medical Society for libel by the vendor of "sacco" and "lungsava" advertised as a certain cure for consumption ended yesterday in disagreement of the jury, who were therefore discharged. The alleged libel was contained in "secret remedies" published by the association after appearing in the journal. The vendor of the stuff thought the article called him a quack and represented his advertising as fraud. The defence took the line the lawyers so often do, that the words complained of did not bear the meaning attributed to them and related to the system—not the man.

I think the association should have insisted on a bolder plan—declared that a trader in an alleged remedy who had no qualification was a quack and that prescribing for sick people by an ignorant person boasting of being a specialist for chest diseases was a fraud on the sick. It is illegal to practise medicine without a qualification, but illegality is laughed at by the advertising quacks—they know the government will not interfere.

Dr. F. M. Pope, Senior Physician to the Leicester Royal Infirmary, died on October 26 at the age of 56. He qualified as M.R.C.S., 1879, took the M.D. of Cambridge in 1901, and was elected F.R.C.P. 1902. He held various offices in the county including the consultant physician to the asylum, and was regarded as the leading physician in Leicester.

The Perspiration of Tuberculous Patients and Its Infectious Character.—M. Piéry states that the perspiration of a tuberculous individual contains tubercle bacilli. This fact he has demonstrated in 30 per cent. of his cases, including various forms of surgical tuberculosis —*Gazette des Hopitaux.*

Progress of Medical Science.

Boston Medical and Surgical Journal.

November 7, 1912.

1. The Clinical Study of Respiration. D. L. Edsall.
2. Pyelonephritis of Pregnancy and the Puerperium. J. W. O'Connor.
3. An Adjustable Knee Support. H. W. Marshall.

1. The Clinical Study of Respiration.—D. L. Edsall states that it is necessary to determine as far as possible, in any pathological disturbance of respiration, whether the disturbance is associated with exhaustion of the respiratory center, or whether it is, on the contrary, due to overstimulation of the center. The treatment would, in the two cases, be the opposite. It may reasonably be suspected that we have in many instances been making an error entirely similar to that which was made for years in treating the circulatory failure in acute infectious diseases with the mistaken idea that it was primarily due to excess of blood pressure, whereas it is usually due chiefly to quite the contrary condition. In respiratory distress one may equally well have been dealing at times with a condition directly the opposite of what we thought we have been treating, and may very often have been treating an overexcited respiratory center by still further exciting it. Likewise it appears that the effects of the respiratory stimulants need, in purely experimental or clinical studies, to be investigated much more accurately than has been done to determine their effect on the amplitude of respiration, as compared with the rate, and to determine their actual influence not merely upon tidal ventilation but, much more important, upon the amount of air that passes in and out of the alveoli. In most of the work that has been done upon the respiratory stimulants their influence upon the actual respiratory function may perhaps have been judged quite as inaccurately as one often judges clinically of the effects of different forms of respiration. Even tracings of the respiration, unless made quantitatively, can give a reliable idea of the effect of a drug upon ventilation only when the effect is so very decided that there is no question of mistake. It is quite possible that one may find that some drugs that are called respiratory stimulants actually lower the efficiency of the function of respiration in some circumstances of disease and even in normal conditions, and the contrary may be true of some so-called respiratory depressants.

2. Pyelonephritis in Pregnancy and the Puerperium.—J. W. O'Connor concludes from his study of this subject that infection of the pelvis of the kidney invariably involves the parenchyma. Owing to its anatomical relations the right kidney is the more vulnerable. The disease is much more frequent than supposed; the author estimates that it occurs once in every 3000 cases. Malnutrition, constipation, and the tonicity of the abdominal muscles are predisposing factors; a tendency to renal abnormalities on the right side, dextrotorsion of the uterus and a predominance of positions in the right oblique diameter favor the infection of the right kidney. Infection by the colon bacillus is the most common type, direct transmission through the intestinal walls being the probable mode of entrance. The pathological picture shows the pelvis and ureter dilated with pus and miliary abscesses in and beneath the cortex. The cardinal symptoms are smarting micturition, chills, fever, nausea and vomiting, pain in the loin and elevation of pulse. The urine is turbid, purulent and albuminous. Tenderness in the region of the kidney is always present. Enlargement of the organ can be demonstrated in about one-fifth of the cases. Abortion and surgical kidney are the most common complications. The diagnosis can generally be made on physical signs and urinary analysis, the differentiation from appendicitis presenting the greatest difficulty. The prognosis is usually good for the mother and less

favorable for the child. Treatment by rest, sedation, catharsis and urinary antisepsis has met with success. The use of vaccines and pelvic lavage, if of any real value at all, entails dangerous delays and, being extremely technical, is beyond the scope of the rank and file of the profession. Early operation in cases that assume a surgical aspect is to be strongly recommended.

New York Medical Journal.

November 9, 1912.

1. Gallstones. P. Syms.
2. Why Is Direct Transfusion of Blood Often a Failure? A. L. Soresi.
3. The Temperature After Perineal Section Under Spinal Anesthesia. E. L. Keyes, Jr., and D. W. Mackenzie, M.D.
4. The Kwathmey-Woolsey Nitrous Oxide-Oxygen Apparatus. J. T. Gwathmey and W. C. Woolsey.
5. Some Considerations of General Anestbesia. C. R. Hervey.
6. Operative Treatment for Cancer of the Breast. J. S. Brown.
7. The Cure of Prolapse of the Uterus and Bladder by Plastic Operation. L. G. Baldwin.
8. Lane's Kink of the Ileum. C. F. Kivlin.
9. Nasal Deformity Corrected by Autoimplantation of the Septal Cartilage. O. Glogau.
10. Cause, Prevention and Care of Weak and Flat Feet. W. W. Stevens.
11. Mortality of Lobar Pneumonia in Alcoholic Subjects. C. K. Stillman.
12. A Pustular Syphiloderm in a Negress Simulating Variola. J. L. Kirby-Smith.

1. **Gallstones.**—By P. Syms. (See MEDICAL RECORD, November 9, page 870.)

2. **Direct Transfusion of Blood.**—A. L. Soresi states that transfusion should not be resorted to only when the patient is *in extremis;* surgeons should train themselves in conservative surgery of the blood-vessels by means of experiments on animals before attempting transfusion in human beings; the vein-to-vein method is to be preferred, and the use of a vein of the neck of the recipient is the only physiologically correct method to be adopted, except when not suitable during surgical operations. In the treatment of hemorrhages there must be a distinction between hemorrhages which can be completely checked and hemorrhagic diseases; in the former saline solution should be administered immediately as a first resort and during or before transfusion; in the latter, transfusion should be resorted to before other liquids are introduced into the system, because the blood is used as a hemostatic and should not be diluted; in the greatest number of hemorrhages saline solution is sufficient to save the patient and transfusion should be resorted to only when the surgeon thinks that the hemopoietic organs of the patient are unable to supply, in a reasonable time, the morphological elements indispensable to life. In diseases in which the blood is loaded with poisonous products, transfusion is very useful, provided the central nervous system is not too seriously injured and blood is let out during or before transfusion is resorted to. Transfusion is a great help to patients who are considered bad surgical risks, and must be performed during the operation. A vein for both donor and recipient should be used, anastomosing the distal part of the donor's vein with the proximal part of the external jugular of the recipient. In this way the radial artery is saved and it is easier to find a donor. Obviously there may be cases in which it is advisable to use the radial artery of the donor, and transfusion will be very satisfactory; but, when possible, the vein-to-vein method should be used, the external jugular of the recipient being always preferable.

3. **Perineal Section Under Spinal Anesthesia.**—E. L. Keyes and D. W. MacKenzie call attention to the fact that the marked immediate rise of temperature so characteristic of perineal section done under general anesthesia is absent when the perineal section is done under spinal ansthesia. The authors believe that this single fact renders spinal anesthesia immeasurably superior to general anesthesia for operations upon the male perineum.

4. **The Gwathmey-Woolsey Nitrous Oxygen Apparatus.**—J. T. Gwathmey and W. C. Woolsey summarize the advantages of the Gwathmey-Woolsey apparatus as follows: (1) Absolute and perfect control of the gases flowing at a low pressure is effected. (2) The gases are easily warmed whenever the patient's condition demands it. (3) Small amounts of ether can be added whenever necessary. (4) The apparatus is especially adaptable for endotracheal anesthesia solving the problem of the administration of nitrous oxide and oxygen by this method. (5) An even, automatic flow of gases is assured, thus opening up a new field especially for using the analgesic properties of the gases. The apparatus is of small size and portable.

6. **Operative Treatment of Mammary Cancer.**—J. S. Brown concludes that any breast operation to be radical must sacrifice the pectorales, major and minor, but in some cases the upper clavicular portion of the pectoralis major may be left, and in so doing one insures to the patient a better arm function. In attempting a radical procedure all connecting lymphatic chains should be removed, as has been shown by many observers. This may require wide work, as the lymphatics drain the breast in all directions, even to perforating between the intercostal spaces. No one method of incision is applicable in all cases. It is always necessary to remove large areas of skin, and grafting must be resorted to in a minority of cases. All late cases that are on the borderline between operable and inoperable cases should be *x*-rayed to determine the possibility of metastasis in the long bones. Especially is this true if the patients suffer any neuralgic pains in certain joints.

11. **Mortality of Pneumonia in Alcoholics.**—C. K. Stillman has observed that chronic alcoholism does not of itself alter the mortality figures for lobar pneumonia unless the alcoholism is present to an extreme degree. Chronic alcoholism sufficient to produce delirium tremens may oftentimes exist without affecting a patient's chances of recovery. In fact, in the author's series of free drinkers, there was hardly an individual who had not more or less of the characteristic cerebral excitation, yet this complication alone did not seem to influence the death rate. It thus appears that signs of fairly well marked chronic alcoholism do not in themselves justify a gloomy prognosis. In any given case an attempt should first be made to determine whether or not the patient is a confirmed drunkard. In all others the alcoholic factor need not be too seriously regarded. The generally quoted mortality figures for pneumonia in alcoholics (forty to fifty per cent.) are accurate in the sense that they are drawn from the general run of cases included under the heading of chronic alcoholism. The figures are, however, misleading, since they do not recognize the very important distinction to which the author has directed attention.

Journal of the American Medical Association.

November 9, 1912.

1. The Hospital as a Factor of Interest to the Medical Profession. W. B. Russ.
2. The Hospital in Relation to Medical Science. W. H. Welch.
3. A Clinical View of the Special Diet. H. D. Arnold.
4. The Hospital Versus the Home in the Care of the Sick. P. E. Truesdale.
5. Relation of the Physician to the Hospital. J. B. Murphy.
6. The Proper Division of the Services of the Hospital. H. M. Hurd.
7. A Few Problems of Hospital Organization. Frederic A. Washburn and L. H. Burlingham.
8. The Medical Superintendent. H. B. Howard.
9. Individual Prophylaxis in Children's Hospitals. I. A. Abt.
10. Out-Patient Work the Most Important and Most Neglected Part of Medical Service. R. C. Sabot.
11. The Efficiency of Out-Patient Work. M. M. Davis.
12. The Relations of the Hospital to Corporations Interested in Patients. S. C. Plummer.
13. The Legal Aspects of the Relations of Hospitals to Corporations Interested in Patients. M. L. Bell.
14. The Relations of the Civil Hospital to the Military Establishment in Time of Peace; In Time of War. C. Richard.
15. Hospitals and the Health Problem: With Special Reference to the Necessities of Rural America. E. E. Munger.
16. A Quick Method for Accurately Differentiating the Species of Hookworm of Man. E. R. Stitt.

17. Intestinal Parasites in the South. H. B. Wood.
18. Thyroid Extract in Nephritis: A Preliminary Statement of a New and Effective Method of Treatment. J. F. Percy.
19. Muscle Group Isolation in the Treatment of Spasticities and Athetoses. L. J. Pollock and E. B. Jewell.
20. Suggestions for Operation and After-Treatment of Empyema. C. M. Remsen.
21. The Rôle of Milk in the Causation of the Chicago Epidemic of Sore Throat. J. A. Capps.

2. The Hospital in Relation to Medical Science.—W. H. Welsh notes that from the viewpoint of the various fields of its activity hospital work may be classified as humanitarian, scientific, and educational. The care of the sick and injured is primarily humanitarian, but it is not always easy to convince trustees that the others are also essential functions. The author points out that the furtherance of scientific medicine is also essential to the public welfare. Medicine of to-day is very different from that of former years—it has become more specialized and the hospital has become the laboratory of the clinician, who with this aid only can succeed in solving the great questions in medicine that are constantly appearing. The use of the hospital for educational purposes is the great problem of to-day. The theoretical subjects are outstripping the practical ones and the important thing is to bring the clinical subjects up to the level of the theoretical subjects in medical instruction. The most urgent need is to secure teaching hospitals, and this can be done only when the hospitals belong to the universities. It is for the interest of the patient and the public that such relation should exist.

3. The Special Diet.—H. D. Arnold believes that the average hospital of to-day is inadequately equipped to feed patients properly, according to dietetic principles, and the chief fault lies with the medical staff. He justifies this sweeping statement by saying that the older men commonly direct the action of the staff and their conservatism has hindered progress. There are exceptions to the rule, but he believes it applies to the average hospital. The feeding of patients is an important part of the treatment and constitutes the whole of the treatment in a considerable numer of cases. There should be a skilled dietician and an adequate diet kitchen in every hospital. It is now possible to apply the scientific knowledge of dietetics in practice and every progressive hospital should place its dietary arrangements on an up-to-date basis. Such measures will not only benefit patients but will also be economically profitable.

5. The Physician and the Hospital.—J. B. Murphy calls attention to the fact that the clinical history in many cases is more important in enabling the physician to arrive at a diagnosis than the physical examination or laboratory findings, and yet the newest interne and least-experienced man on the residence staff writes the history. The most incompetent man is given the most important thing to do. To him is assigned the dressing in septic cases and the writing of histories. There is a greater percentage of failures in diagnosis from badly written histories than from anything else; therefore the histories should be written by the senior member of the house staff. The man who is to become junior or senior assistant in the departments of medicine or surgery should remain four or five years, as this length of training is necessary to round out his apprenticeship and to prepare him for his subsequent teaching and surgical responsibilities. The general asepsis and cleanliness of the entire hospital must be looked after as well as that of the operating department. The next important advance in hospital reform will be in the administration of the serum and vaccine therapy. Pathology must be pushed to the top notch; the pathologist is going to play the great rôle in the new therapeutic work.

8. The Medical Superintendent.—H. B. Howard discusses the qualifications needed for the hospital superintendent and notices the more or less prevalent notion that executive ability rather than medical knowledge and skill are requisite. He does not think that a preliminary medical training of the superintendent is wasted and points out many ways in which it is useful and even indispensable to the executive head of a hospital, who must also deputize a large part at least of the actual medical treatment to his subordinates. The medical superintendents of insane hospitals are commonly supposed to be at the head of the medical work and to be expert alienists as well as at the head of the business management. If the staff is to give its best efforts to the treatment of patients it should be relieved from the business details, but it should not have to be overridden in medical matters by a lay superintendent. Medical knowledge is essential in keeping the hygiene of the hospital up to the mark. Every hospital is supposed to exist for its patients and a superintendent who knows most about the medical and surgical work has the clearest view of the needs of the institution and the highest incentive therefore to look out for its efficiency as well as for its economy.

10. Out-Patient Work.—R. C. Cabot makes a plea for the performance of better work in the out-patient departments of hospitals. In certain respects the dispensary fills a more important rôle than the rest of the hospital. The dispensary hits the problem of disease at three most vital points where the wards cannot: First. It roots out the foci of disease in families or neighborhoods, follows home the clues presented in the person of the dispensary patient, and so prevents disease. Second. It checks disease in its incipiency. Third. It deals with chronic cases and keeps the patients from relapsing into a discouraged and vegetative existence. Yet in spite of these three distinguishing marks of superiority, and in spite of the fact that almost all hospitals treat five times as many persons in their dispensaries as in their wards, one still permits the tradition of superficial, slovenly work in dispensaries to go on. The great dispensary abuse—not the abuse of the dispensaries by the patient, but the abuse of the patient by the dispensary—is still in evidence. We tolerate snap diagnoses, treatments that will not bear scrutiny, and records that are a farce. We are content that hospitals should spend at least twenty times as much for the care of a ward patient as they do for the care of a dispensary patient. Some clinics are efficient, especially those in which the treatment can be administered and finished at once. It is the medical, neurological, pediatric, and skin clinics that are relatively slipshod. Hurry, crowding, and a scarcity of assistants prevent creditable work in many instances. There should be in each clinic a fixed ratio of space, staff, and outfit to the number of patients received, as there is in a ward. There is no sense in allowing dispensary work to be a hurried and desperate struggle against time and numbers. It is possible to do as accurate scientific work in diagnosis and treatment at a dispensary as at a private office. This means honest, conscientious, efficient, well-organized, well-supervised work, with the interest of the patient rather than that of the physician or the student always paramount.

19. Muscle-Group Isolation in Treatment of Spasticities.—L. J. Pollock and E. B. Jewell discuss the value of the method of muscle-group isolation introduced by Schwab and Allison for putting out of action the muscles at fault in spastic and athetotic conditions. The isolation is accomplished by the injection of 80 per cent. alcohol into the nerves supplying the muscles concerned, causing a paralysis which is later treated by physiological exercises and educational methods. According to Schwab and Allison there is a gradual return of function without a recurrence of the spasm. Pollock and Jewell, however, combat this claim, and publish six cases supporting their contention. They say: "It is extremely doubtful if we can be assured of return of motor function in every case

subjected to this treatment, and it is preferable to suffer with athetosis and possess function than to be relieved of the athetosis and have function disappear. There is no certainty that the spasticity will not recur after some time, and from our cases it would seem that the spasticity will probably reappear. In cases in which shortening of the contracted muscles has occurred, the procedure is valueless unless supplemented by other surgical measure, as tenotomy, etc. In our opinion there is but one indication for the procedure in the treatment of spasticity, namely, a cross-legged deformity due to spasticity of the adductor groups of muscles occurring in a child, who on account of the deformity is unable to learn to walk. It may be possible in such instances to educate the child to walk during the time that the deformity remains corrected, and in the event of the return of the spasticity, the ability to walk, although hampered by the resulting deformity, may remain. We would particularly warn against the attack by alcohol on any nerve possessing important motor functions, as the ulnar, median, etc."

The Lancet.

November 2, 1912.

1. Eugenics: "Unto the Third and Fourth Generation." J. G. Adami.
2. The Importance of Examining the Urine Bacteriologically. W. H. White.
3. The Histology of Experimental Rheumatism. C. Coombs.
4. An Analysis of Injuries to the Bones at the Wrist, Based on the Radiograph Examination of 214 Cases. R. Knox and R. W. A. Salmond.
5. Auricular Fibrillation. C. E. Lea.
6. A Case of Auricular Fibrillation and Pregnancy. C. H. Miller.

1. Eugenics.—By J. G. Adami. (See MEDICAL RECORD, September 21, 1912, page 535.)

2. Bacteriological Examination of the Urine.—W. Hall White concludes that the presence of microorganisms in the urine is of clinical importance, and considers the conditions in which it is of importance. These conditions fall into two groups—those in which there is nothing to direct attention to the urinary tract and those in which there is. In other words, the bacteriological examination of the urine may be of value in two ways: either it may reveal the microorganism which is causing a general infection and which we are able to detect because the microorganism is being excreted in the urine, or it may reveal the microorganism causing local disease of the urinary tract. In various forms of chronic arthritis examination of the urine may show a causative organism, such as the pneumococcus, streptococcus, or colon bacillus. In many of these cases the use of an autogenous vaccine may be of curative value. Staphylococci may appear in the urine in cases of general staphylococcus infection. The same is true of streptococci in cases of streptococcus infection. Colon bacillus infection of the urinary tract may simulate appendicitis; it may cause hematuria; it may produce a chronic illness simulating tuberculosis; and it may give rise to symptoms resembling those of renal calculus. Examination of the urine in cases of cystitis complicating various nervous diseases may reveal the colon bacillus, the therapeutic use of which in the form of autogenous vaccines will usually control the bladder condition. Colon bacilluria which occurs so commonly during pregnancy may be the result of cystitis, pyelitis, or pyelonephritis. No matter how severe the case, medical treatment suffices to effect a cure.

3. Histology of Experimental Rheumatism.—C. Coombs, R. Miller, and E. H. Kettle state that the (1) inoculation of rabbits with streptococci recovered from cases of rheumatic infection has provoked arthritis, carditis, and other lesions. (2) Histological examination of these lesions proves that they are identical with similar changes provoked in rabbits by inoculation with a similar microorganism in the hands of other investigators; and that these lesions include all the phenomena, even the submiliary nodule, found in the rheumatic lesions of man. (3) Such differences as exist between the experimental rheumatic infection and the human variety are to be accounted for by a difference in the mode of entry of the infective agent in the two conditions.

4. Injuries to the Wrist.—R. Knox and R. W. A. Salmond, from an analysis of 214 cases of injuries to the bones at the wrist conclude that the most common injury at the wrist in cases in which the epiphyses have joined their shafts is a transverse fracture one-half inch above the lower end of the radial bone, the lower fragment being displaced backward and with or without a fracture of the styloid process of the ulna, while in cases in which the epiphyses are not yet united the commonest injury is a transverse fracture about one inch above the lower ends of both forearm bones and with both lower fragments displaced backwards.

British Medical Journal.

November 2, 1912.

1. High Blood Pressure: Its Associations, Advantages and Disadvantages. Sir William Osler.
2. The Calculation of Drug Dosage for Children. With Description of a New and Simple Method. W. J. Dilling.
3. Successful Removal of a Tumor in the Adrenal Gland. H. T. Mursell.
4. Some Experiments with Ionic Medication. N. S. Finzi.
5. A Case of Uremia Treated by Morphine. A. H. Carter.
6. Two Cases of Peptic Ulcer of the Esophagus. C. G. Watson.

1. High Blood Pressure.—Sir William Osler propounds the question: What are the conditions in which we see permanent high pressure, and what are its advantages and disadvantages? For practical purposes one may consider three groups of cases: Simple high tension, hyperpiesis, without signs of arterial or renal disease; arteriosclerosis, with the associated high tension, and renal and heart changes; and chronic nephritis, with secondary high pressure, arteriosclerosis, and heart changes. Hyperpiesis signifies simple high pressure without sings of cardiovascular disease. We have learned to recognize an average pressure, as taken with ordinary instruments, and the figures given are usually accepted. There are, of course, great variations, usually temporary, but now and again we meet with individuals whose pressure is permanently high—above 180—without, so far as can be ascertained, arterial, cardiac, or renal disease. Cannon and others have shown that in emotional states there is an increase in the adrenal flow, and this is a factor which has to be considered in the high pressure of modern life. This high pressure is not itself the disease, but a compensatory, salutary state, if not for the man, at any rate for his circulation. That this is so may be proved by trying to reduce it below a certain point. One may, for a time, succeed in doing this, but the pressure goes up again, and the man only feels comfortable when he is allowed to live at a certain high level. The disadvantages of high blood pressure are: (1) Transient cerebral attacks such as aphasia, headache, vertigo, flushings, or an anginal attack, or transient bouts of dyspnea with palpitations. But more serious still is (2) the certainty that sooner or later sclerosis of the arteries will follow. The author refers to two other causes, one of which has a note of personal appeal. There is an old motto, "It is the pace that kills," and nothing is more certain than that the pace of modern life kills many prematurely through the complications of arteriosclerosis. As a rule men under 60 years of age with primary arteriosclerosis have high blood pressure, indeed the highest known records are in this condition. In this group of cases it is well to recognize that the extra pressure is a necessity—as purely a mechanical affair as in any great irrigation system with old encrusted mains and weedy channels. Yet the victims are often robust, energetic men of great vitality. One should be disabused of the idea, if possible, that the high pressure is the primary feature, and particularly the feature to treat. The

two essential factors in maintaining uniformity in a system of land irrigation are keeping the terminal channels free between the rows of cane, and maintaining the drainage. Obstruction in the fields can be overcome by increasing the pressure, to a certain point, but it is cheaper and safer to clear out the weeds. The difficulty is to keep the human irrigation plant free from weeds, the sud that chokes the capillary bed, through which it takes a greater force to drive the fluids. We too often tinker at the pump and the mains, instead of looking for the real seat of trouble in the fields.

2. **Drug Dosage for Children.**—W. J. Dilling concludes that (1) of existing formulæ for the calculation of doses in children from imperial measures, those of Young and Gabius are of little value after the tenth year. Cowling's formula is the best of the older methods. (2) Sir Lauder Brunton's formula for calculating dosage with metric weights gives figures which are somewhat low at all ages and for both sexes; the calculation is also a little elaborate, and is not readily applicable to the imperial system. (3) The method suggested by the author for the metric system $\frac{\text{age} \times 5}{100}$, or for the imperial system $\frac{\text{age}}{20}$, results in doses which correspond closely with those demanded by the average weights of non-adult individuals of both sexes at different ages; the calculation is simple, and the method can be employed for the metric and also for the imperial weight systems.

4. **Ionic Medication.**—N. S. Finzi has found that it is possible to introduce the ions of some substances directly into a joint, even into the cartilages; at any rate of a compartively superficial joint like the knee. Very few ions driven in at the cathode, that is to say, acid radicles, can be traced in this way, but it is possible in various ways to trace certain of the basic radicles driven in at the anode. The penetration of different ions varies enormously, and it is possible to tell from the movements of the needle of the milliammeter whether a drug is entering the tissues freely or not. In using two ions which penetrated the tissues freely, it was found that if the handle of the shunt resistance was moved to a certain point and left there the milliamperage gradually increased, which means that the resistance of the skin had diminished so that the ions were entering in greater number. With ions which precipitated in the epidermis the milliamperage actually decreased after the first few moments, showing an increased skin resistance and a lessened number of ions entering; to maintain the milliamperage at all, the handle of the shunt resistance had to be continually moved in order to raise the voltage. In the case of ions subsequently proved to be deposited in the deeper layers of the skin, an intermediate effect was obtained, the current rising first and falling afterward.

6. **Peptic Ulcer of the Esophagus.**—C. G. Watson reports two cases of this condition which is a rare one. The ulcer in the first case perforated into the left pleura; in the second case no perforation occurred. In the first case a diagnosis of perforated gastric ulcer was made, and in the second a diagnosis of gastric ulcer. In both cases acute abdominal symptoms occurred; laparotomy was performed, and nothing abnormal was discovered. Both cases ended fatally.

Münchener medizinische Wochenschrift.

October 29, 1912.

Pure Culture of the Microbe of Granuloma Venereum.—Martini makes a hasty preliminary announcement of this discovery. He has obtained in pure culture a diplococcus and believes it to be the essential cause of the disease because found in tissue sections, on ulcerated surfaces and deep beneath the latter. Germs from these various localities all stain the same, cultivate the same, and behave in the tissues in an analogous fashion, their tendency being to penetrate inwardly and not to flourish on the surface. Siebert described the organisms in parts as far back as 1907, in specimens brought from New Guinea, and Flu saw them in specimens from Paramaribo in 1911.

Occurrence of Diphtheria Bacilli in the Lungs.—Reye takes up this subject in monographic fashion. Recently accounts have been published of the presence of this bacillus in the blood and cerebrospinal fluid. In the blood it is said to occur in less than 5 per cent. of cases. On the other hand, it has recently been determined that the bacillus gets into the cerebrospinal fluid in at least one-half of all cases. The author has, therefore, in view of these finds, investigated the lungs from the same viewpoint in all autopsies on diphtheria subects at the Hamburg-Eppendorf Hospital. Thus far he has studied from this point of view sixty-seven cadavers of which number forty-three patients died during the period of disease and the rest after the disease proper had run its course. In this combined material diphtheria bacilli were found in the lungs in fifty-six subjects (85 per cent.). In all but six cases of the positive finds other bacteria were present, chiefly erysipelatous streptococci. In the negative cases the microbic finds seem to have been insignificant. The association of the Klebs-Loeffler and Fehleisen bacteria in so many cases (twenty-seven in all) was to say the least striking. The symbriosis of these germs has been remarked before, but seems at present devoid of clinical significance. After all pseudomembrane has vanished we have to contend against the presence of diphtheria bacilli in the lungs. We do not know to what degree these are inimical to the welfare of the subject nor do we know how the lungs, in any event, are to be sterilized.

Seven Cases of Psychoses Cured by Gynecological Treatment.—Orrenau, who appears to be a disciple of Bossi explains his recovered cases by quoting the latter author: there are nervous and psychic affections in women which are conditioned by genital anomalies and affections and which may be cured by restoring the normal secretory activities. Hence all females presenting psychoses should be examined and if necessary treated gyneologically. Psychiatric clinics should therefore have a gynecologic ward and a chief of clinic for the same. To cite one of the seven cases: Midwife, age 40, of sound stock, and had been active professionally in author's clinic; menstruated at 18, scanty and painful; married at 28; husband died ten years later, paretic; woman married a second time to a younger man, was sexually frigid and had been sterile throughout. For 13 years past showed a variety of functional disturbances, including melancholia. Examination showed retrodeviation and pyometra. There had evidently been a long series of disorders dating from congenital antiflexion and dysmenorrhea. The psychic state was becoming aggravated. After a protracted course of gynecological treatment, including cautery and plastic work with use of pessaries the local and psychic troubles appeared to be fully cured. Patient now has normal menses.

Bacteriology of Peritonitis.—M. Fishbein states that peritonitis would seem to be most commonly associated bacteriologically with a combination of the *Bacillus coli* and other organisms, usually staphylococci and streptococci. The origin clinically is usually endogenous, the affections of the appendix being of major importance, the female organs of generation being next in importance. Exogenous peritonitis is becoming exceedingly rare with the improvement of aseptic technique in the handling of wounds and in operative methods.—*American Journal of the Medical Sciences.*

Insurance Medicine.

SUGGESTIONS TO MEDICAL EXAMINERS

BY THE INSURANCE EDITOR.

COMPLETION OF THE EXAMINER'S REPORT.

THE RECOMMENDATION.—The report having been completed to this point, the examiner is called upon to recommend the acceptance or rejection of the risk. The form of recommendation varies according to the requirements of different companies, and may be divided into the following classes:

1. In most blanks, a definite "yes" or "no" is required, and any deviation from this simple monosyllabic affirmative or negative answer will usually complicate the matter.

The recommendation should be based largely upon the physical condition of the applicant, there being very few exceptions to this rule.

The question of family history should always be left to the consideration of the home office officials who give decisions on hundreds of family records daily and are therefore more familiar with the subject. When an examiner qualifies the recommendation for acceptance of the risk by some such phrase as "barring the family history," he makes an unnecessary suggestion, as the family history is supposed to be already presented in full detail in the application for the study of the home office authorities. It will complicate the situation still more if the examiner recommends rejection on account of the family history. It would seem a simple matter for an approving officer at the company's headquarters to regard such an answer as final, ignoring the negative answer and accepting the risk when he is satisfied with the family history, disagreeing with the examiner as to the bearing of this part of the report on the insurability of the applicant. This is not a safe practice, however, as the writer can testify from the experience of his own company in several cases in which the examiners advised rejection of the risks on the ground of unfavorable family histories. As the family histories recorded were satisfactory, it was assumed that the examiners had overestimated the value of, what apparently seemed to them, adverse features, and issuance of the policies was approved in each of these cases. Death claims were presented a year or so later and it was then learned that each of the examiners had been in possession of the knowledge of some serious impairment which they would not allow to appear in writing for politic reasons and supposed that they were discharging their obligations to their company by basing their rejections on grounds of a trivial nature. If they had supplemented their report by sending the missing information to the home office, according to the suggestions in a previous section on "Confidential Letters," they would have fulfilled their duty and prevented the unfair losses to the company. There was no redress in these cases as it was decided by the company that the rejection of the examiners, even though the real cause for their action did not appear in the reports, should not have been overruled without further investigation. No application, then, should be finally approved at a home office until a recommendation of rejection based on apparently insufficient reasons has been fully explained by subsequent correspondence with the examiner.

The personal history, also, should be left for the consideration of the home office after being fully recorded in the report. Occasionally there will be some remaining effect of a recent or even remote illness, in which case the examiner may recommend rejection as, in such a case, he is justified in his refusal on account of the present physical condition.

The habits of the applicant may usually be left to the judgment of the medical directors, although they should be reported very carefully in all cases. If, however, the examiner is aware from his personal observation that the applicant is a bad risk on account of frequent intoxication or the use of drugs, he will be justified in recommending rejection.

The term "fair risk" or "average risk" should never be used instead of the concise "yes" or "no" in recommendations in this class. Companies do not limit their business to writing policies for athletes and those who enjoy the perfection of good health; they are quite ready to accept good average risks, knowing that the latter will live out their expectancy as well as the former. When, however, the examiner qualifies his endorsement by the elastic and vague terms "fair" and "average," it is suspected that, in his opinion, the risk is not quite up to the standard and this doubt has to be cleared up through correspondence. The examiner has the advantage of inspecting the applicant personally and must make up his mind definitely whether or not the physical examination justifies the insuring of the risk.

2. In a few companies the examiners are asked to recommend action according to whether in their opinion the risks are "good," "fair," or "poor." When this classification is required, the examiners are usually expected to rate the risks according to physique, general appearance and general record of family vitality. The drawback to this form of recommendation is that there is apt to be a discrepancy between the estimates of different examiners.

3. The examiners are not required to make any recommendation by some companies. This plan has certain advantages, especially to companies which issue rated up policies to sub-standard risks. These companies will probably write some form of policy even though it will differ from the one applied for, and it would, therefore, be manifestly inexpedient to ask the examiner to advise rejection in the case of impaired physical conditions. In this class, the examiners are expected to set forth fully the facts in the personal and family records and to state the results of the physical examination, so that the medical department at the home office may draw its own conclusions.

Investment Insurance.—George W. Hopkins opposes the idea of "investment insurance." He holds that (1) cash surrender values are not "investment values"; (2) cash loan values are absurd in principle and unjust in practice; (3) investment policies involve the risk of loss of large amounts of money paid for investment, not insurance, purposes, if the policyholder dies before his policy matures in ten, fifteen, or twenty years; (4) because investment insurance is full of discriminations and the discriminations nearly always favor the policy which contains the least of investment; (5) because "dividends" are really not dividends at all, and often the companies find it necessary to use the "dividend" funds for expenses.—*Medical Review of Reviews*, October, 1912.

Book Reviews.

Elementary Bacteriology and Protozoology: The Microbiological Causes of the Infectious Diseases. By Herbert Fox, M.D. Director of the William Pepper Laboratory of Clinical Medicine in the University of Pennsylvania, Pathologist to the Zoological Society of Philadelphia, etc. Price $1.75 net. Philadelphia and New York: Lea & Febiger, 1912.

Designed as an elementary text book for nurses and beginners, this small volume has been written with a most commendable restraint. The author has eliminated all unnecessary technicalities and yet succeeds in giving the reader a very clear view of the nature of microorganisms. While it would perhaps be unsuited for the beginner who intends to follow the subject persistently it seems admirably adapted for the instruction of nurses or the laity. The chapter on the subject of immunity is particularly clear and easily understood. In the discussion of the individual organisms special attention is paid to the mode of infection and to the routes by which the infectious agents leave the body, together with the precautions necessary to prevent the spread of the disease. The volume is attractively gotten up and the text is free from typographical errors. It can be highly recommended to training schools for nurses.

Principles of Microbiology. A Treatise on Bacteria, Fungi and Protozoa Pathogenic for Domesticated Animals. By Veranus Alva Moore, B.S., M.D., V.M.D., Professor of Comparative Pathology, Bacteriology, and Meat Inspection, New York State Veterinary College at Cornell University, and Director of the College. Price $3.50 net. Ithaca: Carpenter & Company, 1912.

This volume is described as an outgrowth of a lecture course accompanying laboratory work in bacteriology and protozoology and has been prepared as a text book for veterinary students beginning the study of microbiology. Dr. Moore occupies a high place among American bacteriologists and he has evidently put his best thought into this work. Although somewhat elementary in character, the most important facts are given and the essential principles explained. The principal laboratory methods are described and the relation of the several species of microorganisms to animal disease is rather fully discussed. The book is attractively published and should make a valuable addition to the veterinarian's library.

Landmarks and Surface Markings of the Human Body. By L. Bathe Rawling, M.B., B.C. (Cant.), F.R.C.S. (Eng.); Surgeon with Charge of Out-Patients, Demonstrator of Practical and Operative Surgery, Late Senior Demonstrator of Anatomy at St. Bartholomew's Hospital, Late Assistant Surgeon to the German Hospital, Dalston; Late Hunterian Professor, Royal College of Surgeons, England, etc. With thirty-one illustrations. Fifth Edition. Price $2.00 net. New York: Paul B. Hoeber, 1912.

The excellence of this volume lies largely in the beauty and clearness of the illustrations. The colored plates illustrating the topography of the great body cavities and the photogravures showing the surface markings of the different regions of the body cannot possibly be improved upon. The text is brief and well arranged for didactic purposes, the black-face side references to the illustrations being a happy feature. This volume may be recommended to the student, general practitioner, and surgeon as a safe guide, the popularity of which is amply attested by the five editions through which it has already run.

Burdett's Hospitals and Charities, 1912. Being the Year Book of Philanthropy and the Hospital Annual: Containing a Review of the Position and Requirements, and Chapters on the Management, Revenue, and Cost of the Charities. An exhaustive record of hospital work for the year. It will also be the most useful and reliable guide to British, American, and Colonial hospitals and asylums, medical schools and colleges, nursing and convalescent institutions, consumption sanatoria, religious and benevolent institutions, and dispensaries. By Sir Henry Burdett, K.C.B., K.C.V.O. Author of "Hospitals and Asylums of the World"; "Cottage Hospitals: General, Fever, and Convalescent"; "Burdett's Official Nursing Directory"; "The Nursing Profession"; "Helps in Sickness and to Health"; "The Relative Mortality of Large and Small Hospitals," and editor of "The Hospital." Price 10/6. London: The Scientific Press, Limited.

The object of the publication of this now well-known volume is well described on the title page, and on the whole it fulfills what it claims there to fulfill. In a special chapter the author refers to the British National Insurance Act and the influence it may exert upon the revenue and future interests of the voluntary hospitals. A number of matters intimately concerned with hospital work, such as the training of nurses and the cost of administration of hospitals, are well dealt with in separate chapters. In short, the book is an adequate vade mecum for those who desire information concerning hospitals and kindred subjects in any part of the English-speaking world. Sir Henry Burdett, however, has a bone to pick with the managers of some American hospitals who will not send accurate returns with regard to their institutions. Generally speaking, the information contained appears to be reliable and sufficiently full, and the Hospital Annual is coming to be, in its way, indispensable. Mistakes occur here and there, as for instance, putting down the name of Hughlings Jackson as on the staff of the National Hospital for the Paralyzed and Epileptic, when he has been dead for some little time, but as said before, generally speaking, the information appears to be accurate.

The Practitioner's Encyclopedia of Medicine and Surgery in All Their Branches. Edited by J. Keogh Murphy, M.C. (Cantab.), F.R.C.S., Surgeon, Miller General Hospital for South-East London; Senior Assistant Surgeon to Paddington Green Children's Hospital. Price $7.00. London: Henry Frowde, Hodder & Stoughton; New York: Oxford University Press, American Branch, 1912.

This is a single-volume encyclopedia of medical science arranged by subjects rather than alphabetically. Such an arrangement is not so inconvenient in a one-volume work as it would be were there several volumes, for the index, which is very well made, enables the reader to find the subject he wants without undue trouble or loss of time. It has its inconveniences, however, in that the classification is not altogether satisfactory or scientifically accurate. For example, under the section on infectious diseases caused by bacteria, we find discussed such very doubtful cases as smallpox, chickenpox, scarlatina, measles, hydrophobia, and syphilis. The last is not caused by bacteria, and we have no proof that the others are; indeed, the general belief is that some or most of them are of protozoan nature. In the section on diseases due to vegetable parasites other than bacteria, actinomycosis alone is considered, the very important blastomycosis receiving no mention. There are numerous omissions also in other sections; Malta fever and angina pectoris, for example, being mentioned only casually in the discussion of other subjects. The subjects that are considered, however, are well treated—and there are many of these. They are discussed succinctly, but for the most part in all necessary fulness and very satisfactorily.

The Theory of Schizophrenic Negativism. By Professor Dr. E. Bleuler, Professor of Psychiatry, University of Zurich; Director of Burghölzli Asylum; translated by William A. White, M.D., Superintendent of the Government Hospital for the Insane, Washington, D. C. Price $0.60. New York: The Journal of Nervous and Mental Disease Publishing Company, 1912.

This is a monograph on a most complicated phenomenon of mental pathology, namely, the tendency on the part of the individual to react in a manner opposite to what one would expect. The predisposing causes are ambitendency, which sets free with every tendency a counter tendency; ambivalency, which gives to the same idea two contrary feeling tones and invests the same thought simultaneously with both a positive and a negative character; the schizophrenic splitting of the psyche, with the result that the most inappropriate impulse can be transferred into action just as well as the right impulse, and that in addition to the right thought or instead of it, its negative can be thought, and the lack of clearness and imperfect logic of the schizophrenic thought in general which makes a theoretical and practical adaptation to reality difficult or impossible.

Children—Their Care and Management. By E. M. Brockbank, M.D. (Vict.), F.R.C.P., Honorary Physician Royal Infirmary, Manchester. London: Henry Frowde, Oxford University Press; Hodder & Stoughton, 1912.

This is an eminently practical and simple guide for the young mother and even for the physician in the management of infants and young children. The methods advocated by the author are in accordance with orthodox teachings; there is nothing spectacular or obtrusively "original." The artificial feeding of infants is described with equal regard to the rules of percentage feeding and the practical facilities of the home. The vexing problems of the diet of nursery children are carefully considered.

Special Article.

REPORT ON VITAL STATISTICS AND HEALTH REPORTS OF NEW YORK CITY.

BY THE PUBLIC HEALTH, HOSPITAL AND BUDGET COMMITTEE OF THE NEW YORK ACADEMY OF MEDICINE.*

The Objects of the Report.—The objects of this report are threefold: (1) To analyze briefly the scientific value of the reports and statistical tables of the New York Department of Health in order to suggest desirable improvements; (2) to impress the medical profession with the importance of complete and exact, promptly issued vital statistics, and of their service to science as well as to administration, and, finally, (3) to urge upon the city the necessity for appropriating adequate means for the reorganization of the present Bureau of Records of the Department of Health into a Bureau of Vital Statistics, which should be charged in addition to the present duties of the Bureau of Records with the scientific arrangement and interpretation of the city's vital statistics and prompt publication of the health reports.

I. *The Bookkeeping of the Public Health Movement.*—Vital statistics, or demography, may be figuratively described as the most reliable barometer for measuring social pressure. It constitutes one of the few instruments we have for accurate recording of social movements and tendencies. It is authoritatively claimed that "there is almost nothing more important in the entire field of statistics than vital statistics, because of its direct bearing upon the health and consequent welfare of the people."† Dr. Newsholme defines it as "the science of numbers applied to the health registration of communities and nations."‡ It forms an indispensable basis for the proper guidance of the public health movement and for a rational administration of a health department.

The Advisory Committee of Statisticians, appointed by the New York City Department of Health to make a study of the city's vital statistics, have, in their report, aptly defined vital statistics as "the bookkeeping of the health movement. Correct and thorough statistical data are as essential to the wise administration of the Health Department as bookkeeping to the conduct of business."§

From the scientific point of view vital statistics are of great importance. The unique opportunity scientific men have for medicosociological studies in this city of great numbers with its large variety of racial elements, diversity of occupations, and habits of life, has never been exploited. Not even the first skirmish of the field has been made. The great laboratory for eugenic research has not hitherto been utilized, except, perhaps, in a casual way. In spite of the much discussed question of so-called "race suicide," no numerical studies of this phenomenon have been made in this city. The fecundity of marriage among the various racial and economic elements of the population; the distribution of stillbirths among the various social classes; the effect of illegitimacy on infant mortality; the influence of the age of parents upon the vitality of their children; the effect of consanguinity upon the fertility of marriage; infantile diseases in relation to the age and occupation of parents; births in relation to occupation of mothers; the relation of mortality to the density of population; the proportion of males and females at birth in relation to the ages of parents, their race, and economic status; the influence of immigration upon birth, death, and morbidity rates; immunity from, or susceptibility to, disease of certain races or occupational groups in the population; all these and many other matters of vital interest have never been studied nor current beliefs regarding them put to a statistical test.

II. *The Basis for Reliable Vital Statistics.*—The two indispensable conditions for correct vital statistics are: First, the correct enumeration of population and the reliable scientific estimates of population during intercensal periods, and, second, a complete and detailed registration of births, marriages, sicknesses, and deaths.

These two requirements must be fulfilled before any reliable results can be obtained. They are very closely interwoven, as deaths, births, marriages, and sickness, for purposes of comparison in points of time or place, must be expressed in ratios to the unit of population.

III. *The Bureau of Records: Its Growth and Duties.*—1. *Duties of the Bureau.*—Section 1179 of the New York charter provides that there shall be two bureaus in the Department of Health, that of the Sanitary Superintendent and that of the Registrar of Records. In the latter bureau there "shall be recorded, without fees, every birth, marriage, and death, and all inquests of coroners which shall occur or be taken within the city of New York." The duties of the Bureau of Records are more complicated than the wording of the charter would indicate. First, the bureau receives and keeps on file all birth, marriage and death certificates, prepares and maintains a complete registration of physicians and midwives practising in the city, issues burial permits, makes searches of birth records for school and employment purposes, makes transcripts of said records, and recommends for prosecution violations of the law as to the filing of certificates of marriages, births, deaths, and stillbirths. Then the bureau issues weekly, monthly, and annually a detailed summary of all the births, deaths, and marriages correlated with sex and age composition of the population; it computes birth, marriage, and death rates, and also collects and tabulates information gathered by other divisions of the department relating to the health conditions of the city.

2. *The Staff of the Bureau.*—The staff of the bureau is composed of the Registrar of Records, who is a physician, and of five assistant registrars, one for each borough, who are also physicians. Clerks and tabulators make up the remainder of the staff. The bureau has not a single statistician.

3. *The Growth of the Work of the Bureau.*—With the constant large increase of population, the work of the division has grown greatly. The number of marriage, birth, and death, certificates, the issue of burial permits and transcripts, and the making of searches of birth records has increased considerably within the last decade, as seen from the following table:

Year	Marriages		Births		Deaths		Searches		Transcripts	
	Total	Per Cent. Increase Over 1900	Total	Per Cent. Increase Over 1900	Total	Per Cent Increase Over 1900	Total	Per Cent. Increase Over 1900	Total	Per Cent. Increase Over 1900
1900	32247	....	81721	..	70872	..	25132	....	21989	....
1901	33447	3.8	80735	*1.2	70720	*.2	26361	4.9	23296	6
1902	36207	12.2	85644	4.7	68112	*3.8	27340	8.8	23025	5
1903	38174	18	94755	15.9	67864	*4.2	36074	43 5	28673	30
1904	39436	22	99555	21	78060	10.1	68824	174	36468	66
1905	42675	32	103880	28	73714	4	88395	252	35833	63
1906	48355	49	111722	36	76203	7.5	90964	262	39085	78
1907	51097	58	120720	47.7	79205	11.7	98504	293	42788	95
1908	37699	16	126862	55	73072	3.1	119824	377	45783	108
1909	41513	28.7	122975	50.4	74105	4.5	127887	409	48009	118
1910	46417	43	129080	57.9	76742	8.2	140911	461	54380	148
1911	48765	51	134542	64.6	75423	6.4	160751	540	57500	162

*Decrease.

4. *Appropriation for the Bureau of Records.*—The appropriations for the bureau have been increasing with the work, but the increases are very much lower than those allowed in the other divisions of the department for the same period. This has enabled the bureau to continue on its beaten track, but has not allowed for any expansion in other directions which seem urgently desirable. Last year, following the recommendations of a special Committee of Statisticians appointed by the Department of Health, a request was made that the Board of Estimate and Apportionment appropriate $45,000 for an enlargement and organization of the bureau. This money, owing to other very heavy increases in the budget for 1912, was not voted. The salary cost of the bureau for the last decade was as follows:

Year	Money Expended in Salaries	Per cent. Increase Over 1900	Year	Money Expended in Salaries	Per cent. Increase Over 1900
1900	$38,654	....	1906	57,850	50
1901	40,022	4	1907	61,576	59
1902	41,150	6	1908	65,885	70
1903	40,343	4	1909	61,654	60
1904	42,356	10	1910	68,110	63
1905	53,245	38	1911	62,075	61

*Prepared by E. H. Lewinski-Corwin, Ph.D., Executive Secretary of the Committee. The members of the Committee are: Dr. Charles L. Dana, Chairman; Dr. I. A. Miller, Secretary; Dr. A. T. Bristow, Dr. R. J. Carlisle, Dr. Haven Emerson, Dr. A. G. Gerster, Dr. S. S. Goldwater, Dr. T. W. Hastings, Dr. L. E. Holt, Dr. J. H. Huddleston, Dr. A. Jacobi, Dr. T. C. Janeway, Dr. E. LeFevre, Dr. S. Lloyd, Dr. F. S. Meara, Dr. W. G. Thompson, Dr. P. Van Ingen, and Dr. L. R. Williams.

†Director of the Census in "Physicians' Pocket Reference," p. 2, quoted by Dr. Cressy L. Wilbur in "The Public Health Movement," p. 42, Phila., March, 1911.

‡"The Elements of Vital Statistics," London, 1899, p. 111.

§Monthly Bulletin of the Department of Health of the City of New York, July, 1911. pp. 153-154.

IV. *New York City Vital Statistics.*—1. *Their Contents and Volume.*—The tables of the last annual report of the Department of Health *i.e.* for 1909 do not differ from those of previous years, except that some of the former tables were omitted in 1909 in accordance with the decision of the Department of Health to reduce the size of its annual reports. The 1908 report of the Bureau of Records was spread over 352 printed pages with only 18 pages of very simple descriptive matter; that for 1909 occupies but 87 pages, of which 22 contain descriptive matter and special tables. The discontinued tables were those giving (1) the deaths of males and females (each separately) by age, and cause of death in each borough; (2) the mortality according to cause, by weeks and age, with annual rates per 1,000, with meteorology, and number of deaths in public institutions, which was a very valuable table, and (3) a number of retrospective tables. All of the data of 1909 is comparable, however, with the reports of former years.

2. *Comparison of the New York Tables of Vital Statistics with Those of Paris and London.*—Comparing the New York tables of vital statistics with those of the city of Paris, one may at once notice that the Paris tables are much more complete, that they give very much more detail and more bases for correlation, especially with regard to births and marriages than do our tables. The Paris tables, for instance, divide births into living and stillborn, then they classify the two according to the legal status of the children and the age of the mother; they give the duration of pregnancy in the cases of stillborn children by the age of the mother and the number of previous births; they classify legitimate children, living and stillborn, by the sex of the children, age of the parents, duration of marriage, and according to the differences in the ages of the parents; they give the relation of age to fecundity; they report marriages by conjugal status before marriage and by the degree of consanguinity of the husband and wife, and so on. The New York report has only two tables for births and one for statistics of marriages. The most complete of all are the mortality tables, although here also there is great opportunity for improvement, especially along the lines of greater correlation and better interpretation of facts. In this respect the London vital statistics excel. The analyses contained in the reports of the Public Health Committee of the London County Council are most instructive and illuminating. They give a very clear picture of the existing demographic and health conditions. To begin with, all the information is given by sanitary areas, the city comprising 20, such districts varying in size from 18,000 to 350,000 inhabitants. The birth rates for each sanitary area are expressed as proportions to every 1,000 persons living, and as proportions to every 1,000 married females, aged 15 to 45. Tables are given indicating the fertility of women and the relation of fertility to social conditions. Statistics of deaths are similarly given by sanitary areas, and for each both the crude death rate and the death rate corrected for differences in the age and sex constitution of the population of the several sanitary districts are given. The most detailed, however, are the tables bearing on infant mortality. The deaths are classified by causes and by very minute age groups; by weeks for the first month of life, and by months for the remainder of the year. Infantile mortality is correlated with overcrowding, and special tables for the first 12 months of life are prepared. The principal epidemic diseases also find a very ample statistical description.

3. *The Scientific Value of the Tables.*—The demographic tables of this city present the minimum of information necessary for general administrative purposes. They are utterly inadequate as a guide for social or legislative action, and are of little use for scientific purposes. They do not throw any light upon such vital problems as the relation of morbidity and occupation, vitality of children, and the age of parents, the influence of illegitimacy on infant mortality, the relation of stillbirths to the occupation of mothers, the incidence of disease among the various elements of the population, etc. The cosmopolitan character of our city suggests a large number of questions of relation of race to various social phenomena, but in three instances only, where classifications are given by country of birth (instead of race or mother tongue) do our tables give any information on the matter, and, moreover, such a classification as "Austro-Hungarian" mothers (pp. 210, 220), for example, is utterly meaningless.

Furthermore, our marriage, birth, and death rates are crude rates, *i. e.* they express the average proportion of all deaths, births, and marriages in a unit of population, viz., 1,000. For general purposes the crude rates are satisfactory, but for a closer study of social conditions many factors which influence the death or birth rates must be eliminated before the force of other causes can be accurately determined or measured. If death rates, for instance, are to be employed as a meaure of the healthfulness of two places, the elements of age, occupation, and sex distribution must be eliminated, as some occupations are healthier than others, and as the mortality of females is at nearly all ages lower than that of males. Such correlated rates serve very often as a safeguard against erroneous conclusions, as will be illustrated in another section of this report. The New York City mortality tables contain correction for one single matter only, and that is the domicile distribution of the deceased by boroughs. By corrected mortality rates is meant there "that the death rate of each borough is corrected by the exclusion of the death of residents of the other boroughs occurring within its limits and the inclusion of the deaths of residents of the borough occurring in other boroughs."* Such corrections should be made as a matter of course and the name "corrected" not applied to it, as it may be misleading.

V. *Information Which the Bureau of Records Should Furnish in Its Annual Report.*—This section is not intended to give a detailed outline of all the tables which should be included in the statistical report, but simply to indicate the main divisions which seem to be essential to a comprehensive report of the demographic conditions of the community.

1. *With Regard to Marriages.*—In addition to the information given in classifying marriages by months, method of solemnizing, with three subdivisions of religious marriages, conjugal conditions at day of marriage, and color, the following statistics concerning the contracting parties should be given:

(1) Race or Nativity.—This would give us an insight into the degree of intermarriage among the various elements of population, also among the natives of different parts of the country. Is immigration tending to promote matings of dissimilar and unrelated blood, or is the tendency in the other direction? We could then trace the fertility of such marriages from the birth tables.

(2) Residences.—The residence unit in the marriage table should be made smaller than a borough. For scientific purposes the residence distribution of mates has great interest. Dr. Davenport reproduces in his book† a clipping from a Brooklyn (N. Y.) newspaper, giving the announcement of marriage licenses on a certain day in the spring of 1911, which shows the frequency of marriages between persons from the same address. To what extent does selection and not chance and propinquity govern the marriage phenomenon?

(3) Age, Education, and Occupation.—Marriages of minors should be given separately. Do we at present have in our society any evidences of educational and occupational selection, or are marriages contracted in an entirely haphazard way? What is the relation of selection, as far as we can measure it, with divorce?

(4) Length of Widowhood and Divorce.—Is there any relation between former conjugal condition and the marriage rate?

(5) Divorces by age and occupation of consorts, length of married life, and the number of children.

(6) The General and Corrected Marriage Rate.—The crude marriage rates should be continued for purposes of comparison with former years. A marriage rate corrected for women of marriageable age should be computed for ascertaining the actual fecundity of the population and for future and more exact comparisons.

2. *As to Births.*—The present tables of the Bureau of Records with regard to births should be amplified by tables giving the births by the months in which they occurred, by races, age of both parents, and their occupations.

Stillbirths and illegitimate births should be similarly classified, with the addition, in the case of stillbirths, of duration of pregnancy, occupation of mother, and length of work during pregnancy, if the woman was regularly employed at some occupation.

The tabulation basis should in all cases be smaller than a borough.

In view of the fact that venereal diseases are at present reportable, the number of cases of syphilis, by age, in a district should be put in close juxtaposition with the number of stillbirths in that district.

3. *As to Deaths.*—As has been stated above, our mortality tables already contain a great deal of important information. This information could be made more valuable by changing the arrangement of it and adding more material, so as to afford better means of comparison and correlation. Causes of death should, in addition to age groups, be subdivided with reference to occupations and the racial elements of the population. On the death cer-

*Annual Report of the New York City Bureau of Records, 1909, p. 244.

†Dr. C. B. Davenport, "Heredity in Relation to Eugenics," N. Y., 1911, p. 201.

tificate the occupation of the deceased is usually given. If this information could be made available and presented in accordance with some standard classification of occupations, say, as that of the last Federal census, much information of great importance and value could be obtained. As it is, we have no information on the relation of occupation, disease, and mortality, with the exception of a few private monographs. Deaths and suicides should be classified according to the conjugal condition of the deceased, and death rates should be correlated with social conditions. It would be extremely important to ascertain whether the effect of social conditions on mortality is as distinct in New York as it is in London. In London the death rates from all causes—from the principal epidemic diseases, from diarrhea, from phthisis, and from other diseases—vary in an almost inverse ratio with the social condition of the population. The better the social condition, the lower is the mortality from all causes. Is this true in New York, and if so, to what extent?

Infantile mortality should be registered and published by small, uniform tabulation areas; the age subdivisions, for the first month of life at least, should be given by weeks; the causes of death of infants should be minutely subdivided; the deaths of babies and the mode of feeding should be correlated; the relation of infantile mortality and overcrowding indicated, and the influence on the infant mortality rate of general and contagious hospitals for children, and of other public institutions caring for babies, clearly presented. Moreover, in addition to tables of mortality, life tables for the total population should be periodically constructed. Our life tables need correction from time to time, and by increases in the average longevity the influence of sanitary progress could be gauged.

4. *As to Morbidity.*—There is no way of accurately ascertaining the extent of general morbidity in a community. One approximation is furnished by causes of death and the prevalence of contagious and reportable diseases. Another source of information is contained in the hospital and dispensary records. If these could be classified and presented annually in the vital statistics report, much light would be thrown, not only upon the extent of morbidity in the community, but it would also serve as a guide to the city and to charitable institutions, as well as to charitable individuals, in their disbursements for additional hospitals. A classification of hospital and dispensary cases by occupations would throw light upon the relation of disease and occupation.

With regard to a better sanitary control of infectious diseases, the areas representing a unit of tabulation should be made uniform and much smaller than a city ward, and the principal diseases should be classified by sources of infection whenever known, as it is being done in London with reference to scarlet fever, for instance, where the following sources of infection are reported: previous case in family or house, infection by friends or neighbors, school, return cases, visiting hospitals, and other sources.

VI. *Statistical Methods.*—In order to be valuable, statistics must be exact and prepared in accordance with modern scientific methods, the tables must be carefully planned and arranged in such a way that no wrong inferences can be drawn. This has not been done in the past and therefore at the present time we are woefully lacking in a reliable basis for the preventive campaign and for social action in regard to health matters.

1. *Importance of Corrected Rates.*—For purposes of comparison the ordinary crude rates, computed on the basis of the frequency with which a phenomenon occurs in a certain fixed number of cases, say 1,000, are unsatisfactory. They very often lead to entirely wrong conclusions. In the case of Ireland, for instance, the crude birth rate has been declining for a number of years. This was attributed to the diminished fertiliy of the population. Dr. Newsholme and Dr. Stevenson,* analyzing the figures to their elements, demonstrated that the crude birth rate was utterly unreliable as an index to the fertility of the Irish women. Birth rates are influenced by four factors: (1) The number of women of child-bearing age in a given population; (2) the proportion of those who marry; (3) the age at which they marry, and (4) the natural fertility of the women. To establish the natural fertility of the women the other three elements affecting the birth rate must be eliminated before a proper index can be formed. By eliminating these elements it was found that the declining crude birth rate in Ireland was not due to a lower fertility of the population, but to the lower proportion of married women at child-bearing age, due to emigration.

Our city birth, marriage, and death rates are crude rates, and their main value is limited to general administrative purposes. For more detailed and intensive studies the rates must be corrected for certain factors.

2. *Need of Caution in Interpretation.*—Professor Chaddock, in his paper on "Sources of Information Upon the Public Health Movement,"* presents a number of very interesting illustrations showing how incomparable quantities are often compared and how erroneous conclusions are consequently reached. The report of the U. S. Department of War for the year 1899, for instance, analyzes the health conditions of the soldiers in the Philippines, and finds that the death rate among them compares favorably with the death rates of the population of Boston and Washington. This comparison is inconclusive, since soldiers are a selected, healthy class of men between the ages of 18 and 30 years, while the general population of cities is composed of people of all ages, infants and old men, healthy and sick. Many more examples drawn from various parts of the statistical field could be cited to illustrate the lack of satisfactory bases for many deductions, but this may suffice to prove the need of the skilful application of all safeguards and scientific methods to the guidance of such an important matter as the public health administration. The complex social problems of our city require constant and keen analysis of all the recorded data. Our present analyses, owing to the limited size of the staff of the Bureau of Records, are incomplete and fragmentary; they should have much broader bearings, be bolder and more intensive.

3. *Concentration of All the Statistics of the Department of Health in One Bureau.*—At the present time statistical data relating to work done and results achieved are corrected and tabulated in each separate division of the Department of Health, and this work is often performed by clerks to whom this tabulation is incidental to their other duties. This arrangement is not conducive to exactness and uniformity of work, nor to promptness in preparing reports and making them coherent and correlated. All the statistical work could be done better and more safely when performed under the direction of one bureau.

4. *Unit of Tabulation.*—The statistical information of the city is, in most cases, tabulated according to boroughs, and in some cases according to city wards, the boundaries of which were laid out long ago, and which are too large and uneven in area and in number of inhabitants. The wards of Manhattan differ in size from 78 acres (Second Ward) to 8,050 acres (Twenty-fourth Ward). The wards, moreover, do not coincide with social and racial groupings of the city population.

The unit of sanitary administration should be smaller than a ward and more elastic, more adaptable to the shifting of the population. The 40-acre tract units of the last Federal census to be published for this city present an excellent opportunity for the adoption of a new tabulation basis. For some purposes the 40-acre tract unit would be too small. In such cases a larger unit comprising a number of the smaller ones could be adopted, but for some other purposes the small basic unit would be of great assistance to efficient health administration.

5. *Need of a Local Population Census.*—As has been already mentioned, the first desideratum for complete vital statistics is a correct count of the population. As the Federal census is taken every ten years, the population of the city is estimated during the intercensal years, a method which can never be exact, especially when we try to estimate the distribution of the population by occupations, races, city areas, etc., and when it is applied to such a dynamic community with so large a bulk of immigration as New York City. The last police census in the city was taken in 1895. It showed the distribution of population by sex and age in Assembly districts and city wards. It also computed the density of population by wards. In 1905 the Department of Health took a census of the population of the greater city, but the results were never tabulated, and the vital statistics of the last decade were computed on estimates of population. It is highly desirable that a local census by the Police Department be taken every ten years and its ramifications made broader than in 1895.

VII. *Cooperation of the Medical Profession.*—1. *Careful and Uniform Registration.*—Of equal importance to a complete count of the population is a complete registration of marriages, births, deaths, and reportable diseases. Physicians are responsible for the registration of certain diseases, deaths, and a very large majority of births. On the accuracy of their reports the value of vital statistics depends. No valuable results can be obtained unless the medical practitioners making out the death and birth certificates take the trouble to answer all the questions carefully. Similar to a standard classification of causes of

*"Decline of Human Fertility," Journal of the Royal Statistical Society, Vol. LXIX, 1906.

*"The Public Health Movement," p. 61-86, published by the American Academy of Political Sciences, Phila., March, 1911.

death, the Department of Health should adopt a standard classification of occupations and races by mother tongue. The following of these classifications might involve some loss of time on the part of physicians, but as scientific men and citizens they would undoubtedly realize the importance of exact registration to science and to the health administration of the city, and would therefore readily adopt the uniform system, especially when it is realized that with respect to the scientific value of our vital statistics we are almost a generation behind the leading European countries.

2. *Statistical Instruction in Medical Colleges.*—Physicians have not been trained to appreciate the value of vital statistics. Medical colleges of this city have never offered full courses in the principles of statistics and their application to medicine and demography. In these days, when the physician is becoming more of a social factor than ever before, the need of his having a knowledge of statistical methods is constantly increasing. The branches of administration in which the professional knowledge of the physician is required are broadening, and the medical colleges should equip their students for their new opportunities, impressing upon them the value of scientific demography to the public health movement.

3. *The Medical Press.*—The medical press has hitherto given very little space to the consideration of the scientific value of public health reports. It often reproduces statistics without discussing their accuracy or significance. The health reports are rarely, if ever, analyzed and their contents or methods criticized. They constitute, perhaps, the only class of publications, public or private, which is free from the refreshing and invigorating current of vigilant, careful, and scientific scrutiny. It would be a great help and stimulus to the public health movement and to the city health administration if their reports and publications received more publicity and constructive criticism.

VIII. *Recommendations of the Advisory Committee of Statisticians of the Department of Health.*—The Department of Health Advisory Committee of Statisticians, mentioned above, realized the shortcomings of the present New York vital statistics and emphasized inadequacy of the present bureau and its staff to undertake the work on a larger scale. They accordingly advised last year the reorganization and enlargement of the bureau on scientific lines commensurate with the growth and needs of the city. All of this was incorporated in the budget estimates of the Department of Health for last year.

The Advisory Committee of Statisticians made their report in June, 1911, and they recommended the subdivision of the Bureau of Records into three sections: (1) That of Records, (2) of Research, and (3) of Publicity.

(1) The Division of Records to be charged with their present duties as outlined above.

(2) The Division of Research to be responsible for the scientific work of the bureau, for the preparation of tables, correlation of data, comparing results with former years and other places, and pointing out to the department the desirable lines of action.

(3) The Division of Publicity to be responsible for the publications of the bureau and for the general education of the public in health matters.

The Advisory Committee of Statisticians estimated that the additional cost of the enlarged and fully equipped bureau would amount to $40,000 yearly in salaries.

The recommendations of the Advisory Committee of Statisticians of the Health Department have the full approval of our committee. The present Bureau of Records has an inadequate force of trained statisticians and inadequate means to enable it to undertake the work on a large and scientific scale indispensable for public health and for a rational administration of the Department of Health. New York City should have a fully equipped and a scientific Bureau of Vital Statistics, and should, in this respect, set an example to the rest of the country. This year, witnessing the International Congress on Hygiene and Demography, is highly appropriate as a starting point in the accomplishment of such an end. Although we are not prepared to express any opinion on the rates of salaries to be paid to the men in charge of the work, as suggested in the estimates of the Advisory Committee of Statisticians, we want to emphasize here that these must be high enough to attract men of high qualifications, intelligent to plan investigations, and able to give proper interpretation to and analysis of figures. The value of statistics was depreciated in the past because of the laxity with which they were gathered, and because of the unsoundness of generalizations derived from them by men ill qualified to make proper use of them.

IX. *Publications of the New York City Health Department.*—The Department of Health publishes at the present time annual reports, weekly reports, monthly bulletins, and special studies carried on by the various divisions or by individual officers of the department. The quarterly reports have recently been discontinued.

1. *The Annual Reports.*—(1) Contents.—In former years the annual report was a stout, two volume publication with a lot of detailed description of the work of each division, numerous photographs, diagrams, reproductions of blanks used in the routine work of the department, and a number of monographs prepared by employees of the department, too extensive to be published in medical journals or magazines. The annual reports contained a great deal of detailed and superfluous information. In 1909 the size of the report was, with no harm to its value, cut from 1,234 pages, which was the size of the two volume 1908 report, to one volume of 305 pages.

(2) Lack of Careful Editing.—The editing of the reports has been negligent. The reports lack unity and congruity. Certain records of one year are often incomparable with similar records of former years. Information on some points is lacking, while on others it is repeated several times. In the section on the Child Hygiene Division we find in the report for 1909 the same table reproduced (pp. 181 and 183), once under the caption of "Communicable Diseases of Eye and Skin," and again under "Eye and Skin Diseases." What is worse than the repetition, however, is the fact that the first table reports 14,621 cases of miscellaneous diseases, while the other (on the next page) reports 179,545 such cases. The reader is left to guess which of the two reports is correct. By careful editing the report could be still further reduced with no curtailment of essential descriptive information. Many of the tables which are scattered throughout the report could be advantageously included in the report of the Bureau of Records, and correlated with other demographic data.

(3) Delays in Publication.—The annual reports contain a great deal of essential and highly interesting information, which is, however, rendered almost valueless (except for retrospective purposes) by the late issuance of the publications. At the time of this writing, early in September, 1912, the report for 1909 is the last available. For three years we have been without information as to the work of the department. This shortcoming, which is shared by all the publications of the Health Department, is a matter of great public concern, and the department should be able to find a way for remedying it. The delay is attributed to the large amount of "red tape" involved in the present arrangement for printing, whereby every report intended for publication must go for approval to the Board of the City Record, to the Department of Finance, and to some other departments before it reaches the printer. It is claimed that the reports leave the press in the same roundabout way. Without attempting to locate the responsibility for the deplorable delays, one questions the wisdom of issuing at all reports which appear so late, especially the weekly and monthly ones, which are intended for current information.

2. *The Weekly Reports.*—The weekly reports have a small circulation and are designed principally for physicians and others actively interested in the health of the community.

These four page leaflets give first a summary of deaths, births, and marriages by boroughs, then cases of infectious and contagious diseases by weeks for a period of fourteen weeks, and deaths first by principal causes and by large age groups, then by causes of death more minutely specified and by smaller age groups. The fourth page of the report reproduces a summary of deaths for the last fourteen weeks, with a computed annual rate per 1,000, meterology, and the number of deaths in institutions. The reporting of diseases by city wards was recently discontinued.

Aside from the question of the need of reporting chronic diseases by weeks, the question of the advisability of publishing these weekly summaries suggests itself when we consider that since January of this year the average delay of issuance has been twenty-three days, in some cases over a month. These delays are the more striking when compared with those of other weekly publications. The weekly reports of the U. S. Public Health and Marine Hospital Service reach New York five days after the date of publication, and the weekly reports of the Chicago Department of Health reach New York six days after the date of publication. The Chicago weekly report is always two weeks ahead of the New York report.

3. *The Monthly Bulletins.*—The publication of the monthly bulletins was begun in January, 1911. This bulletin contains, in addition to tables of vital statistics, descriptive articles and notes intended "for the instruction of the public and for the information of physicians and others concerned in public health work, to whom an account of the methods, aims, and accomplishments of the department may be of interest." It is undoubtedly a very instructive and interesting bulletin, but its value is diminished by its

double aim, to be scientific and to reach the general public. Hence, alongside of discussions on the "logical basis of Dr. Nott's hypothesis," we have a piece of poetry on "swatting the fly." The bulletin reaches and instructs a certain class of citizens in the community, but it does not reach the general public, and, like other publications of the department, it appears much too late.

4. *Monograph and Reprint Series.*—The department has recently established these two series. The first is to deal with certain problems of the department's work, the second is to disseminate in a standardized form reprints of papers on health matters which have been prepared by the department officers and published in medical journals. Six numbers of the monograph series have already appeared.

5. *Collected Studies from the Research Laboratory.*—In these studies are published the results of the work carried on by the bacteriological laboratories of the Department of Health. The studies are intended for professional men.

6. *Lack of Contact with the General Public.*—From this cursory review of the Department of Health publications we can see that the number and kind of publications are entirely sufficient for the description of the work and methods of the Department of Health, and that they are chiefly intended for physicians, social workers, and a certain class of the public. None of them is designed for the education of the masses or to supply what is considered the most effective weapon in the public health campaign. The Advisory Committee of Statisticians expressed the same opinion when they said that "the department has most inadequate and ineffective means of contact with the public, from whom it must derive its support, and through whose active cooperation alone it can achieve the largest results."*

It seems advisable to enlarge the edition of the weekly report and change its character. Most of the vital statistics given there could be omitted and relegated to the monthly bulletin; statistics of cases of contagious diseases reported, cases in hospitals, and deaths from contagious diseases should be left in, while cases of chronic diseases could be reported monthly in the bulletin. The space thereby gained could be used for popular and interestingly written information on various vital and timely topics; infantile diseases and milk stations in summer time, pneumonia in the fall, contagious diseases and school hygiene in winter, etc. Short reports of the main weekly activities of some divisions of the department could be reported there, and results of food and milk inspections could be given weekly. It would be a live and interesting publication, which the newspapers would be glad to reproduce regularly, and in this way a needed contact between the department and the public would be established. Arrangements could also be made with newspapers published in foreign languages for the periodic translation of the reports. In this way the great masses of immigrants would be reached. The reports could also be distributed among schools, clubs, libraries, churches, and settlements. The additional cost of the publication would not be very great, as, with the cooperation of the press, the report would not need to be spread broadcast in leaflets, but through the daily and weekly journals. In this way a broad and effective educational influence of the department would be secured for the good of the community.

SUMMARY.

1. Vital statistics is the bookkeeping and accounting of the public health movement and a guide for administrative, legislative, and social action.

2. The New York vital statistics are collected and tabulated by the Bureau of Records of the Department of Health. This bureau is, in addition, charged with many other duties, and its staff is inadequate for a detailed, intensive presentation of the vital statistics of the city.

3. The information contained in the reports of the Bureau of Records is insufficient and loosely correlated. With regard to the classification of the material and the statistical methods pursued, the New York reports are inferior to those of Paris, and with regard to the interpretation and analysis of the statistics, they are much inferior to those of London.

4. The reports fail to tabulate essential information contained in the marriage, birth, death, and sickness records which would throw important light upon many sanitary and social problems of the city.

5. Much of the statistical information of the various divisions of the department is prepared independently by the several divisions, published separately, and not correlated with the essential data of the report of the Bureau of Records.

6. The tabulation areas of the reports of the Bureau of Records are boroughs, and in some instances city wards. In many cases these bases are inadequate for administrative, social, or scientific purposes.

7. The two indispensable conditions for proper vital statistics are a correct count of the population and a correct registration of marriages, births, and deaths. The first requirement is met by frequent censuses. In this city, outside of the Federal census taken every ten years, we had a police census in 1895 and a Board of Health census in 1905, the data of the latter having never been published. Hence our rates are based on ten year estimates. As to the second requirement, the registration of births in this city is still incomplete, and in the registration of deaths there is no standard classification of occupations or of races by mother tongue, which would insure uniform, reliable, and scientific information.

8. Physicians have not yet fully realized the importance of correct vital statistics, and the medical colleges and press have not laid sufficient emphasis upon its significance.

9. The Bureau of Records needs reorganization and a larger, well trained scientific staff. The recommendations of the Advisory Committee of Statisticians, appointed by the Department of Health in 1911, for a subdivision of the bureau into a Division of Records, a Division of Research, and a Division of Publicity, are highly commendable.

10. The various publications of the Department of Health give a full description of the work of the department, but the delays in their publication detract a great deal from their value, especially for current administrative and social purposes.

11. The annual reports are usually several years late, and bear many signs of careless editing. The weekly reports have been, on an average, three weeks behind the time. The monthly reports also share in that shortcoming.

12. None of the publications of the Department of Health is designed to educate the masses of the people. They are of service to physicians and students of administration and sociology, but do not constitute a connecting link between the department and the general public.

RECOMMENDATIONS.

1. That the Department of Health reorganize and enlarge the present Bureau of Records in accordance with the recommendations of the Advisory Committee of Statisticians made in 1911, and subdivide the bureau into three divisions, of Records properly, of Research, and of Publicity.

2. That the Board of Estimate and Apportionment appropriate the money necessary for the enlargement of the Bureau of Records in the interests of efficient administration and the public health movement, and that the salaries fixed for the responsible officers of the bureau be such as to enable the department to secure well trained men for the positions.

3. That the work of the reorganized bureau be undertaken on a comprehensive scale and in accordance with modern scientific methods.

4. That all the statistical work of the department be done under the direction of the Bureau of Records to secure accuracy and uniformity of method, and that the records be promptly available.

5. That the reports of the Bureau of Records be published independent of the annual report of the Department of Health and be ready for distribution early every year.

6. That the city undertake a local population census every ten years beginning 1915, and that the forty acre tract unit of the last Federal census be made the basis for tabulation.

7. That the medical press give more analysis to public health reports and vital statistics and impress the profession with the importance of exact vital statistics, urging them to cooperate with the Bureau of Records in making prompt, careful reports.

8. That the medical colleges instruct their students in the methods and principles of medical and vital statistics.

9. That the Department of Health make greater efforts to issue promptly its annual, weekly, and monthly reports.

10. That the weekly report be changed from a purely statistical sheet to an educational pamphlet intended primarily for the general public, and that arrangements be made with the newspapers of the city for periodical reproduction of the essential parts of the report.

11. That more and better means of contact between the Department of Health and the public be established in the interest of efficient administration and of the public health movement, and that the public receive regularly information regarding the department's most vital functions—food and milk inspection, prevention of disease, and care of babies and school children.

NEW YORK, September, 1912.

*Monthly Bulletin, No. 7, Vol. I, p. 154.

Society Reports.

CLINICAL CONGRESS OF SURGEONS OF NORTH AMERICA.

Third Annual Session, Held in New York, November 11-15, 1912.

(Special Report to the MEDICAL RECORD.)

(*Concluded from page 920.*)

Thursday, November 14—Fourth Day.

THE PRESIDENT, DR. EDWARD MARTIN OF PHILADELPHIA IN THE CHAIR.

THIS meeting was held in the Brooklyn Academy of Music where the Congress was the guest of the Kings County Medical Society.

Problems of Obstetrical Practice.—Dr. W. W. CHIPMAN of Montreal, Canada, Professor of Gynecology and Obstetrics in McGill University read this paper. He stated that he proposed to attack the simple problems of obstetrics and felt that perhaps he should apologize for the elementary character of his paper. The interest in clinical teaching had recently greatly increased and this was especially true of obstetrical teaching. Practical obstetrics, however, deserved a very moderate amount of congratulation; in fact, it ran a bad third to both medicine and surgery. They had been too much inclined to regard natural parturition as a physiological process identical in the countess and in the cow, and to forget that there were many factors which modified the physiological process and made it a pathological one. The price of motherhood was still cruelly high; this was due among the lower classes to poverty, improper nutrition, and overwork, while in the upper classes it was due to indolence and luxury. Who was to blame that in Canada and the New England States 500 women died yearly and 5,000 were condemned to invalidism? Where the practice was imperfect the training was at fault. The fault lay in the teaching or, rather, want of teaching. Barely one-half of the medical schools of this country had been pronounced acceptable by the Council on Medical Education of the American Medical Association and only six really adequately equipped for clinical training in obstetrics. A recent graduate in Canada had informed him that his training had consisted in being permitted to witness two normal deliveries at a distance of 10 feet. In some of the other schools they were permitted to witness twelve confinements at an equal distance. These men were well trained, not as obstetricians, but rather as observers. There was some truth in the boast of the general surgeon that it was safer to undergo a laparotomy than to bear a child. Brilliant surgical achievement had dazzled the vision of many of their number so that they had failed to study the needs of the general practitioner; obstetrics was their most important need. He sometimes thought it would be better to banish the so-called classical surgery from the college curriculum. Dr. Chipman then criticised rather severely a recent article on the management of normal labor for recommending too frequent examinations of the patient and the pushing back of the cervix over the advancing head. These examinations were regarded too much as routine and matters of course and this was dangerous teaching. The problem of the management of normal labor was the oldest and the commonest in the practice of medicine. He preferred the term "spontaneous parturition" as wider and more comprehensive, since the proper management of normal labor should begin long before the actual crisis of labor set in. The physician should, in every case in which he was engaged before hand, make a visit to his patient six weeks previous to the date set for delivery. This should be done in all cases, but it was especially demanded in women gravid for the first time. At this visit the physician should make a careful palpation to note the size and position of the fetus and should make accurate measurements of the pelvis. No internal examination was needed at this time. At this time the head should be low and lying straight in the pelvic axis. If the child was found in this position it should be left alone. They should by no means forget to examine the urine as to specific gravity, albumen, and sugar. Dr. Chipman said he would pass over the first and second stages of labor, but would only remind them that the physician should come prepared, so far as asepsis was concerned, as though he were to attend a surgical operation. After the child was delivered ample time should be given for the uterus to recover; in the meantime the fundus should simply be guarded by the quiescent hand, but there should be no manipulation. The expulsion of the placenta was a physiological process. One might bring about the final expulsion of the placenta by asking the patient to bear down or by the use of a slightly modified Credé method. Very gentle massage might be permitted but no traction on the cord. A retained placenta was common enough but an adherent one was rare. The two ideals in the teaching of obstetrics were cleanliness and a masterly inactivity. Each man must master for himself a practical technique and so provide the solution of 80 per cent. of the problems he would meet. In regard to the problem of the unengaged head at the third stage of labor when the membranes were still intact or only recently ruptured, he said the gravity of the situation depended largely upon whether the patient was a primipara or not. In a primipara with the head riding above the brim of the pelvis and a great disproportion between the pelvic outlet and the head, the indications were quite definite, but it was the borderline cases that were more common and more difficult to manage. If the true conjugate was barely equal to the biparietal measurement of the head of an average child delivery might be effected, but in the case of a primipara with a conjugate vera of 9 centimeters and the first stage of labor completed the situation was serious and the physician might well say "If I had been aforetime here, this would not have happened." A visit a month or six weeks before would have disclosed the conditions and the obstetrician would have had time to consider what was best to be done. Since it was too late for this they had to confront conditions as they were. The bladder should be emptied and the fetal heart examined, under anesthesia a more careful examination of the parts should be made and the pelvis measured. If the conjugate vera was 11 centimeters, whether juxta minor or flat made no difference, delivery might be accomplished by molding the head if the child was small. The size of the head might be determined by Mueller's method of impression or Monroe Carr's modification. The total results of the examination might reveal a head slightly overlapping and in normal position. In such a case the first injunction was "Do not hurry." Statistics showed that 80 per cent. of these cases ended in spontaneous delivery. The better result obtained by midwives in such cases was due to their not knowing enough to interfere. In these cases the Walcher position might be an advantage together with slight pressure downward and backward on the head. The genupectoral position might also be employed. Another point was that they should avoid version; podalic version was for the expert. This procedure was useful within narrow lemits but was not for the average practitioner. A pubiotimy or cesarean section was scarcely to be undertaken outside a hospital. If the head did not descend axis traction forceps might be used with the patient in the Walcher position; force should not be used and the issue would soon be decided. If the head did not advance a living child could not be delivered. The fault was grave if this happened in any instance, but it was altogether unjustifiable if it happened the second time to the same woman.

Radical Operation for Cancer of the Uterus, Viewed from the Standpoint of (a) Permanent Cure, (b) Temporary Relief.—Dr. THOMAS S. CULLEN of Baltimore read this paper. The early recognition of cancer of the body of the uterus had led to such excellent results that its consideration was not necessary. In two-thirds of the cases there was no recurrence. In cancer of the cervix it was difficult to determine the cases that were operable. There were numerous advanced cases where the cervix was freely movable that were still operable even though the cancer had reached the ligament. In advanced cases it was an advantage to examine the patient under an anesthetic. While he had never used vaginal hysterectomy he would not hesitate to do so in the case of very fat or cachectic women. For several years he had done the cautery operation before opening the abdomen. Dr. Cullen described his operation, which was patterned after that of Wertheim, and illustrated it by lantern slides. They had been using a heated operating table which he thought was a great factor in conserving the vitality of the patient during the operation. They also conserved the patient's strength by not using the Trendelenburg position until the patient was under the anesthetic and first stage of the operation completed. Sometimes they removed the pelvic glands and sometimes they did not; every enlarged gland was not necessarily cancer. The extent of time employed in removing glands must depend upon the condition of the patient. It was a good plan to stimulate the patient before signs of collapse appeared. In order to find out

all they could as to the results of radical operation in cancer of the cervix, Peterson, Taylor, and Tausig had sent out letters to many operators and the results of the information gained had been published. The most evident fact ascertained was the entire absence of dependable statistics and the universal feeling that patients were not seen early enough. Tausig collected one series of 60 cases of whom only 14 were living after the five-year limit, but there were no operative deaths. Neil reported 70 cases of whom 20 per cent. were free from recurrence five years after operation. The investigations of the American Gynecological Society among the surgeons of the South showed that the majority of them had never done the radical operation. There was a failure to follow up the patients and only in a few instances were the statistics of any real value. After a radical operation, even in favorable cases, it was very difficult to give a forecast of the end results. When the growth was of the granular type one might look for a return. It had been stated that recurrences after operation made the condition of the patient more deplorable than though no operation had been performed. This had not been his experience, though in some cases in which he had operated he would not have done so had he known beforehand the extent of the disease. It was difficult to lay down any rule as to the advisability of an operation but with the terrible outlook for the patient most would gladly take a chance if there were only two chances in one hundred. He thought the Continental surgeons had better results than those in this country, because the women had more children, worked harder, and therefore were not so fat. The women had also learned to seek aid earlier, and, again, the surgeons were more accustomed to the operation and therefore did it more skillfully; one had performed the operation fifteen times in one month. In this country nothing but occasional sporadic efforts had been made to enlighten the public in regard to the early symptoms and the advantage of early operation in cancer of the cervix. The public had been taught the necessity of operation in appendicitis and now accepted it without question; they had been taught the necessity of and the means for fighting tuberculosis, and now they should be taught in regard to cancer. The public should be taught that cancer was a local lesion capable of cure by extirpation and not a blood disease. Under proper conditions the surgeon could save from 20 to 25 per cent. of those attacked by this disease. He thought the radical abdominal operation would give the best results but his feelings were expressed by the remark of Peterson that his experience in 11 advanced cases had not made him any more confident that the next patient would survive the operation or would be cured. Apparently favorable cases were apt to turn out to be grave. In a series of 48 cases in which he had operated there were 13 living after the five-year limit.

The Wertheim Operation.—Dr. WILHELM WEIBEL of Vienna, Austria, First Assistant to Professor Wertheim, read this paper. He said that Wertheim had been performing this operation since 1898, and a description of the operation by Wertheim was published in the American Journal of Obstetrics and Diseases of Children, of August, 1912. In describing the operation Dr. Weibel used lantern slide illustrations. He called special attention to the method of handling the ureter by placing the finger between the ureter and the uterine vessels and thus protecting it from being ligated. He said that they had never found cancer in glands of normal size. The ureter was sometimes imbedded in cancerous parametrium and there were some who preferred to resect it, but he did not favor this procedure, as cancer seldom attacked the ureter. The bladder was sometimes fixed and here he advised resection. In only a few cases was it necessary to resect the rectum. In 25 per cent. of their cases there were cancerous glands and nearly all of these died of recurrence. In a series of 863 cases at the Vienna Clinic from 1898 to 1907 operation had been refused by 36; there had been 447 inoperable cases; the radical operation was done 380 times; after operation 8 died of intercurrent disease and there were 160 recurrences. The results at the end of five years showed a mortality of 43 per cent., including primary deaths. The absolute efficacy of the operation had been 19.5 per cent. operative mortality of the first 100 cases was 30 per cent. In the following 400 cases it was 15 per cent., and in the last 175 cases it had been 9 per cent. The operability in the first 250 cases was 42 per cent.; in the next 251 cases, 52 per cent., and in the last 175, it had been 55 per cent. If the glands were hard and located high up along the aorta the cancer was inoperable. Fixation of the bladder was an unfavorable symptom. An exploratory operation might be necessary in making a decision. The greatest objection to the abdominal operation was the high mortality. The great reduction that they had succeeded in making was not due to the selection of cases so much as to better technique, more care in regard to the anesthetic, and other little refinements in handling these cases. It seemed that the prognosis was not so good in younger women as in those past the menopause. In recurrence little could be expected. Cancer statistics were only good when all the results were known. When they could not trace a case it was put down to recurrence.

Cautery in the Radical Treatment of Cancer of the Cervix.—Dr. X. O. WERDER of Pittsburg read this paper. He stated that in these radical operations his technique had undergone many changes. His first 19 cases were operated upon entirely through the vagina, but he was now using a combined vaginal and suprapubic operation. The operation was preceded by curettage of the cancerous surface. With the thermocautery he made an incision around the cervix and carried it up between the bladder and uterus. The peritoneum was not opened. Douglas sac was opened posteriorly. Wherever the wound did not look black and leathery the cautery was applied the second time. It was also applied to small bleeding vessels but the large vessels were sutured. The abdominal part of the operation was practically a pan-hysterectomy, but the broad ligaments were clamped and burned instead of ligated. In using the cautery he had never had but one injury to the ureter. The cautery was applied to the affected portions of the parametrium where the heat from the cautery destroyed microorganisms and penetrated further than could be reached by the knife alone. The removal of the iliac glands was a routine measure, but the regional glands were not disturbed because, according to Wertheim, with multiple gland involvement only five of his cases were alive after five years. He was very skeptical in regard to the alleged advantage of removing the glands. He had done the radical cautery operation in 78 cases. The primary mortality had been 5 per cent.; operability 39 per cent. There were 18 cases that survived the five-year limit and 13 were well at the present time. Among the recurrences two were after more than six years and two after five years. In all of these cases the clinical diagnosis had determined the treatment and only once had they resorted to an exploratory operation. Their primary mortality of 5 1-10 per cent. certainly compared favorably with results obtained by others. There had been no serious infections; sepsis was a large factor in causing the high mortality from radical operations. He did not attribute the absence of sepsis to the preliminary curettement but to the cooking process to which the parametrium was subjected. As there was very little loss of blood the danger of heart shock was greatly diminished. Age was an important factor as affecting recurrence; it seemed that lymphatic extension was much more rapid in the young and that women who had passed the menopause were much less liable to recurrence.

Dr. ROBERT L. DICKINSON of Brooklyn, in discussing Dr. Werder's paper, said that Dr. John Burns of Brooklyn had performed these radical operations with the electrocautery some years ago but his outfit was so elaborate that it was difficult to duplicate. The advantages of the deep dry roast have been shown and it was now possible to secure a simple and practical apparatus such as was on exhibit for inspection after the meeting. It was not impossible of argument that most of the cases that were curable could be cured by the lesser operation. The radical operations should only be done by very expert surgeons after a long experience. As a rule he believed in the cautery for the lower part of the operation and the suture for the upper part, but he had done the complete extirpation with the cautery.

Extended Radical Operation Through the Vagina for Uterine Cancer.—Dr. GEORGE GELLHORN of St. Louis, Mo., read this paper. He said that researches had shown that the recurrences in cancer of the uterus had been shown to take place in the parametrium and as a consequence simple hysterectomy had lost all precedence. He had used the Schauta operation with some slight modifications. By this operation, the details of which were given in Schauta's monograph on this subject, the greater part of the vagina and the parametrium were removed together with the uterus. Dr. Gellhorn described and illustrated with lantern slides his method of dissecting the vagina so as to form a cuff which was stitched and drawn out of the wound, thus preventing contact with cancerous tissue. He showed how he exposed the parametrium and dissected the ureter under the guidance of the eye. The two parametria were excised close to the pelvic wall. The

ligaments were fastened extraperitoneally. The Schauta operation was practically unknown in this country and was not popular. The technique of the vaginal operation was a *terra incognita*, but if a surgeon wished to claim the distinction of a specialist he should be familiar with every method used in his specialty. It was surprising how much of the pelvis could be exposed by the Schauta method. They could not afford to adapt the patient to one method of operating. The abdominal method was unsuitable in very fat women, in those past the age of sixty, in the cachectic, the emaciated, and those having heart disease. The mortality of the vaginal operation was lower than that of the abdominal. Wertheim had obtained a mortality of 18.5 per cent., and Doederlein of 17 per cent. Schauta and Franz had shown an operation mortality of 11 per cent. Cancerous glands were found in about one-third of the cases and here it had been admitted that operation was practically useless; removal of the glands in other cases was unnecessary. The two methods did not differ in their essential principles; they complemented each other and one should choose the operation suited to the individual case. In early cases and in the squamous celled variety the vaginal method was preferable. Where the uterus was not movable the abdominal method should be chosen. Pregnancy, fibroids, tubo-ovarian tumors, etc., were for the abdominal method. The surgical axiom that in dealing with cancer one should cut only in healthy tissue existed only in theory; these were times when they had to place the knife almost on the line of demarcation. In such instances they were liable to have recurrence and the state of the patient was worse than though she had not been subjected to the operation. His experience with recurrences was that they were much less amenable to treatment. He did not believe that they should persist in an excessive radicalism. In cases that had been operated upon the recurrence was more apt to be complicated with a mixed infection. The days of radical partisanship were past and he believed that the abdominal operation had served a purpose in focusing their attention of this subject and that it still had a place in surgery, that it was the operation of choice in advanced cases.

Dr. Howard C. Taylor of New York, in discussing these papers, said that the operation for carcinoma might have any one of three ends in view. It might be undertaken to save life, to prolong life, or to make life more agreeable. The operation with the highest percentage of cures was not necessarily the one of choice but the one with the highest percentage of operability. Any deficiency or interference with function was ignored and any risk was taken as giving the patient the only possible chance of life. However, there was a risk beyond which it was not right to go. In the largest percentage of cases Wertheim's operation was the one indicated. The risk was not so great that it could not be undertaken. He had done it and did not hesitate to take the risk. He had witnessed the work in Schauta's clinic and was surprised at the accessibility of the parts and the amount of tissue that was removed. Beyond question this operation did not remove as much tissue as was removed by the abdominal method. It was much more difficult than the Wertheim operation. However, he preferred the vaginal operation in the case of very fat and cachectic women, or those with marked prolapse. The great need was better statistics. Each man should follow his own cases and then they might learn the proper position of these operations in America. Another problem that confronted them was that of getting the patients early in the course of the disease. The great difference in the statistics between this country and the Continent was that they got their cases earlier abroad. In this country many were operated on only to prolong life and give some comfort. In order to get the cases earlier, women must be taught the early symptoms of cancer of the uterus and that operation was the only cure. In Germany and Austria they considered cases inoperable that would have been operated upon here. Dr. Taylor said he thought the time had arrived for the inauguration of a campaign of education on the subject of cancer and he wished to submit the following resolutions: *Be it Resolved*, That the time has arrived when, if the surgeons of America are to do their duty to the citizens of this country, a campaign of publicity should be at once undertaken to bring to the attention of every woman in this country the early symptoms of cancer of the womb and to point out that if the cancer be detected in its early stages it can often be cured. *Be it further Resolved*, That this society at once appoint a committee of five, to be named by the president, to disseminate this information. *And further*, That this committee be instructed to write or have written, articles to be published in the daily press, or the weekly or monthly magazines, as may prove most expedient. *And further*, That they report their progress at the next annual meeting.

In accordance with these resolutions the president appointed Drs. Thomas S. Cullen of Baltimore, Howard C. Taylor of New York, C. Jeff Miller of New Orleans, F. F. Simpson of Pittsburgh, and E. C. Dudley of Chicago.

Friday, November 15.—Fifth Day.

The Early Days of Clinical Surgery.—Dr. Stephen Smith, having been introduced as the guest of the society, told of the beginnings of clinical surgery at Bellevue. He said that in 1840, when he began the study of medicine, Dr. James R. Wood made an effort to introduce the clinical study of surgery and met with much ridicule. It was gratifying to him to have lived to see the day when the advantages of clinical surgery were recognized. If he had his way he would not only put medical students into hospitals as internes but would put them into the wards as nurses; they would then become acquainted with every possible emergency. He compared the surgery of those days, when anesthetics were not used, with that of the present time and said that at that time they were as much amazed at the work of Mott and Rogers as they of the present time were amazed by the operations for the transplantation of kidneys or bone, or perhaps as they would soon be by the transplantation of brains. Dr. Smith also drew a vivid picture of the results of a neglect of asepsis in those days and compared it with the present, when, according to report, a prominent physiologist sent to Bellevue for a specimen of pus to exhibit to his class and was told that there was none in the institution.

The Treatment of Lateral Curvature of the Spine.—Dr. E. G. Abbott of Portland, Me., read this paper and illustrated it with lantern slides. He said that from the point of view of the orthopedist if one or more movements of any portion of the body were lost, this constituted a deformity. If the movements of flexion and abduction were lost in the foot a club foot resulted; the spine was not unlike the foot. It was capable of bending as far to the right as to the left in the normal individual, and if this motion did not reach to that of the normal individual, the spine was crooked. If a club foot was operated upon and brought to the correct anatomical position and held by a fixed dressing until union took place, when the dressings were removed the deformity would almost immediately recur, but if the foot was put in extreme flexion and adduction until healing took place and then held in the same position by a steel appliance, the result would be a cure. Physiological lateral curvature was a position frequently assumed during the activities of daily life and pathological lateral curvature was the same so far as the position of the spine was concerned. Following the analogy of the club foot the logical treatment was to place the spine in an overcorrected position. To accomplish this overcorrection, Dr. Abbott had devised a gas pipe frame in which was suspended a hammock. The hammock was shaped so that the head and feet were elevated and the head was supported by a strap under the occiput. Straps were applied around the body of the patient and by means of a windlass attached to the frame so adjusted as to bring pressure to bear in opposite directions. They were adjusted so the spinal deformity was overcorrected. The shoulders were treated in a like manner. Dr. Abbott then applied a plaster jacket to the patient with the spine in the over corrected position. After wearing this jacket for the length of time that the individual case might require, it was removed and replaced by one in which the patient's spine was in the straight position. A window was cut in the jacket over the seat of the deformity so that there was no undue pressure at this point and the physician could watch the progress of the case. By means of lantern slides Dr. Abbott showed the different stages of the procedure as applied to a girl, 19 years of age, with an old lumbar lateral curvature of five or six years' standing, which was made perfectly straight at the end of eleven months. In the treatment of club foot every surgeon realized that the after treatment was more important than the operation and that the corrected deformity must be followed up for two years. The same was true in lateral curvature; some appliance should be worn which might be removed for exercise and to meet this demand Dr. Abbott had devised a celluloid corset. In ordinary cases it was worn a year, being removed twice daily in order that the patient might perform certain exercises. For the first six months this corset was worn day and night and then during the day only. In many instances it might

have to be worn for a longer time. There were many cases of lateral curvature of the spine that could not be cured. It was possible in severe cases to overcorrect the deformity so that the overcorrected result would be worse than the original deformity. This method was not applicable to deformities resulting from tuberculosis, but would be found effective in lumbar and dorsal curvatures and even in upper dorsal and double curvatures.

Dr. JOHN RIDLON of Chicago said that in his opinion Dr. Abbott had done one of the greatest things yet accomplished in the realms of surgery. When he first read Dr. Abbott's paper on this subject about a year and a half ago he was very skeptical. In his long experience he had treated lateral curvatures in different ways and had secured very few cures. He had obtained better results with Lovett's method than with any other until he had tried that of Dr. Abbott. He had visited Portland to see Dr. Abbott work and felt that he had accomplished the impossible. Since that time he had treated 23 cases by the Abbott method and had had some cures. Some of the cases thus corrected and overcorrected could not have been cured by any other known method. He had not been successful in correcting lateral curvature in the upper dorsal region as had Dr. Abbott, nor had he been successful with the double curvatures. He had been very successful, however, with cases of a single curve in the lower two-thirds of the dorsal region. He had used the method with satisfaction in the scoliosis of infantile paralysis.

Dr. ROYAL WHITMAN of New York said that he could not agree with some of the statements that Dr. Abbott had made. Since Dr. Abbott had published his article in June, 1911, he and his associates had been testing his method; they had followed Dr. Abbott's directions as nearly as possible. They had had under treatment an average of 40 cases during the summer and their results did not seem to justify Dr. Abbott's claims. Club-foot offered no adequate comparison. Many of the high dorsal curvatures and sharp angulations of the ribs offered great resistance to treatment. Certain cases had been rapidly corrected but as rapidly relapsed. He thought the attitude in which the patients were suspended was undesirable and the patient very uncomfortable. Sleep was disturbed and respiration interfered with, and the pain was renewed every time that the pressure was renewed. He felt sure that they had not made more than the average number of mistakes that any one would make in the application of a new method. The corset had to be worn too long and he felt sure that moderate lateral curvatures could be reduced more easily by extension and gymnastic exercises. He nevertheless thought the thanks of the profession were due Dr. Abbott for the new interest that he had awakened in the subject.

Surgery of the Bones and Joints.—Dr. JOHN B. MURPHY of Chicago made this address. He divided his subject into three divisions as follows: (1) Fractures in the neighborhood of the joints; (2) diseases of the joints which were complicated by fracture; and (3) diseases of bones which had regenerated after partial destruction. He called attention to those fractures which were most common but which gave the most evil results. Colles' fracture was always produced by falling with the pressure upon the anterior surface of the hand and not on the back of the hand; it always resulted in this definite way. The question arose, How should it be reduced? By traction and this was the only definite way to accomplish this if proper results were to be had. In order to make this reduction the bones should be unlocked and for the after care use a splint of any particular kind. If the fracture was properly reduced it would remain reduced. It was only necessary to place on plaster-of-Paris, up and down, and place the limb in a handkerchief and let the patient go. Dr. Murphy presented pictures showing the results of his treatment. In many cases there occurred a Volkmann's contraction. Why? Because the arm itself was not used as a splint. Dr. Murphy described the operation he did and emphasized the importance of picking up the periosteum without opening the joint, not a difficult thing to do. Another interesting picture he showed was of a fracture at the elbow which occurred nine years before the photograph was obtained, and in this case there was a failure in extension and an incomplete bony ankylosis. An attempt was made to elongate the tendon after dividing the capsule clear across. The fibrous portion of the capsule was inelastic and, of course, would not fracture. He had had as many as twenty-five or thirty cases of Volkmann's contraction to deal with. In this condition the mischief was usually done within twenty-four hours; there was a traumatic myositis with swelling, tenderness, etc. This should be written about in all papers dealing with injuries of the joints. Dr. Murphy presented another picture of a boy who had talipes equinus from birth. He was twenty years of age. The result of his operation was the production of a perfect normal relationship. Another picture shown was one of fracture at the shoulder joint which was very interesting in illustrating the errors that were made in interpreting the *x*-ray pictures. These pictures, in his opinion, were the most difficult to read because they were so often deceptive. Another picture shown was one of internal luxation of both bones of the forearm. In another case the *x*-ray did not reveal anything at all in the way of any pathological condition about the shoulder; it did not show that the head of the humerus was not in the glenoid cavity at all. The diagnosis of fracture had to be made on the physical signs alone. At operation the head of the bone was found to be completely out of the glenoid cavity. Pictures of Pott's fracture were shown, a fracture of the lower portion of the fibula, the interosseous ligaments being injured and with a luxation of the foot outward, not inward. In cases of Pott's fracture it should be borne in mind that from six to eight weeks are required for repair of the injury. Dr. Murphy showed pictures of fractures about the knee, particularly that of the impacted type. He also showed photographs of ununited fracture of the femur. In dealing with these latter it was absolutely necessary that the strictest asepsis should be employed. In cases of inflammation of joints there were but two tissues that really became inflamed, the synovial membrane and the bone or bones. It was the former that should be especially considered in the treatment of these inflammations. It was interesting to note that its tensile strength or power was from 100 to 140 pounds. When a joint became infected the endothelial cells were destroyed and this was followed by ankylosis. The joint should not be opened unless there was a streptococcus infection present; these cocci were the ones that destroyed the synovial membrane. Every day they met with cases of arthritis which began with a chill and which, as a rule, resulted in a certain amount of destruction of the synovial membrane. If these cases were studied with care it would be found that those that began with chills were cases of pyemia; when there were no chills they were instances of rheumatism so-called, which was not rheumatism but mild infection. In these arthritides, whether multiple or single, that began with a chill one often found one, two, or more joints affected. The first thing to do in these cases was to apply a Buck's extension apparatus; this would relieve the pressure and pain and morphine would not be required. The second thing to do was to aspirate the joint if there was much tension. And the third thing that might be resorted to was injections remembering the fact that the fluid in the joint was a very good culture media. Dr. Murphy showed some pictures illustrating the evils that resulted from draining these joints and the bony union which had occurred without drainage. In cases of ankylosis of the hip, an end to be desired oftentimes, the importance of keeping the limb in proper position was emphasized. There were more deformities following arthritis than from fractures. After arthritis there were many cases of metastatic inflammations. Why were they not recognized? Because the joint never became involved during the active and early period of the infection unless there was a streptococcus infection. He asked them to recall the fact that when they were in the dissecting room and the finger was cut, nothing serious was looked for even if the axillary glands became involved. One never became infected with the Neisser bacillus before the age of eighteen as a rule. After that time frequent cases of infection occurred. There was no danger in these cases from metastases before the seventeenth day. In cases of diphtheria there was no danger of metastases until the membrane came off. Dr. Murphy then exhibited a number of pictures of bone transplantations and called attention to the fact that in fractures there might be imperfect union even though the fragments were in perfect apposition. This was probably due to a lack of osteogenetic force in the line of union, and the insertion of a fresh bone graft would result in perfect union.

Dr. GEORGE E. BREWER said the paper had been one of great interest and to discuss it would be a work of supererogation. They had received a great lesson and should thank Dr. Murphy for his interesting paper.

Prostatectomy.—Dr. E. S. JUDD of Rochester, Minn., read this paper. He advocated the suprapubic operation and described the method in use at St. Mary's Hospital. He stated that the posterior lobe of the prostate was a separate structure, separated from the anterior lobe by

a fibrous capsule and that, furthermore, a primary carcinoma rarely had its beginning anywhere but in the posterior lobe. The posterior lobe could be enucleated with the finger, unless the tissues were unusually tough, from the prolonged use of the catheter. The operation was done in the usual way. He preferred to have the bladder empty and did not open the peritoneum unless it happened accidentally, when it apparently made no difference in the results. There was no bleeding if the enucleation was done within the capsule. He sutured the bladder without providing for drainage after having first made sure that there were no blood clots retained. The suprapubic route was the anatomically correct approach; it did less damage to other structures; interfered less with other functions, and was more certain to result in a cure. The perineal operation was much more difficult no matter what method was employed.

Dr. J. Bentley Squier of New York said that an attempt to discuss the paper was futile as he gave his unqualified assent to the suprapubic operation whether for the relief of urinary retention or of obstruction. He believed it was customary to sew the bladder without drainage, but his experience had been such that he had not thought it wise to continue this method. Drainage was considered a good measure in either surgical procedures and it seemed to him that it was in this. Pulmonary embolism was a danger after any surgical operation but especially so after prostatectomy.

Suture of Vessels.—Dr. Alexis Carrel gave a brief demonstration of his method of blood-vessel anastomosis which he illustrated by lantern slides. Only a small incision was necessary. The tube was a silver one plated with gold and sterilized in paraffin. It was introduced by a specially constructed dilator with two branches. The tube was fixed by ligature. The procedure looked exceedingly simple, Dr. Carrel stated, but was in reality a very delicate operation.

Election of Officers.—The officers elected for the next year were: *President*, George Emerson Brewer of New York; *Vice-President*, Dr. W. W. Chipman of Montreal, Canada; *General Secretary*, Dr. Franklin H. Martin of Chicago; *General Treasurer*, Dr. Allen B. Kanshiel of Chicago; *Chairman of the Committee on Arrangements*, Dr. E. Willis Andrews of Chicago. Chicago was selected as the next place of meeting.

State Medical Licensing Boards.

STATE BOARD EXAMINATION QUESTIONS.

Pennsylvania State Board of Medical Examiners.

December, 1911.

(*Concluded from page 876.*)

OBSTETRICS.

1. How would you treat a case of prolapse of the cord?
2. Give the management of a normal case of labor.
3. Name the conditions during labor indicating an anesthetic.
4. Give a description and the causes of false and true labor pains.
5. Describe the technique of the high forceps operation.
6. What are the sources of septic infection during labor, and what means would you take to prevent it?
7. What are the early symptoms of ectopic gestation?
8. State the causes and proper management of rigidity of the os uteri in labor.
9. Name a method of treating labor at full term when complicated by placenta prævia.
10. Give the possible complications and treatment of twin labor.

SURGERY.

1. Give the details of an operation for phimosis.
2. What symptoms would warrant the exploration of the brain?
3. Describe the operation of tracheotomy.
4. Describe in detail the conservative surgical treatment of open comminuted fracture of the tibia.
5. What condition of a stump would warrant amputation?
6. What symptoms would require the operation of salpingectomy? Outline the palliative and operative treatment of infection of the fallopian tubes.
7. Describe in detail an operation for the radical cure of oblique inguinal hernia in the male.
8. Describe in detail an elective amputation of the leg.
9. Name three forms of fracture that might occur about the elbow joint, with the appropriate splints for the treatment of each.
10. Describe the treatment of carbuncle.

HYGIENE.

1. What hygienic measures should be followed to prevent malarial infection?
2. Give the dietetic and hygienic management of acute rheumatism.
3. Describe a method for the disposal of excreta in the absence of sewerage system.
4. Outline the hygienic management of a case of scarlatina in a private residence.
5. What instructions should be given a patient with pulmonary tuberculosis to prevent the communication of the disease?

ANSWERS.

OBSTETRICS.

1. *Treatment of prolapsed funis* consists in: (1) Not rupturing the membranes prematurely unless there is some positive indication; (2) postural treatment, in which the woman is placed on her back or on the opposite side to that on which the cord lies, with hips and pelvis elevated, or the knee-chest position may be adopted; (3) reposition of the cord, either manually or with some form of repositor; (4) speedy delivery, by forceps or podalic version.

2. *Management of normal labor. During the first stage* a rectal enema of soapsuds with turpentine (℥i) should be given, and when the os is dilated to the size of a silver dollar the patient should be placed in bed, lying upon the side toward which the fetal back looks. If the pain is severe, chloral hydrate (gr. 15) may be given every half-hour for 3 doses.

During the second stage, examinations should be made every 10 or 15 minutes. In multiparæ, the membranes may be ruptured with the finger or with some aseptic instrument. Care should be taken not to injure the child's scalp or the lower uterine segment. The pain may require the administration of chloroform or ether, but not to the extent of complete anesthesia. The expulsive force of the abdominal walls may be increased by directing the patient to pull upon a sheet firmly secured to the foot of the bed. Attempts may be made to prevent laceration of the perineum by making firm backward and upward pressure against the occiput during the pains; by restraining voluntary expulsive efforts during the pains; and by securing expulsion of the head between the pains. The head should be supported when born; the eyes should be cleansed with sterile water; and if the cord is coiled about the neck, it should be loosened or slipped over the head. Delay in delivery of the shoulders may be overcome by stimulating the uterus by friction through the abdominal wall or traction. The cord is ligated and cut when pulsation has ceased, and the child is placed by the mother's side with its face turned away from the maternal discharges.

During the third stage ℥i of fluid extract of ergot is administered and irritation of the uterus by friction through the abdominal wall is practised for 10 or 15 minutes. If the placenta is not expelled by this time, the uterus is firmly grasped between the thumb and 4 fingers and compressed. Firm pressure is then made from above downward and backward in the direction of the pelvic canal. This usually causes delivery of the placenta. A vulvar pad of salicylated cotton and carbolized gauze and an abdominal pad and binder are then applied." (Gould and Pyle's *Pocket Cyclopedia.)*

3. *Anesthetics* are used in labor to lessen suffering produced by labor pains; to lessen the pain attending obstetric operations; to relax the uterus when its rigid contraction interferes with version; to promote dilatation of the os uteri; to reduce excessive nervous excitement which may interfere with progress of early stage of labor; to relieve eclamptic convulsions and mania; in cases of uterine inversion to relax the constricting cervix and so facilitate replacement; in bipolar version to lessen pain of introducing the hand into vagina; in precipitate labor to suspend action of voluntary muscles and retard delivery; in all cutting operations upon the abdomen; and sometimes in sewing up a lacerated perineum when many sutures are required. (From King's *Obstetrics.)*

Dangers: It lessens the efficiency of the uterine contractions; it predisposes to postpartum hemorrhage; and, if given too freely, may be followed by headache, nausea, and vomiting.

4. *False labor pains* are slight, occur before labor, do not cause dilatation of the os, do not produce a "show." They

are the normal intermittent contractions occurring in pregnancy, and may be further caused by a loaded rectum.

True labor pains gradually increase in frequency and severity, occur during labor, cause the os to dilate, produce a "show." They are due to commencing labor.

5. "The Simpson, the Tarnier axis-traction, and the Sawyer forceps are the instruments most often used. They may be used as tractors, rotators, levers, or compressors. They are indicated when there are lessened expulsive force, increased resistance, threatened fetal or maternal life, certain acute and chronic diseases, and abnormal positions and presentations. They should not be used when the os is undilated, when the head is not engaged, except in placenta prævia, when the membranes are unruptured, when the disproportion between the child's head and the parturient canal is too great, or in impossible positions and presentations. Before applying the instruments they should be sterilized, preferably by boiling; and the patient anesthetized and placed in the lithotomy position. Two fingers of the right hand are introduced into the vagina; the left blade of the forceps is then held almost perpendicularly by the left hand, with the tip of the blade opposite the vulva; the tip is introduced into the vagina, passed along the floor toward the sacrum. The blade is rotated outward in its long axis in order to escape the promontory of the sacrum. The right blade is introduced in a similar manner. To facilitate locking one of the blades must be rotated forward. If the head occupies the right oblique diameter, as in L. O. A. and R. O. P. positions, the right blade must be rotated; if it occupies the left oblique diameter, the left blade must be rotated. Traction is made in the direction of the pelvic axis until the perineum is well distended. The perineum is then protected by one hand, while the face is swept over it by an upward movement of the forceps. In posterior positions it is necessary to remove the instruments after the head is drawn down to the pelvic floor; after anterior rotation is secured they may be reapplied. If the occiput rotates into the hollow of the sacrum the hands should be depressed as the face is swept out under the symphysis pubis." (*Pocket Cyclopedia.*)

6. The aseptic management of normal labor aims to *prevent* infection. The prophylaxis consists in throrough disinfection of the *patient*, the *physician*, and the *instruments* and *appliances* employed. The simplest method is as follows: The *patient*, at the beginning of labor, takes a tepid bath and is well scrubbed all over with soap and water. Then an enema of soap and water to empty the bowel; after the action of which, the external genitals, thighs, buttocks, and abdomen are carefully washed with a 1:2000 bichloride solution, special attention being given to overlook no fold or fissure of the surface. The vaginal douche, of 2 per cent. creolin solution, or the weak solution of bichloride of mercury formerly used before labor, has been abandoned, unless there be some already existing infection, when it may be used. The normal vaginal mucus is itself germicidal in some degree, as well as a useful lubricant, and should therefore be allowed to remain undisturbed. Moreover, washing out the vagina exposes the woman to some danger of infection from an unclean syringe. The *physician*, before making any examination or doing any operation, removes his coat, bares the arms to above the elbows, when the hands and arms are thoroughly scrubbed with soap, water, and a stiff nail-brush. Scrape the under surface of the nail-ends and the fissures surrounding the nails with some pointed instrument, not sharp enough to scratch, and having washed off all soap in some clean water, immerse the hands and leave the arms in a 1:2000 bichloride solution, and continue this last washing for ten minutes." (King's *Obstetrics.*)

Nothing should come in contact with the genitals of the patient that is not sterile; and examinations should be as few as possible.

7. "When ectopic gestation exists there are: (1) The general and reflex symptoms of pregnancy; they have often come on after an uncertain period of sterility. Nausea and vomiting appear aggravated. (2) Then comes a disordered menstruation, especially metrorrhagia, accompanied with gushes of blood, and with pelvic pain coincident with the above symptoms of pregnancy. Pains are often very severe, with marked tenderness within the pelvis. Such symptoms are highly suggestive. (3) There is the presence of a pelvic tumor characterized as a tense cyst, sensitive to the touch, actively pulsating. This tumor has a steady and progressive growth. In the first two months it has the size of a pigeon's egg; in the third month it has the size of a hen's egg; in the fourth month it has the size of two fists. (4) The os uteri is patulous; the uterus is displaced, but is slightly enlarged and empty. (5) Symptoms No. 2 may be absent until the end of the third month, when suddenly they become severe, with spasmodic pains, followed by the general symptoms of collapse. (6) Expulsion of the decidua, in part or whole. Nos. 1 and 2 are *presumptive signs;* Nos. 3 and 4 are *probable signs;* Nos. 5 and 6 are *positive signs.*" (*American Text-Book of Obstetries.*)

8. RIGIDITY OF THE OS may be due to neurotic conditions, to early rupture of the bag of waters, to ineffective uterine contractions, to premature onset of labor, to constipation, to scars on cervix; it is not unusual in elderly primiparæ. *Treatment:* This consists in administering hot vaginal douches; giving chloral, or a narcotic; or the administration of an anesthetic and forcibly dilating the os and delivery by forceps.

9. *Treatment of placenta prævia, at term:* (1) Introduce one or two fingers within the os (the hand being in the vagina) and dissect the placenta from the uterine wall for about three inches from the os uteri in all directions, pushing it to one side if necessary. (2) Rupture the membranes, and if there is an unfavorable presentation turn the child and make the breech engage in the os; or, if the head presents forceps may be used if speedy delivery is necessary. The strength of the woman is then the main point to be cared for, and if in a reasonable time the uterus seems to be incompetent, the child may be delivered by art. In some cases of central placenta prævia, where rapid delivery is required, cesarean section may give good results for mother and child. (Landis' *Obstetrics.*)

10. *Possible complications of twin labor* are: Compound presentations, malpresentations, twisting or coiling of the umbilical cords, locking of the two heads, or locking of one fetus with the other. Compound presentations or malpresentations may require version or forceps or manipulation; coiling of cords requires ligation of cord in two places and cutting the same between ligatures, followed by rapid delivery. Locking of the heads generally requires craniotomy of the second child, with forceps delivery of the first, and subsequent extraction of the body of the second child.

SURGERY.

1. The operation for phimosis is circumcision. "Asepticize the parts. Grasp the foreskin and the mucous membrane with two forceps, draw the prepuce forward, catch the skin (at the point it is desired to cut) horizontally between the arms of the handle of a pair of scissors, and cut off the redundant prepuce. Retrench the excess of mucous membrane by cutting around with scissors one-quarter of an inch from the glans, stitch the skin to the mucous membrane with catgut, and dress with sterile gauze." (Da Costa's *Surgery.*)

2. Anorexia, vomiting, vertigo, headache, slow pulse, Cheyne-Stokes respiration, epileptiform convulsions, apoplectiform attacks, pyschic disturbances, muscular twitchings, choked disc, optic neuritis, and various focal symptoms.

3. *Tracheotomy.* (The high operation.) "The patient is placed on the back with a narrow pillow under the neck. Chloroform or cocaine can be used as anesthetics. An incision, one and a half inches long, is made downward from the cricoid cartilage, keeping strictly in the mid-line. The incision is deepened till the tracheal rings and isthmus are exposed. Enlarged veins give trouble during this stage if there is dyspnea. A director-hood is thrust into the trachea, and the point of a knife is slid along the groove to open the trachea from below upward. The patient is allowed to cough for a few minutes while the wound is kept open with dilating forceps; then the tube is tied in" (*Aids to Surgery.*)

4. "In the treatment of compound fractures the main object is to render the wound aseptic and to give efficient exit to the discharges. For this purpose the patient should in all cases be anesthetized, the limb shaved and thoroughly purified, and the wound enlarged and thoroughly washed out with some reliable antiseptic. It may be advisable to excise torn and dirty fragments of skin, muscle and tendon, especially when dirt has been ground into them. Loose fragments of bone are removed and portions denuded of their periosteum may be taken away lest necrosis should ensue; where fragments retain any considerable connection with the soft parts they may be left without fear. When a sharp end of one of the fragments is protruding through a small opening in the skin it is first purified thoroughly before attempting its reduction and then replaced, after enlarging the wound in the skin, or a portion sawn off. Hemorrhage is dealt with in the usual way, and the fragments are placed as nearly as possible in their normal position. If the fragments can be brought ac-

curately into position it is well to fix them by some mechanical appliance; but where the ends of the bone are much comminuted the small portions must be arranged in position as well as possible, and no attempt made to wire them. A good-sized drainage-tube is inserted, and, if need be, counter-openings are made; the external wound is closed or not, according to circumstances, and dressed, and suitable splints are then applied. Under such a régime the majority of cases do well. Immovable apparatus may be used after a time, windows being left in the plaster casing to allow wounds to be dressed." (Rose and Carless' *Manual of Surgery.*)

5. *Re-amputation* may be necessary when the stump shows signs of malignant disease or gangrene, in some cases of conical stump and severe neuralgia of the stump.

6. *Salpingectomy* is indicated in purulent salpingitis, the symptoms of which are as follows: A dragging sensation in the neighborhood of the affected tube; colicky pain, which is increased on exertion or even on standing; abdominal tenderness; menstrual disorders, as amenorrhea, metrorrhagia, dysmenorrhea, menorrhagia; dyspareunia; there may be septic symptoms and peritonitis; sterility generally ensues. On examination there will be found a fullness in Douglas' pouch and one or both lateral fornices; in these latter will be felt either the tubes, distorted and possibly adherent, or a sausage-shaped tumor, which is very painful; the uterus is retroverted or retroflexed, and may be bound down by adhesions; there may be an intermittent expulsion of pus, accompanied and preceded by a burning pelvic pain. There will be a leucocytosis.

The treatment of the acute form consists in rest in bed, free purgation with Rochelle salt (5i every hour) hot vaginal douches, and hot applications to the abdomen. If the symptoms become more severe celiotomy is indicated. The chronic form may be treated during the menstrual period by rest in bed, free purgation, hot vaginal douches; local applications of iodine to the cervix and vaginal vaults, and glycerin tampons. If these measures fail removal of the tube and ovary and replacing the retroverted uterus, etc., are necessary.

7. Many operations are practised, but Bassini's is the most useful. An incision, 2½ inches long, is made over the inguinal canal, exposing the structures of the cord and the external oblique. The external oblique fibers are split from the apex of the external ring to expose the canal. The sac is found, opened, emptied of its contents, and isolated from the structures of the cord up to the internal ring. If the hernia is irreducible, the intestine is freed and returned to the abdomen, omentum being ligatured and removed. The neck of the sac is then transfixed and tied with silk, and the fundus removed. The stump returns to the abdomen, three of four stitches are then passed through the conjoined tendon and arched fibers of the internal oblique and transversalis muscles above, and the deep part of Poupart's ligament below. These are tied behind the cord. The external oblique is then sutured in front of the cord, leaving just sufficient opening for it to pass through without pressure. The skin is then closed by a continuous stitch. The patient should be kept in bed for three weeks, and should not exert himself for at least six weeks. If the wound has suppurated, or if the case is one in which the abdominal muscles are weak, it is advisable that a light truss should be worn afterward for six months." (From *Aids to Surgery.*)

8. In Sedillot's "method of *amputation of the leg* the point of the knife is entered a finger's breadth external to the spine of the tibia and carried outward, grazing the fibula, and is brought out as far as possible to the inner side; a flap three or four inches in length is then cut from within outward; the extremities of the incision are next united by an incision across the inner side of the limb, involving the skin only; any remaining muscular tissue is next divided and the bones are sawed. The long external flap is then brought over the ends of the bones and fastened to the edges of the incision on the inner side of the limb. Ashhurst modified this operation by cutting the long external flap from without inward, and made also a short internal flap in the same manner. By either method the resulting stump is a good one, with the ends of the bones covered by the tissues of the external flap." (Wharton's *Minor Surgery.*)

9. (1) *Intercondyloid fracture* (T-shaped, or Y-shaped). This requires complete extension on a straight splint for three weeks, followed by passive motion; and then an internal angular splint for two weeks. (2) *Fracture of the olecranon process.* If there is very little displacement, a broad strip of adhesive plaster should be placed around the lower third of the arm. If there is much displacement the arm should be extended moderately, and a splint extending from axilla to finger tips applied anteriorly. (3) *Fracture of the external condyle.* This requires an internal angular splint; or the elbow must be flexed and fixed in this position and the arm placed in a sling so arranged as to support the elbow. This must be continued for a month or more.

10. The *treatment of carbuncle* is excision in those cases in which the carbuncle is favorably situated; the wound is allowed to granulate under antiseptic dressings. In other cases the honeycombed mass should be opened freely by crucial incisions, and as much of the necrotic tissue as possible removed by forceps and scissors. The wound should then be disinfected with peroxide of hydrogen and bichlorid of mercury solution, 1 to 1,000, and dressed with warm antiseptic fomentations. The constitutional treatment is that of sepsis. (From Stewart's *Surgery.*)

HYGIENE.

Malaria is transmitted through the bite of an infected mosquito (*anopheles*). Individuals should use mosquito netting round their beds and wire gauze in doors and windows, so as to keep out the mosquitos as much as possible. All pools, stagnant water, etc., where mosquitos may breed, should be removed. All mosquitos, larvæ, etc., should be destroyed as far as possible. By staying indoors during dusk and darkness, opportunities for infection may be avoided. Occasional fumigation with formaldehyde or sulphur is also efficacious.

2. In *acute rheumatism*, the patient must be kept in bed; some advise his lying between blankets; he should wear flannel; the room should be airy, well ventilated but free from draughts. Milk, either alone or modified, should form the basis of the diet; plenty of water should be taken. Light broths, soups, vegetables and fruits are allowed; meats, highly seasoned foods, alcohol, tea and coffee should be used very sparingly or not at all.

3. Where there is no sewerage system a privy vault may be used.

A sanitary rural privy consists of a "small watertight pit, not drained but roofed over to exclude rain, and so arranged that the excreta and ashes become thoroughly mixed. For this purpose either the ashes must be thrown in through the closet seat, which may be hinged so as to be lifted *en masse*, or else a "shoot" or sloping slab must conduct one or the other to a common point. The floor should be smooth, and raised a few inches above the level of the adjoining ground.

"The contents ought to be removed at fixed short intervals, and the work should be done at night or early in the morning so as to minimize the nuisance." (Whitlegge and Newman.)

4. The patient must be isolated; no one but the physician and nurse must enter the room; the physician should put on a large washable gown when he goes in, and remove it on leaving, at the same time washing his hands in a disinfectant; the nurse, when she leaves the sick room should also remove her clothes and put on others, at the same time disinfecting herself. Special care must be taken during the period of desquamation. At the termination of the disease everything should be disinfected; toys, and books, etc., are better burned.

5. The patient should be duly impressed with the communicability of his disease; he should be particularly warned about the disposal of sputum, the use of handkerchiefs, etc.; he should cover his face when sneezing or coughing; kissing should be prohibited. Rooms should be well ventilated, and frequently cleansed. Clothes and bedclothes should be boiled or disinfected before being sent to the laundry.

The Action of the X-Rays in Leucemia.—A. David and R. Desplats state that in studying this subject one is obliged to take account of the destructive action of the *x*-rays in large doses as well as of their stimulating action in small doses. The former action is not consistent with what has been observed by the authors and by others in the blood and tissue changes occurring in leucemia as the result of the action of the *x*-rays. These changes are to be explained rather on the basis of the stimulating action of the *x*-rays. The spleen and the hemopoietic organs are stimulated so far as their deficient functions are concerned, particularly the leucocyte-destroying and hemopoietic functions. This stimulation is proportional to the dose of the *x*-rays and to the functional capacity of the tissues subjected to the action of the rays. This conception does not contradict the theory that leucolysins are present in the circulating blood. But one may regard these leucolysins as the products of secretion of macrophages emanating from the hemopoietic organs.—*Archives d'Eléctricité Médicale.*

Books Received.

The MEDICAL RECORD *is pleased to receive all new publications which may be sent to it, and an acknowledgment will promptly be made of their receipt under this heading, but it must be with the distinct understanding that it is under no obligation to notice or review any publication received by it which in the judgment of its editor will not be of interest to its readers.*

TREPANATION NEOLITHIQUE, TRÉPANATION PRE-COLOMBIENNE, TRÉPANATION DES KABYLES, TRÉPANATION TRADITIONELLE. By Dr. Lucas Championniere. 131 pages, with 32 illustrations; paper. G. Steinheil, Publisher, Paris.

ARTERIOSCLEROSIS. By LOUIS M. WARFIELD, A.B., M.D. 220 pages; illustrated; cloth; price $2.50. C. V. Mosby Company, Publishers, St. Louis.

PHILADELPHIA GENERAL HOSPITAL REPORTS. Vol. VIII; 1910. Edited by David Riesman, M.D. 357 pages; cloth.

METROPOLITAN WATER AND SEWERAGE BOARD. Eleventh Annual Report. December 31, 1911. 244 pages; cloth. Metropolitan Water and Sewerage Board, Publishers, Boston.

LES PRODUITS BIOLOGIQUES MÉDICINAUX. By P. BYLA and R. DELAUNAY. 466 pages; cloth. Société de Editions Scientifiques et Medicales, Publishers, Paris.

ELECTRICITY IN GYNECOLOGY. By May Cushman Rice, M.D. 159 pages; illustrated; cloth. L. I. Laing & Co., Publishers, Chicago.

DIE GROSSSTADT ARBEIT UND IHRE HYGIENE. By Dr. B. Laquer. Vol. IX. No. 8. 30 pages; paper; price 1 M. Carl Marhold, Publisher, Halle.

KLINIK FÜR PSYCHISCHE UND NERVÖSE KRANKHEITEN. Vol. VII. No. 2. By Robert Sommer. 192 pages; illustrated; paper; price 3 M. Carl Marhold, Publisher, Halle.

DER GERICHTLICH-MEDIZINISCHE NACHWEIS DER WICHTIGSTEN GIFTE. By Prof. Dr. Hermann Hildebrant. 70 pages; paper; price 2 M. August Hirschwald, Publisher, Berlin.

CEREBELLAR FUNCTIONS. By Dr. André Thomas. 223 pages; illustrated; paper; price $3.00. The Journal of Nervous and Mental Disease Publishing Company, Publishers, New York.

FIFTH SCIENTIFIC REPORT ON THE INVESTIGATIONS OF THE IMPERIAL CANCER RESEARCH FUND. By E. F. Bashford. 94 pages; illustrated; paper; price 5s. Taylor & Francis, Publishers, London.

PRACTICAL EUGENICS. By WILLIAM J. ROBINSON, M.D. 93 pages; cloth; price 50 cents. The Critic and Guide Company, Publishers, New York.

DEUTSCHE ZEITSCHRIFT FUR CHIRURGIE. Festschrift. By Prof. TH. KOCHER. 818 pages; illustrated; paper. F. C. Vogel, Publisher, Leipzig.

THROMBOSER OG EMBOLIER EFTER APPENDICIT-OPERATIONER. By P. BULL. 92 pages; paper. Steen'ske Bogtrykkeri, Publisher, Kristiania.

SEXUAL IMPOTENCE. 4th Edition. By VICTOR G. VECKI, M.D. 394 pages; cloth; price $2.25 net. W. B. Saunders Company, Publishers, Philadelphia.

SYMPTOMS AND THEIR INTERPRETATION. By JAMES MACKENZIE, M.D., LL.D. 304 pages; cloth; price 7/10. Shaw & Sons, Publishers, London.

PELLAGRA. By STEWART R. ROBERTS, S.M., M.D. 272 pages; illustrated with 81 special engravings and colored frontispiece; cloth; price $2.50. C. V. Mosby Company, Publishers, St. Louis.

SURGICAL AFTER-TREATMENT. Second Edition. By L. R. G. CRANDON, M.D. 831 pages; with 264 original illustrations; cloth; price $6.00 net. W. B. Saunders Company, Publishers, Philadelphia.

COLLECTED PAPERS BY THE STAFF OF ST. MARY'S HOSPITAL (MAYO CLINIC). 603 pages; illustrated; cloth; price $5.50 net. W. B. Saunders Company, Publishers, Philadelphia.

BEITRÄGE ZUR CHEMOTHERAPIE DER TUBERKULOSE. By Prof. Dr. GRAFIN VON LINDEN, Prof. Dr. E. MEISSEN, and Dr. A. STRAUSS. 31 pages; illustrated; paper; price 1.50 M.

ENZYMES. By OTTO COHNHEIM. 170 pages; cloth. John Wiley & Sons, Publishers, New York.

ALBUM OF THE WATERING PLACE OF CARLSBAD. Photographs by H. LIEBSCH. Issued by the Municipal Council of Carlsbad and the National Society for Foreign Travel in German Bohemia.

A CLINICAL STUDY OF ACUTE POLIOMYELITIS. By FRANCIS W. PEABODY, M.D., GEORGE DRAPER, M.D., and A. R. DOCHEZ, M.D. 137 pages and 13 plates; paper. The Rockefeller Institute for Medical Research, Publishers, New York.

ANNUAL REPORT OF THE MEDICAL OFFICER OF HEALTH, CITY AND COUNTY OF BRISTOL. 102 pages; paper.

A TEXT-BOOK OF GYNECOLOGY. By WILLIAM SISSON GARDNER, M.D. 286 pages; with 138 illustrations; cloth. D. Appleton & Company, Publishers, New York.

THE PRACTITIONER'S ENCYCLOPEDIA OF MEDICINE AND SURGERY. By J. KEOGH MURPHY, M.C., F.R.C.S. 1,423 pages; illustrated; price, cloth, $7.00; half leather, $8.00. Oxford University Press, Publishers, New York.

FURTHER RESEARCHES INTO INDUCED CELL REPRODUCTION AND CANCER. Vol. II. By H. C. Ross, M.R.C.S., L.R.C.P. 125 pages; illustrated; cloth; price $1.00 net. P. Blakiston Son & Co, Publishers, Philadelphia.

THE KALLIKAK FAMILY. By HENRY HERBERT GODDARD, Ph.D. 121 pages; illustrated; cloth; price $1.50 net. The Macmillan Company, Publishers, New York.

THE WASSERMANN REACTION. By JOHN W. MARCHILDON, B.S., M.D. 103 pages; illustrated; cloth; price $1.50. C. V. Mosby Company, Publishers, St. Louis.

A TEXT-BOOK OF HUMAN PHYSIOLOGY. By ALBERT P. BRUBAKER, A.M., M.D. Fourth Edition. 730 pages, with one colored plate and 377 illustrations; cloth; price $3.00 net. P. Blakiston's Son & Co., Publishers, Philadelphia.

TRANSACTIONS OF THE SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION. Vol. XXIV. By W. D. HAGGARD, M.D. 630 pages; illustrated; cloth. Southern Surgical and Gynecological Association, Publishers.

STUDIES FROM THE ROCKEFELLER INSTITUTE FOR MEDICAL RESEARCH. Vol. XV. 295 pages; illustrated; paper. The Rockefeller Institute for Medical Research, Publishers, New York.

MIND CURE AND OTHER ESSAYS. By PHILIP ZENNER, M.D. 157 pages; cloth; price $1.25 net. Stewart & Kidd Co., Publishers, Cincinnati.

PROMPT AID TO THE INJURED. By ALVAH H. DOTY, M.D. 220 pages; cloth; price $1.50. D. Appleton & Co, Publishers, New York.

MANUAL PRATIQUE DE KINÉSITHÉRAPIE. By H. STAPFER. 226 pages, with 12 illustrations; paper; price 4 francs Felix Alcan, Publisher, Paris.

INSOMNIA. By SIR JAMES SAWYER. Second Edition. 107 pages; cloth; price 6d. Cornish Bros., Publishers, Birmingham.

DIE BEHANDLUNG DER KRANKHEITEN DER BEHAARTEN KOPFHAUT. By K. HERXHEIMER and K. ALTMANN. 52 pages; paper; price 1.50 M. Carl Marhold, Publisher, Halle.

THE EXTRA PHARMACOPŒIA. By W. HARRISON MARTINDALE, Ph.D., F.C.S and W. WYNN WESTCOTT, M.B. (Lond.), D.P.H. Vol. I. Fifteenth Edition. 1114 pages; paper; price 14/ net. H. K. Lewis, Publisher, London.

THE EXTRA PHARMACOPŒIA. By W. HARRISON MARTINDALE, Ph.D, F.C.S. and W. WYNN WESTCOTT, M.B. (Lond.), D.P.H. Vol. II. Fifteenth Edition. 370 pages; paper; price 7/ net. H. K. Lewis, Publisher, London.

ELEMENTS OF PRACTICAL MEDICINE. By ALFRED H CARTER, M.D., M.Sc. Tenth Edition. 683 pages; cloth; price 9/ net. H. K. Lewis, Publisher, London.

FORSCHUNGEN UND ERFAHRUNGEN 1880-1910. By SIR FELIX SEMON, K.C.V.O. Vol. I. 668 pages; illustrated; paper; price 32 M. for two volumes. August Hirschwald, Publisher, Berlin.

FORSCHUNGEN UND ERFAHRUNGEN 1880-1910. By SIR FELIX SEMON, K.C.V.O. Vol. II. 600 pages; illustrated; paper; price 32 M. for two volumes. August Hirschwald, Publisher, Berlin.

ROBERT KOCH. By Dr. KARL WEZEL. 148 pages; paper; price 3.60 M. August Hirschwald, Publisher, Berlin.

LEBENSERINNERUNGEN VON FRANZ KONIG. By O. HILDEBRAND. 155 pages; paper; price 2 M. August Hirschwald, Publisher, Berlin.

HANDBUCH DER SPEZIELLEN CHIRURGIE DES OHRES UND DER OBEREN LUFTWEGE. Vol. III. No. 3/4. By Drs. L. KATZ, H. PREYSING, and F. BLUMENFELD. 448 pages; illustrated; paper; price 14 M. Curt Kabitzsch, Publisher, Wurzburg.

KOHLEHYDRATKUREN BEI DIABETES. By Dr. MAX KLOTZ. 286 pages; paper; price 1.70 M. Curt Kabitzsch, Publisher, Wurzburg.

MANUAL OF HUMAN EMBRYOLOGY. Edited by FRANZ KEIBEL and FRANKLIN P. MALL. Vol. II. 1032 pages, with 658 illustrations; cloth; price $10.00. J. B. Lippincott Company, Publishers, Philadelphia.

A DOCTOR'S TABLE TALK. By JAMES G. MUMFORD, M.D. 257 pages; cloth; price $1.25 net. Houghton Mifflin Company, Publishers, Boston and New York.

THE BUSINESS OF MINING. By ARTHUR J. HOSKIN, M.E. 224 pages, with 16 full-page illustrations and 1 chart; cloth. J. B. Lippincott Co., Publishers, Philadelphia.

DAS KLIMA VON SCHOMBERG. By Prof. Dr. MEYER and L. PFEIFFER and Dr. G. SCHRODER. 140 pages; paper. Curt Kabitzsch, Publisher, Würzburg.

Miscellany.

Gil Blas on High Living.—B. M. Randolph presents an extract from *Gil Blas,* the masterpiece of Lesage, the French novelist of the eighteenth century. The latter depicted in Dr. Sangrado a type both comic and serious, whose advice on the results of high living is practically in accord with present-day teachings, particularly in reference to the production of arteriosclerosis and premature senility.

"Away I went, therefore, for Doctor Sangrado," says *Gil Blas,* "and brought him with me, a tall, withered, wan executioner of the sisters three, who had done all their justice for at least these forty years. This learned forerunner of the undertaker had an aspect suited to his office: his words were weighed to a scruple; and his jargon sounded grand in the ears of the uninitiated. His arguments were mathematical demonstrations; and his opinions had the merit of originality. After studying my master's symptoms, he began with medical solemnity: 'The question here is to remedy an obstructed perspiration. Ordinary practitioners, in this case, would follow the old routine of salines, diuretics, volatile salts, sulphur, and mercury; but purges and sudorifics are a deadly practice. Chemical preparations are edged tools in the hands of the ignorant. My methods are more simple, and more efficacious.' 'What is your usual diet?' 'I live pretty much upon soups,' replied the canon, 'and eat my meat with a good deal of gravy.' 'Soups and gravy!' exclaimed the petrified doctor. 'Upon my word, it is no wonder you are ill. High living is a poisoned bait; a trap set by sensuality to cut short the days of wretched man. We must have done with pampering our appetites; the more insipid, the more wholesome. The human blood is not a gravy. Why, then, you must give it such a nourishment as will assimilate with the particles of which it is composed. You drink wine, I warrant you?' 'Yes,' said the licentiate, 'but diluted.' 'Oh, finely diluted, I dare say,' rejoined the physician. 'This is licentiousness with a vengeance. A frightful course of feeding. Why, you ought to have died years ago. How old are you?' 'I am in my sixty-ninth year,' replied the canon. 'So I thought,' quoth the practitioner; 'a premature old age is always the consequence of intemperance. If you had only drunk clear water all your life, and had been contented with plain food, boiled apples for instance, you would not have been a martyr to the gout, and your limbs would have performed their functions with lubricity. But I do not despair of setting you on your legs again, provided you give yourself up to my management.' The licentiate promised to be upon his good behavior."—*Old Dominion Journal of Medicine and Surgery.*

The Collection of Disputed Claims.—T. F. Reilly notes that in most States claims for services must be filed within two years. The physician must prove that he has been employed and that his services were accepted. Parents and guardians are responsible for their children under age. One must show in court the date of visits, and the amount should be charged up each day under the visit mark. This is not always insisted upon, but it is a safe thing to do. When the patient has died and has left an estate the physician should file the bill with the executors, who will arrange for its payment. If the patient had no relatives or executors the claim should be filed with the public administrator, who will pay the physician if there is anything left after the undertaker's bill is paid. Employers are not responsible for service rendered to employees, unless they personally order it. When the physician has attended a patient through his last illness, and after death the friends come to the doctor with an insurance certificate to be filled out, the latter should make up his mind if the friends are likely to pay the bill. If not he should take the certificate to the undertaker and both of them can arrange to be paid as soon as the company pays the claim. In some instances the physician can find out from the company the precise time when they will settle and he can then be present. "No patient is too poor to treat. Do not send the poor patient or any other one to a dispensary in order that he may save the expense. Get the experience and the gratitude yourself. No patient who goes to the hospital or a dispensary ever afterward has the same regard or respect for you as before, because there the personal worship or idolatry is lost, and he realizes that other men are just as clever as you are, or perhaps other patients that he meets will convince him of the superiority of some one else. Whatever the reason may be, he never has quite the same confidence in you. Once a patient gets free treatment he is like the rest of us who, when we once get free tickets for a theater or railroad journey, never afterward feel like paying for similar services. If you can do absolutely nothing for the patient, send him to one of your young friends who is struggling to get experience in that particular specialty. He will be glad to treat him for the experience, or for a very small fee. The patient will appreciate it as a favor."—*New York Medical Journal,* October 26, 1912.

The Physician in World Politics.—One of the most noteworthy features in the present era of political reconstruction is the increasing prominence of the physician as a leading figure in world politics. This has been exemplified in the recent upheaval in China and is evidenced in the present work of reconstruction in Portugal. In both cases it seems to be recognized that the physician's experience with the ills of humanity gives him a peculiar fitness for larger service to the State. In Portugal, not only were the foremost revolutionary leaders physicians, as were the principal officers of the provisional government, but the present leaders of the most influential political parties are medical men. The former Minister of Justice of the Provisional Government of Portugal, Dr. Affonso Costa, now heads the Democratic party which includes the Socialist and laboring groups. This party includes half of the senators and deputies in the Portuguese Parliament. Dr. Costa is the author of the Church and State Separation Law and other measures. Dr. Antonio José d'Almeida, another medical man, is chief of the Evolutionists, the conservative element in Portugal. Dr. Almeida controls the "extreme right," as distinguished from the extreme left, or ultra-radical Democratic party headed by Dr. Costa. The Unionist party, a compromise group halfway between the extreme radicals and the ultra-conservatives, is headed by Dr. Brito Camacho. These last two parties, with the Independents, the political organization of the secret society, "Carbonario," comprise the conservative element, which is at present in control. The Portuguese Cabinet, however, is a coalition, and includes three Democrats, two Evolutionists, and two Unionists.—*Medical Review of Reviews,* September, 1912.

Medical Record

A Weekly Journal of Medicine and Surgery

Vol. 82, No. 22.
Whole No. 2195.

NEW YORK, NOVEMBER 30, 1912.

$5.00 Per Annum.
Single Copies, 15c.

Original Articles.

THE PSYCHOLOGY OF THE GAMBLING HABIT.

A STUDY OF SUSPENSE IN GAMING, THE DRAMA, AND THE EXPERIMENTAL SCIENCES.

By J. LEONARD CORNING, M.D., LL.D.

NEW YORK.

THE spell wrought in the mind by hazard is as old as humanity itself. Whether called into being by battle, the stock market, or the roulette table, the enchantment remains the same. When asked what were his emotions on the eve of an impending battle, an officer of distinction replied that they were "Precisely the same as those I used to feel when laying a tremendous stake." The essential similarity between the feelings aroused by the more strenuous phases of stock speculation and those called forth by games of hazard has been frequently pointed out. Indeed the notion has long since obtained a footing in the idiom of the street. Games of hazard seem to be indigenous among all races. Neither savagery nor civilization has been proof against their wizardry. In India, Egypt, China, Africa; in Greece, Rome, Germany, and England; in France, Russia, and even the United States, games of chance have never lacked for votaries.

At various times, and under incitement more or less obscure, gambling has spread like a contagious insanity throughout an entire country, infecting all, regardless of class, sex or condition. During the advanced decline of the Roman Empire, gaming was universal among rich and poor alike. At various times, extraordinary exacerbations of the passion have occurred among the French; and in Germany, both in ancient and modern times, gambling, though less universally indulged in, has been widely practised. In England the propensity is traceable from the most ancient times to our own day. The stakes among the wealthy were frequently enormous; while among the poor the amounts risked, though actually less, were proportionately greater. That the moral damage to individuals and to the community as a whole was great in all countries, is attested by numerous reliable commentators, some of whom have been at some pains to point out the analogous evils following outbreaks of unbridled speculation. Nor were the judicial and legislative authorities lacking in appreciation of the malign influence exerted upon society by an excessive gratification and a useless and degrading application of the instinctive love of hazard. Laws of the most stringent character were enacted against gaming both in England and the more important countries of continental Europe; but the fact that these laws have been powerless to stamp out the practice is the best proof of how firmly the propensity is rooted in the instinctive life of the race.

Not much has been written on the purely psychological phases of gambling. Most of the literature, widely scattered and some of it difficult to procure, deals largely with the historical and anecdotal features of the question. Neither space nor the purposes of the present writing permit an extensive gleaning from these sources. Enough—if we are to credit the chronicles—that men have always disclosed a willingness to wager almost anything at the gaming table; and that women—so runs the story—have lagged little if at all behind their male companions, staking, when hard pressed, even the more essential parts of their apparel on the turn of a card or a throw of the dice.

What is the underlying psychology of phenomena of this kind? Certainly the question is by no means answered by assuming the desire for gain with a minimum of effort to be the sole motive, as is commonly though not invariably done. Avarice no doubt is constitutional, as it were, with some persons, and this quite irrespective of their economic situation in the world. To such individuals the prospect of laying hold of their neighbor's possessions even at the risk of parting with their own, involves, to put it gently, a unique and considerable fascination. It was of these—of their sordid faces, of their covetous gestures, of their glowering, avid eyes—it was of these gentry, no doubt, that Aristotle was thinking when he referred to gamesters as no better than thieves. Were these and their congeners the only victims of the caprice of hazard, society could perhaps afford to let them go their way unmoved. Unfortunately, there are other specimens far from ignoble, many of them, though for the most part not less vehemently infatuated, who swarm about the gaming table.

What—being in many instances neither predatory nor yet very poor—what urges these people to the gaming table, and what keeps them there? Surely inordinate greed is not responsible for their coming, nor can it be held to be the sorcery which enchains them. Where, then, lies the witchery? Some writers have found the explanation in the excitement caused by the alternation of hope and fear. Nor can it be denied that this alternation is the important factor in games of hazard. Yet it is necessary to remember that still other forces are at work; that, in a word, we have to do not only with hope, but fruition; not only with fear, but with loss and sometimes despair. Here the affective contrast is as wide as could well be imagined. And, as if this were not enough, the widely disparate moods, obedient to the capriciousness of chance, are, as already intimated, rapidly alternated, victory following defeat and vice versa, so that a new composite erethism is engendered, an erethism which knows neither respite nor repose. To help to an appreciation of what is here implied, the writer ventures to introduce a diagram. (Fig. I.)

Is there any similarity in the manner of its pro-

duction between suspense as it is met with in gaming, and suspense as it occurs in certain of the Arts —the Drama, for instance? A moment's consideration will show that in certain respects a resemblance of this kind is certainly traceable. Take melodrama—the old kind—replete as it is with

Fig. 1.—Diagram showing suspense curves in gambling. Note that the height is somewhat greater than the depth, and that there is no logical termination, the erethism continuing after cessation of play.

thrills and "gory interjections." Here plot is everything, the delineation of character but a subordinate concern of the playwright. The sympathetic element represented, let us say, by hero and heroine, and the antipathetic by the villain, are aggressively apparent. There are no half people; all are either devils or angels. The hero desires the heroine in marriage; the villain feels the same way—entrance of the exciting force. Were the hero, however, to realize his wish too easily or too quickly, there would be little drama and less suspense. Obstacles, or subsidiary actions (machinations of the villain or his friends, etc.), are accordingly introduced. Thus by play and counter-play the action of the play is retarded, suspense is maintained, and excitement augmented. Neither the hero nor the villain is allowed the upper hand for long. For a space, the hero seems about to triumph; then down he goes, and up goes the villain. And so the process is repeated and the play progresses, arousing and maintaining in the spectator a kind of palpitating suspense—a sort of see-saw of uncertainty.[1] Such tension, however, nature being what it is, cannot be indefinitely maintained; and hence in due course the hero runs away with the heroine (climax); the villain being unable to catch him, is himself caught and comfortably hanged; while the hero and heroine, as befits the truly virtuous, are duly amalgamated (dénouement).

In an entertaining little book on the elements of dramatic construction, published more than twenty years ago,[2] Hennequin observes that "The most important means of arousing interest (in the drama) is suspense. Keep a listener in doubt as to what is coming ,and he cannot help but listen. Suspense is the nervous system of the drama. In some form or another it must exist throughout the entire progress of the story. At various points of the story, generally at the close of each act, it may be partially relieved; but it must always be done in such a way as to give rise to new suspense, or to leave one or two particulars still unsettled. Not until the last moment of the story should every item of doubt be cleared away."[3]

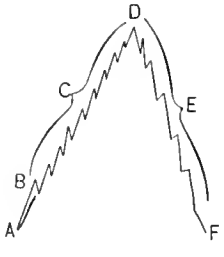


Fig. 2.—Diagram showing suspense in a play with a single major climax. A, beginning of the action; AB, exposition; C, growth (play and counter-play) suspense; D, climax; E, fall; F, dénouement.

The appended diagrams (Figs. 2, 3, 4) show the management of suspense in plays of one or more climaxes.

While the morbid craving for a maximum of excitement with a minimum of effort, confirmed as it is by habit, plays a conspicuous—nay, the chief

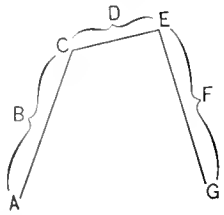


Fig. 3.—Diagram showing suspense in a play with two climaxes. A, beginning of play; B, D, suspense (B, play and counter-play to first climax C; D, play and counter-play to second climax, E); F, fall; G, close.

—rôle in the bewitchment of the gamester, it can scarcely be denied that abnormally emotionalized ideas of success exert at least a contributory influence. Hence the suspense curve of gambling is somewhat greater in height than in depth. (The writer begs to refer once more to Fig. I.) Confirmation of this view is afforded by the fatuous attempts of those who play for low as well as high stakes to establish a "system" or theory of the game whereby success shall be rendered more certain. To the average outsider, untrammeled by the fascination of gaming and alive to the impossibility of fore-reckoning the infinite vagaries of hazard, their efforts seem to betoken a singular obliquity of mind. This tendency to rationalize where premises are quicksilver and logic thrown away is a characteristic peculiarity of the gamester. Thence arise quixotic feelings of confidence, intensified, perhaps, by various superstitions, of which gamesters are known to cherish a variety; and these in turn tend further to increase the height of the suspense curve.

Among such superstitions, "Rouge et Noire"[4] gives the following: "To turn your back on the moon when playing for money portends ill luck; to lend money is unlucky; to play on borrowed money is unlucky; playing with money first laid on the altar Christmas night is lucky; some gamblers believe that they can cheat luck by going from table to table or playing at certain intervals. . . . The approach or touch of a hunchback is held to be a sign of luck." Among savages, whose addiction to gaming has already been referred to, the belief in luck is apparently universal, and to gain its countenance they have recourse to philters, fasting, and

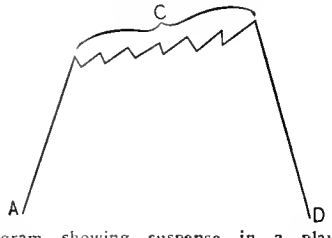


Fig. 4.—Diagram showing suspense in a play with several climaxes; A, beginning of play; C, succession of climaxes, arranged in rising gradation so that suspense is progressively increased; D, dénouement.

an astonishing variety of ceremonious cajoleries.

Of contributory effect in heightening excitement in the gamester should be mentioned the magnitude of the stake, and the influence of its loss or gain on his welfare and future destiny. The importance of this element is obvious, and has been accentuated

by even the most superficial writers on games of chance. Not so fully appreciated is the erethistic influence of a neurotic temperament. Over and above the predisposing rôle played by such a temperament in heightening the excitement of gaming, the present writer is convinced that to

FIG. 5.—Suspense curve in a series of experiments undertaken for the solution of a major problem. There is no progressive rise (in suspense), the only increase in height being at the close. Failure would entail a corresponding fall.

it is largely to be charged those more extreme manifestations of the gaming impulse that so frequently result in the permanent undoing of the subject and the humiliation and misery of his dependents. Still more disastrous is the craving when it develops in those already afflicted with some form of neurotic derangement. Danville and Sollier[5] have published two instances of this kind, in which the presence of a neuropathic element was easily made out. In the first, the impulse to play was comparable with an hysterical attack; in the second, with the morbid craving of dipsomania. Here, the passion to play assumes the dimensions of true mania; the motiveless, irresponsible, and at times furious excitement of the subject impressing even those without psychiatric knowledge as essentially insane. It may be noted in this connection, that the gaming habit is not infrequently associated with paranoid conditions, a fact overlooked or but slightly accentuated by most writers.

From this commentary we may pass to the consideration of a group of activities in which, while at times there is considerable suspense, great demands are made upon perception, reason, inductive and deductive, and imagination as well. Nowhere are these activities more in evidence than in the experimental sciences, including invention and, to some extent, original work in the domain of astronomy and the higher mathematics. Is there anything at all comparable with the suspense so characteristic of gaming and that met with in those who devote themselves to these disciplines? With due allowance for temperamental differences, and excluding for purposes of comparison those pursuits which, while they imply some power to observe, require a minimum of interpretative subtlety, it may be granted that a certain degree of analogy is really traceable. That a long period of brooding and experimentation undertaken for the solution of a considerable problem may at times be accompanied by a high degree of suspense, is abundantly attested by the history of discovery and invention. Obviously the importance of the problem; the success and failure of the individual experiments undertaken for the purpose of its solution, and the rapidity with which one experiment follows upon another, will largely determine not only the degree but, to an extent, the character of the emotional erethism. (Figs. 5 and 6.) But conceding this as a general statement, it is not to be forgotten that in a certain proportion of research work there will be time sufficient for more or less recovery from the excitement, pleasurable or painful, of each experimental venture; and time is an all-important element in the rehabilitation of the emotional mechanism. The suspense curve will, therefore, be undulating rather than abrupt.

It is precisely in this that the suspense of experimentation and invention differs so widely from that of gaming, in which so little time elapses between the separate coups that recovery, even to a limited degree, is impossible. Moreover, there is the further difference that in experimental work there is apt to be a definite conclusion; either the end is attained, or the problem is for the time being, or perhaps definitely, abandoned. A logical conclusion, as already pointed out, and consequently repose, is also attained in the drama; and there is besides a considerable lapse of time between the separate parts of the action. Nothing of the kind, of course, is possible in games of pure hazard; there is no logical sequence, neither are there any intermissions, and hence in the nature of things there can be no logical conclusion. That the inveterate gamester carries his excitement away from the table, has it with him in fact most of the time, is therefore hardly the riddle that it is popularly held to be. Still, the very admission that despite his losses he returns again and again, carries with it the suggestion of an addiction, a compelling force, a deranged mechanism; so that, recalling the physiology of the emotions, as we now understand it, one is inevitably moved by a desire to win to a conception, however provisional, of the morbid physiology implied by the habit of the gamester.

While in the present state of knowledge attempts in this direction can scarcely be expected to rise much above the level of tentative approximations; still, something, the writer is fain to believe, may be done to satisfy the desire to rationalize, and this without any very glaring violation of the canons of common sense. A glance at the opinions now prevailing regarding the physiology of the emotions will help in an attempt of this kind. Two principal theories, each having advocates more or less, should be considered. According to the first and older conception, the mind (brain) "feels" in a definite way immediately upon excitation, whether from without or within. Only subsequently does this "feeling" (emotion) manifest its presence by purely nervous phenomena (discharges). On the other hand, it is maintained, notably by James and Lange, that the body itself reacts primarily in a definite way to a given stimulus; that the mind becomes aware of this bodily perturbation ("feels it"), and that this feeling, whether of tension or relaxation, is the emotion. For, as James observes, "If we fancy some strong emotion, and then try to abstract from our consciousness of it all the feelings of its bodily symptoms, we find we have nothing left behind, no 'mind stuff,' out of which the emotions

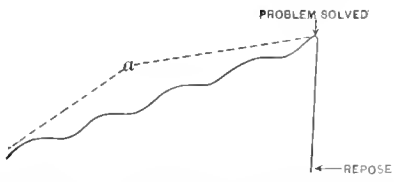


FIG. 6.—Suspense curve in a series of experiments, each of which eventuates in an obvious step towards solution. The progressive rise of the suspense curve is shown at a.

can be constituted, and that a cold and neutral state of intellectual perception is all that remains."[6]

If it be granted that the position of James and Lange is well taken, and in the writer's opinion it is open to fewer objections than any other, we may conceive the genesis of an emotion to be somewhat

as follows: A sensation, auditory, visual or what not, or a perception, or an idea, gives rise in the brain (cortex) to an impulse which is disseminated centrifugally to the motor apparatus. Muscular contraction ensues, and it is the sensations due to contraction of the muscles, transmitted to the sensorium by the centripetal system of nerves, to which vasomotor, visceral, and other sensations are added, that give rise to the emotion.[7]

Now, as already sufficiently accentuated, the emotions in gaming are aroused or rather racked in a unique and extreme fashion. That in time the affective functions, motor, vasomotor and sensory, must inevitably become erratic, disharmonized, seems a wholly warranted conclusion. Here, then, are all the psychoneural elements necessary to the establishment of addiction; and it is a matter of surprise to the writer that an implication so apparent should have been so widely overlooked.

From the foregoing considerations, it is easy to understand why those who are the chronic victims of the gaming habit are so little fitted for the routine that enters so largely into the activities of common life. This inefficiency of the gamester has long been recognized; and his restless, feverish nights, with their succeeding days of futile, maundering wistfulness, have provided texts for the diatribes of the moralists. Not much, in view of history and the practically universal love of hazard, can be accomplished by such fulminations. Nor has drastic legislation, however much it may have helped to mitigate it, sufficed to suppress the gaming evil. Of more promise, perhaps because more rational, would be a systematic attempt to spread abroad a knowledge of the essentially morbid nature of the gaming habit; while at the same time frankly recognizing the legitimacy of the love of hazard when properly applied, as in the building up of new industries, war, games of skill and the like. A considerable approval of the drama of the better sort should likewise be expressed, since through its mechanism both a logical progress and a logical ending are made possible, while at the same time suspenses is maintained without undue racking of the emotions.

While this is doubtless true enough, it is nevertheless not to be forgotten that however much the intellect and the imagination are concerned in the making of a play, its enjoyment by the spectator is relatively a passive one. Quite the opposite is true of the experimental sciences, the pursuit of which makes a constant demand upon the active resources of the mind. Here, too, as already intimated, there is suspense, but without those sharp alternations so characteristic of gaming. There is, moreover, the further merit of a possible enlightening or useful outcome, the consciousness of which cannot fail to bring its own meed of satisfaction. Unfortunately, though the present age has been aptly characterized as "the scientific age," science and invention are not for all; nor in view of the average make-up of human intelligence, are they ever likely to be so.

From the foregoing analysis, it may be fairly assumed that—

1. In its more extreme manifestation, the gambling habit may disclose many of the attributes of a true psychosis.

2. This is especially true of the habit as observed in neurotic individuals, or those in whom the psychotic impetus is enhanced by paranoid or hysterical coincidences.

3. While many persons are led by a desire for diversion to indulge from time to time in games of hazard, there is always more or less danger, especially in the case of idle, excitable, unbalanced persons, of the gradual establishment of addiction.

4. It is the rapid alternation of opposing emotions that provides the chief suspense and major excitement of gaming. Herein is likewise to be found the source of its chronic allurement. A contributory though subordinate enhancement of suspense is discernible in the stake.

5. The suspense curve in the drama is less sharp by far than in gaming. In other words, there are fewer alternations, and consequently there is less racking of the emotions in a given length of time in the former than in the latter.

6. Of original work in the experimental sciences, it may be confidently stated that while suspense is an ingredient far from insignificant, it is brought about not by rapid affective oscillations, not by an emotional riot of to-and-fro as in gaming, but by far more gentle undulations than even those met with in the drama.

7. Since the suspense in games of pure hazard is brought about in an arbitrary manner, without any noteworthy participation of the intellect; and since, moreover, habitual gaming tends to engender distaste and even to unfit its votaries for concentrated mental effort, the practice is to be condemned on psychopathological grounds, if for no other reason.

8. While the love of hazard appears as an indigenous and even highly useful quality in the history of the race, nothing is more certain than that from time immemorial it has been shunted, as in gaming, from its true sociological intent.

9. The gaming habit in its more exaggerated forms, especially when complicated by neuropathic adjuncts, is rather an affair of psychopathology than of morals.

10. Disssemination of knowledge regarding the essentially morbid nature of the gaming habit, coupled with a dispassionate and explicit account of its inroads on mental efficiency, should help, it would seem, to a rational prophylaxis.

Much has been said and written about the facial expression of the gamester, and not a little of this commentary has crept into fiction. Thus we hear of the "gambler's face," implying thereby a certain "hardness" of visage; a hardness which, however apparent, can nevertheless scarcely be regarded as an exclusive adjunct of those who habitually indulge in games of hazard. Still, it cannot be denied—and this is an interesting and revealing circumstance—it cannot be gainsaid that there is usually a vast difference in facial expression between those in whom suspense is brought about by the drama or the pursuit of the experimental sciences, and those in whom it is produced by gaming. And more striking, it may be observed parenthetically, than even this disparity, is the contrast in the expression of the face between those who gamble and those whose efforts are directed to literature and the arts.[8]

Facts of this kind are their own commentary.

REFERENCES.

1. For a more detailed account of how suspense is maintained in the drama, see "The Technique of the Drama," by W. T. Price, pp. 11, 34, 93, 94, 99, 122, 176. Brentanos, New York, 1897.

2. "The Art of Playwriting," by Alfred Hennequin, Ph.D., p.93. Houghton, Mifflin & Co., 1890.

3. "The essential nature of the drama," observes Freytag, "is conflict and suspense. The sooner these are evoked by means of the chief heroes themselves and given direction the better." "Technique of the Drama," by Gus-

tave Freytag, p. 109. Chicago, 1896. (Translation from the sixth German edition.)

4. "Gambling World," quoted by Clemens J. France in his excellent paper, "The Gambling Impulse," the *American Journal of Psychology*, Vol. XIII, p. 391. 1902.

5. *Revue Philosophique*, Vol. LXV, pp. 561-576. 1908.

6. "The Principles of Psychology," by William James, Vol. II, p. 451. 1907.

7. For an explicit account of the anatomical mechanism which is held in some quarters to subserve a purely emotional and expressional purpose, the writer ventures to refer to his paper, "The Diagnostic Significance of Abnormally Quick Fatigue (Apocamnosis) of the Orbicularis Oris Muscle," published in the MEDICAL RECORD, August 17, 1912.

8. A rather full list of the more important literature dealing with expression of the emotions will be found in the Introduction of Charles Darwin's "Expression of the Emotions in Men and Animals." London, 1872.

53 WEST THIRTY-EIGHTH STREET.

THE PRO AND CON OF MAINTENANCE OF THE RETRO-AURICULAR OPENING AFTER THE RADICAL MASTOID OPERATION.*

BY SEYMOUR OPPENHEIMER, M.D.,

NEW YORK.

IN the majority of cases of chronic suppuration of the middle ear associated with mastoid disease that require operation, no question arises as to the advisability of closing the retro-auricular incision, for the conditions present are such that it is to the best interests of the individual that this be done, but there are a certain number of cases associated with varied and often extensive pathological changes in the temporal bone, in which the question of maintaining an opening behind the auricle must remain debatable, and it is these infrequent cases that it is desired to discuss here.

Many German otologists seem to prefer the permanent posterior opening in nearly all instances of the radical operation, while a somewhat small number maintain drainage in this way for an indefinite period until the parts have become covered with healthy epidermis and no evidence of a recurrence of the suppuration is discoverable. Others endeavor to obtain primary union of the incision in practically all cases and treat the osseous cavity through an enlarged external meatus. A problem like this, however, cannot be answered in a general manner, nor is any one method applicable to all classes of cases, for in all instances the individual conditions present must be carefully considered and the determination to maintain a more or less permanent postauricular opening, or, on the other hand, an immediate closure of the operative field must be determined by the changes found in the temporal bone at the time of operation.

While it is highly desirable to obtain primary union after mastoid evisceration, yet this is not always possible on account of the difficulty of obtaining precise information as to the complete removal of all diseased tissue, but in the majority of cases modern plastic methods, adapted to widening the cartilaginous external canal, allow of the after-treatment through this channel and therefore the incision behind the ear can be closed either primarily or within a short time after the mastoid operation. In a general sense, however, primary union in contradistinction to the maintenance of a permament postauricular opening, is indicated in the presence of carious osseous tissue and profuse development of granulations in the mastoid interior, when one is sure that all these diseased structures have been removed by whatever operative procedure has been employed and when the loss of bone substance does not involve large areas in the direction of the occiput or does not extend far upwards in a superior direction. The progressive development of these various plastic methods as just mentioned, has released many cases from the necessity of having a permanent auricular sinus, as in those instances where at the time of operation the tissues of the posterior canal wall can be used to line a portion of the newly formed osseous cavity in the temporal bone, so that the production of a large meatus is accomplished and this orifice can be maintained of sufficient size thereafter, the necessity for the maintenance of the former condition with its many obvious disadvantages can be dispensed with.

Undoubtedly, therefore, as the result of two factors, that is the development of methods more closely approaching the ideal in the absolute removal of all the diseased tissue in its entirety and the still higher development of plastic methods upon these tissues, the necessity for the permanent opening even in a very small number of instances will be still further eliminated and it is to be hoped that in the future this question will not arise even in severe cases of cholesteatomata. The main disadvantage of the retro-auricular opening for the patient is from a cosmetic aspect, as in all cases it is most unsightly and especially so immediately following operation, and while at a later period considerable contraction of the soft tissues takes place, yet at the best it is far from being as inconspicuous as the scar obtained in other ways. In men this is especially so, as it is impossible for them to cover at least partially the opening in the bone by their hair.

A marked disadvantage from a more practical point of view is the greater length of time required in healing the parts by this method, so that the patient is kept from his occupation often for a period covering many weeks or months, and the bandage must be worn for a much longer period of time than is the case when the mastoid wound has been sutured and early union has taken place. From the economic aspect, this procedure can in no wise present any advantages over that of immediate closure of the wound and treatment following through the canal, but other sides of the question must be considered and often what may be designated as the vital necessities of the patient must for the time being outweigh any other disadvantages.

As at the present time the main necessity for the maintenance of the posterior opening is in those extensive instances of diffuse cholesteatoma of the mastoid region, where it is seemingly impossible at times to remove the proliferating epithelial masses in their entirety, as they are intimately associated with the microscopic recesses in the osseous tissue and it would seem that in order to obtain a permanent cure in such cases, the post-auricular opening is a necessity.

Many otologists, especially the Continental ones, believe that the opening of the exposed middle ear and its accessory cavities should be maintained until the osseous parts are covered with a healthy cutaneous lining. Burnett, on the contrary, is of the opinion that this is not necessary when the

* Presented at the seventeenth annual meeting of the American Academy of Ophthalmology and Otolaryngology, at Niagara Falls, Sept. 23, 1912.

cholesteatomatous cavity is not of very large dimensions, and he says it is more rational thoroughly to remove the cholesteatoma and heal the bone cavity from the bottom without a permanent fistula. Vulpius believes it neither desirable nor necessary for the cure of this intractable and often dangerous affection to retain a permanent opening, as nature never indicated such a procedure; and Jansen as the result of a very large experience, closes the wound when there is an associated cholesteatoma in the mastoid even though lateral sinus and dura mater are exposed in order that the patient may the sooner return to work.

On the other hand, equally competent observers believe that the reverse of this procedure is the proper treatment in cholesteatoma. Politzer states that the opening should be maintained in certain cases, but he does not think that the opening can prevent the regrowth of the cholesteatoma in those parts of the middle ear not visible through the fistula. Schwartze believing that this affection can be permanently relieved only by the maintenance of a broad fistula behind the auricle, as in nineteen cases of this disease, fifteen treated by maintaining the retro-auricular opening entirely recovered, while the other four cases not so treated broke down and the epithelial proliferation redeveloped as soon as the wound was closed. The findings of Reinhard are especially valuable in this connection, as his experience showed that in cholesteatoma of the antrum, if the opening is maintained by implantation of the integument of the mastoid process into the wound, no return of the disease would ensue, while in those cases where such an opening is not maintained, the affection will develop again and further endanger the life of the individual.

The time when the posterior opening should be closed in such cases of cholesteatoma where a so-called permanent opening has been maintained, will depend entirely upon the condition of the epithelial lining of the eviscerated cavity, for should the least trace of the affection be in evidence, it will be apparent that to close the wound whether it is of several months' or several years' duration in the presence of the heaping up of epithelial masses, would endanger the entire result of the original operation. It is essential therefore in determining when such surgical procedures should be adopted for closing the retro-auricular opening that all traces of cholesteatomata or diseased tissues whether osseous or otherwise, should have entirely disappeared and remain absent for several months at least before such measures can be applied.

As the natural tendency of soft tissues over an osseous cavity is to contract and diminish the size of the opening, it is essential that much care be exercised in maintaining a large opening commensurate with the size of the underlying bony cavity, and this can be accomplished by frequently packing the mouth of the cavity with gauze, in order that epithelial development be retarded or prevented at the edges of the wound. If this be followed out in the majority of instances so that epidermization of the edges of the wound is prevented, it can be maintained at any size required for an indefinite time and when it is desired to close the wound in order to obtain a better cosmetic effect, by omitting the tampons, it will more or less rapidly close in many instances without having recourse to one of the various plastic procedures used for this purpose.

A more or less permanent opening in the mastoid process is indicated as already shown, when cholesteatoma is present in extensive areas in the temporal bone so that large osseous sections are destroyed and a large cavity extending in a posterior and superior direction results, and also when the dimensions of the antrum have been markedly increased by disease processes in the same direction. While if there is a very large loss of tissue in the mastoid process in its vertical portion, as the result either of cholesteatoma formation or of other destructive processes, other things being equal, a permanent fistula behind the auricle will be an advantage in more rapidly healing the parts than if an attempt be made to obtain early closure of the soft tissues over the mastoid process. The maintenance of a fistula behind the auricle for an indefinite length of time is of great importance when, in conjunction with chronic suppurative otitis media, symptoms are present indicative of an intracranial complication so that it is necessary as part of the radical operation to expose either the sinus or the cranial dura mater or both, as under such conditions primary closure of the wound is, of course, inadvisable for fear of subsequent infection of these important tissues; but when the danger of such infection has passed, it may then be advisable to close the mastoid wound by freshening the edges of the soft structures and suturing.

When there are any indications of the development of perichondritis of the cartilage of the external auditory canal, so that it will interfere with the formation of flaps to aid in filling in the large osseous cavity, it is wisest, for a time at least, to treat the cavity through the patulous mastoid opening instead of closing it at the time of the primary operation. It has been the custom of Grunert and Zeroni in performing the radical operation, to allow the post-auricular incision to remain open at first, so that in case furuncles or perichondritis of these parts develop, with the consequent cicatricial and inflammatory narrowing of the canal preventing proper treatment of the osseous cavity, careful inspection and care could be given by way of the mastoid opening and thus obviate the necessity for subsequent reopening should such not infrequent complications ensue.

In various affections of the middle ear and mastoid which partake of the nature of specific granulomata and are accompanied by more or less extensive destruction of both the soft tissues and especially the osseous structures, such as are seen in tuberculosis and in the so-called lymphatic subjects, the maintenance of a permanent opening behind the auricle is undoubtedly indicated in many of such individuals who come to the radical operation. The rationale of such a procedure must be obvious, for while the aim of the operation should be to remove the diseased structure in its entirety yet such an ideal can be but rarely accomplished from the very nature of the local pathological changes present in the individual case and especially from the peculiar lack of resistance on the part of the patient which allows of the progressive and subsequent destruction of tissues. For these reasons, it becomes necessary to allow an exit which will in no manner obstruct free drainage for the discharge of infected pathological products, and as this object cannot be obtained in a satisfactory manner even through an enlarged external auditory canal, it is essential that the post-auricular opening be maintained for this purpose.

In the majority of cases of chronic suppurative

otitis media uncomplicated with sinus or intracranial involvement in which the mastoid process is also involved to a greater or lesser extent, the maintenance of a permanent aural opening is, in my judgment, seldom indicated, as the diseased tissue can be thoroughly removed and the important subsequent treatment carried out through the widened external aural canal in a most satisfactory manner, as has been shown by many operators.

In a series of eighty-three radical operations the posterior opening was maintained in five. These cases recovered with an auditory canal larger than before the operation, which permitted free inspection and treatment of every portion of the large osseous cavity. In this connection the statistics of Holmes are of practical interest as in 115 operations which he performed he did not find it necessary to leave in any instance a post-auricular opening.

In such cases as it is desired to maintain a permanent retro-auricular opening, the operation of Passow presents decided advantages, as the healing of the wound cavity seems to be rather more rapid than by other methods and there is a decided freedom from recurrence of the suppuration if the steps of the operation be carried out with proper technique. It also presents the advantages of allowing free access to the middle-ear cavity for purposes of observing the changes that are taking place and for necessary cleansing; and of considerable value is the fact frequently noted, that free access of air is obtained, so that the parts are kept in as dry a condition as possible. In carrying out this procedure, the usual radical operation is performed and all the diseased structures are carefully removed; into the cartilage of the external auditory meatus a right-angle slit is then made with a sharp, narrow knife and the quadrilateral flaps thus formed are stitched into the bone cavity so as to form a covering for its ceiling. A quadrilateral flap of sufficient size is then dissected up from the cutaneous covering of the mastoid process behind the auricle and is turned into the osseous cavity so as to form a dermal lining for its floor, so that large areas of epithelial covered tissue are at once placed in the cavity and, if the conditions are favorable, in a surprisingly short time the cavity becomes covered with a dry, non-secreting epidermic layer of tissue.

It is especially in chronic suppuration that Passow recommends this operation, as by leaving the free opening behind the ear and by stitching the skin flaps deep in the osseous cavity, complete epidermization is soon obtained with a cessation of the suppuration. Of course, as with all more or less permanent fistulæ behind the auricle, this operation also possesses decided disadvantages, but these should be carefully considered in the individual case, and before any procedure is carried out it is essential that all sides of the question be most carefully considered. The disadvantages of the Passow operation are those common to all such procedures, the most conspicuous being the disfigurement produced, but in this procedure this is not as marked as in some other operations for the same purpose, as the opening contracts during the after-treatment and finally becomes slit-like in character rather than a large oval opening, becoming oval or round in shape only when the auricle is pulled well forward; and at any time, when so desired, it can readily be closed by a plastic operation.

On account of the disadvantage produced by the disfigurement of any large opening behind the auricle, it should be closed as soon as is consistent with the cessation of pathological changes within the osseous cavity.

At the same time the cavity should be under observation for a sufficient length of time until one is convinced that there is not the slightest evidence of heaping up of epithelial masses in any of its parts and that the slight exfoliation that often takes place can be as easily removed from the enlarged meatus as it can from the post-auricular opening.

45 East Sixtieth Street.

EFFECT OF PRESENT PREVENTION ON THE SPREAD OF CONSUMPTION.

By THOMAS J. MAYS, M.D.,

PHILADELPHIA, PA.

It seems that the extensive measures which have been put into active force during the last ten or fifteen years, with a view of stamping out pulmonary consumption, have been in operation long enough to give some rational account of their influence on the spread of this disease. With the object, therefore, of giving a fair and impartial interpretation of the effects of this movement, the writer, through the liberal generosity of the health departments* of the most populous cities of this country, has been enabled to collect a large mass of statistics bearing on the progress of this disease, and from this it is believed that certain well-defined conclusions may be drawn in regard to this problem.

The cities which are comprised in this list are New York, Chicago, Philadelphia, Boston, Buffalo, St. Louis, Baltimore, Pittsburgh, New Orleans, Milwaukee, Cincinnati, Cleveland, Louisville, Washington (D. C.), Providence, Indianapolis, Reading (Pa.), Springfield (Mass.), New Haven, Worcester, Hartford, Haverhill, Nashville, Richmond, St. Paul, Lowell and San Antonio (Texas), in all embracing a population of about 16,000,000. These statistics will be presented in two tables, which give the dates of the enforcement of disinfection measures and the per mille decrease or increase of the death rate of consumption for each city, before and after the introduction of these measures. The first table includes those cities, the records of which cover a period of thirty-seven years from 1875 to 1911, while the other includes those which only cover periods varying from eighteen to thirty years.

The Normal Diminution Rate of Consumption.—In analyzing statistics of this disease, it is important to bear in mind the cardinal point that no estimate of its death rate is worth the paper on which it is written, unless the fact is recognized that pulmonary consumption has been as a rule gradually diminishing in probably every city from its earliest record to the present time, and long before the current preventive measures had been called into existence. In other words, its history shows that its death rate declined independently of any specific preventive measures, chiefly because of improved general sanitary conditions brought about by wise legislation. Let us inquire, then, into the status of this normal reduction rate of consumption before the prevention measures of the present era came into play, as indicated by the statistics of the various cities which are brought under consideration. Before the year 1894 little, if anything, had

*To these the writer's warmest thanks are due for their kind interest and prompt responses.

been done in this direction. Hence, by dividing the records of all those cities which extend over the whole thirty-seven-year period, and which are thirteen in number, into equal parts (taking 1893 as the central year, as has been done in the following table) the first half will demonstrate the diminution rate in the ante-prevention period, which is called the normal rate of decrease; while the second half covers the time during which the prevention measures were in active operation, and this period will show whether the latter has had any perceptible power to accelerate the normal diminution rate, or not. This differentiation in the diminution rate of consumption before and after the year 1893 is shown in each of the thirteen cities in the following table:

TABLE 1.*—STATISTICS OF CITIES COVERING 37 YEARS, FROM 1875 TO 1911.

Names of Cities	Years in which Prevention Measures Were Begun to Be Enforced	Normal Diminution Rate per Thousand in First Half of Period (From 1875 to 1893)	Death Rate per Thousand in Second Half Period (1893-1911) When Preventive Measures Were in Active Operation
1. New York	1894	25—	29—
2. Chicago	1902	13—	2+
3. Philadelphia	1902	16—	16—
4. Boston	1900	24—	32—
5. Buffalo	1900	36—	6—
6. New Haven	1901	26—	19—
7. Reading	1905	22—	40—
8. Providence	1905	17—	36—
9. St. Louis	1905	23—	17—
10. New Orleans	(not given, but very recent)	22—	14—
11. Washington	1908	34—	17—
12. Cincinnati	1906	14—	3—
13. San Antonio	1909	17—	35—
Total		289	262 Net increase of 27 per mille

*The difference in the death rate between the first and second half of the whole period in each city is obtained by getting the average death rate of the first seven years (1875-1889); that of the middle seven years (1890-1896); and that of the last seven years (1905-1911). The difference between the first and the middle average expresses the increase or decrease in the first half, and the difference between the middle and the last average basis expresses the increase or decrease in the second half. The minus (—) sign indicates a decrease, and the plus (+) an increase. The same principle is followed in computing Tabel II, although on account of the lack of the requisite number of years in the whole record, a six instead of a seven year period had to be taken for the average base.

From this table it appears that the total diminution rate in the first half of the whole period is 289 per mille, or per thousand, and in the latter half it is 262 per mille, showing a difference of 27 per mille in favor of the first half. Slight as this difference seems to be, it is singular that pulmonary consumption should vanish more rapidly in the first half of that period, when hardly an effort was made or a thought was turned toward hastening that process directly, than it did in the second half of that period, when millions upon millions of money were spent, and a world-wide crusade was aroused to crush it, in which every possible physical and intellectual force was enlisted.

It is true that in New York City, and in Boston, where prevention laws have been vigorously enforced, in the former for seventeen, and in the latter eleven years, there is an increased diminution in the second half over the first half period of 4 per mille and 8 per mille, respectively; yet in Reading, Providence and San Antonio, where the preventive measures had only been applied for six years in the first two cities, and two years in the last, the decrease in the second over the first half period for these cities has been 18 per mille, 19 per mille and 18 per mille, respectively. This increased reduction rate in the five cities of this table may be ascribed, perhaps, to the salutary influence of the prevention measures which were applied. If this contention is true, it is plain that their action is extremely erratic and unreliable. For, under such an assumption, a reasonable explanation would have to be given why it requires a given force seventeen years to perform a certain amount of work in one locality, while it shows its capability of performing three times that amount of work in two years in another locality. This clearly expresses the relative proportion between the length of time and the effects which the prevention measures wrought in New York City and San Antonio, if they had any effects at all, and that which is true of these cities is also relatively true of Boston, Reading and Providence. To show the probable helplessness of these preventive measures still further, it may be pointed out that in Chicago, where the same measures were applied for nine years with the same vigor and supervision as were given to them in New York and Boston, and other cities, there was not only no decrease, but an increase of 2 per mille in the second over the first half of the period.

In summing up the two columns of this table it is shown that the total net increase of the second half is 27 per mille in excess of that in the first half, an indication which is confirmed by an analysis of Table II, and which is of additional importance in estimating the value of these protective measures.

Before going any further, Table No. II will be given, which will, in a great measure, accentuate the comments just made in relation to the factors which make for the reduction of the consumption rate. This table comprises the statistics of fourteen cities, which cover periods varying from eighteen to thirty years before 1912, and its general arrangement, with a few exceptions, is the same as that of No. 1.

TABLE II.—STATISTICS OF CITIES WHICH EMBRACE PERIODS VARYING FROM EIGHTEEN TO THIRTY YEARS PREVIOUS TO 1912.

Names of Cities	Number of Years Covered in Each City, Inclusive	Years in Which Prevention Measures Were Begun to be Enforced	Normal Diminution Rate per Thousand in First Half Period of Each City	Death Rate per Thousand in Second Half Period of Each City When Preventive Measures Were in Active Operation
1. Worcester	1886-1911	1902	0.90—	22—
2. Hartford	1889-1911	1909	19—	6—
3. Lowell	1890-1911	1903	29—	16—
4. Cleveland	1885-1911	1910	20—	2—
5. Louisville	1892-1911	1909	23	5+
6. Haverhill	1880-1911	1906	25—	31—
7. Springfield	1890-1911	1907	11—	34—
8. Pittsburgh	1880-1911	1907	26—	25—
9. Baltimore	1884-1911	1904	7—	18+
10. Milwaukee	1881-1911	(not given, but very recent)	21—	8—
11. Indianapolis	1890-1911	(not given, but very recent)	11—	11—
12. Nashville	1879-1911	1906	15—	31—
13. Richmond	1887-1911	(not given, but very recent)	24—	26+
14. St. Paul	1893-1911	1904	11+	9—
Total			220.90	146 Net increase of 74.9 per mille

That which is true of Table I is also true of the cities of Table II. While Worcester, Haverhill, Springfield, Nashville, and St. Paul show an increased diminution in the second half over the first half of the period, it still remains that the total net decrease in the first half of the period is 220 per mille, while in the second half, or the preven-

tion period, it is only 146 per mille, which leaves a balance of 74 per mille in favor of the first half, or what may be called the normal diminution rate period. By adding this balance of 74 per mille to the 27 per mille total net increase of Table I, it shows a total net increase of 101 per mille in excess of the second over the first half of the period in the twenty-seven cities which are under consideration in this paper.

Whatever distrust one may have in regard to the value of statistics, and whatever the shortcomings of those which are presented here may be, it is obvious that the trend of the evidence is strong enough to force the conviction that the decrease of the death rate of consumption has not been accelerated one whit by the preventive measures which have been evoked during the last ten or fifteen years; on the other hand, there are positive indications that, on the whole, the number of deaths from this disease have, for some unaccountable reason, increased during the years when these measures were in full sway. In other words, the modern prevention idea of stamping out consumption by fumigation, disinfection and isolation, is evidently proceeding on a blind trail, and it is high time that we strive to recall our mental equilibrium and to realize that experience, which is, after all, our best practical master, teaches that the only remedy which has so far been found effective in reducing the number of deaths from this disease, consists in the improvement of our physical and mental environment, and in the moral betterment of the human race. Additional proof of this will be furnished in that which follows.

History of Consumption in the Colored Race of This Country.—Before the Civil War the colored race was practically free from consumption—at least, its death rate in the South was not higher than that of the white population, in spite of the fact that they were probably more exposed to the disease then than they have been since. From reliable sources it is learned that the negroes "nursed the white consumptives, washed their spittoons, bedding and clothing, swept and dusted their rooms, and in many instances slept in the rooms with them—literally being with them night and day, and were more exposed to the tubercle bacillus than now as a general thing; still they resisted the disease." (Powell.) Notwithstanding their immunity before the war, it is well established that at the present time the death rate of consumption among the negroes of this country is from two to four hundred per cent. higher than it is among the whites. Why should the negro race, in less than half a century, be transformed from the least to the most consumptive race? Why should this come to them without the change of climate, or without the influence of migration, but in the land of their involuntary adoption, in which they had continually lived for more than two hundred years? The principal reason for this change was that since they obtained their freedom their entire social, economic and political existence became revolutionized. Instead of being dependent on their owners for food, clothing, shelter, medical care, and general supervision, as was their wont in the days of slavery, they were thrown on their own resources and were forced into a struggle for a living that was as unequal as it was tragic. And it is not at all surprising that in the severe stress and strain which they were compelled to undergo to readjust themselves to their new environment—to a civilization which was thousands of years ahead of their own social status—their constitution, and especially their brain and nervous system, became undermined and exhausted, and they fell an easy prey, not only to pulmonary consumption, but to insanity in excessive proportion, and from which they were also free before the war—showing that both diseases originate from common causes.

On the other hand, it does not require a very severe stretch of the imagination to perceive that if, through some magic spell, the negroes were translated into that state in which they could enjoy the advantages of care, food, shelter, clothing and general oversight, such as they received during slavery days, without being subject to the institution of slavery, they would in time revert to their former freedom from consumption and other diseases which now threaten to decimate them. To show the possibility of this, it may be incidentally stated on reliable authority that from 1860 to 1870 Spain brought 250,000 coolies under contract to the island of Cuba. They were drawn from the scum and offscouring, principally of the cities of Canton and Macao, and, in spite of the most careful selection, they brought with them consumption and other diseases for which China is noted. The vast majority of them were placed on plantations, and, being under contract and under the supervision of overseers, who ministered to all their physical necessities, so far as food, shelter and care were concerned, their condition being practically like those which obtained during negro slavery in the South, within the first few years consumption was eliminated, either through death or cure, and never reappeared in them or in their offspring.

Perhaps one of the most convincing examples of the influence of well applied sanitary regulations as a means of stamping out pulmonary consumption, so far as we have the figures, is given in connection with the history of exterminating yellow fever in Santiago de Cuba, immediately after the American occupation of that city in 1898, and which then had the reputation of being the filthiest city in the world. Major L. C. Carr, surgeon of the United States Army, was in charge of the work, and he states that a fairly reliable report of the deaths from yellow fever and consumption had been kept for some years before the occupation. The sanitary work, which was done for the chief purpose of clearing out yellow fever, began in 1898, and consisted of disinfection and re-disinfection of the foci of the fever, use of force-pumps to clean out cesspools, latrines, manholes, and wells; drenching and scrubbing of floors, ceilings, and walls; prohibiting the promiscuous throwing of filth, urine and excretions into the streets, and a general process of cleaning up the city and keeping it as sanitary as possible. No efforts were made to exterminate mosquitos, and no attention was paid to the expectoration of consumptives. In 1897 there were 325 deaths from yellow fever and 410 deaths from consumption; in 1898, 20 from yellow fever and 415 from consumption; in 1899, 53 from yellow fever and 173 from consumption; in 1900, no deaths from yellow fever from January to October, and 135 from consumption. From 1898 to 1900 the general death rate also fell from 133.71 to 6.00 per thousand inhabitants, while the death rate of yellow fever sunk to zero, and that of consumption diminished 67 per cent. during the last three years.

History of Former Crusades Against the Spread

of Consumption.—The facts which have been brought out in this investigation, concerning the inadequacy of the present preventive measures against the spread of consumption, are in entire accord with the results of similar crusades in the past, as the following historical facts plainly show. In 1754 the Grand Duke of Tuscany, in Italy, made it compulsory on all physicians to report every case of consumption to the health authorities of that country, under the penalty of a heavy fine, and even imprisonment, for failing to do so. In every case of death from consumption all articles used by the deceased had to be thoroughly disinfected, and nothing that was used in their illness could be sold for a month after death. Consumptives were compelled to spit only in special vessels of glass or glazed earthenware, which were to be disinfected, emptied, and cleaned frequently. These laws were rigidly enforced for thirty-nine years, when, on account of a want of support by the medical profession, they were repealed as being "a cause of bitterness, dissatisfaction, and vexation."

Laws of a like character were enacted in the Kingdom of Naples in 1782, and probably carried out with greater severity. In addition to the penalty imposed for not reporting cases of consumption and for failing to disinfect the expectoration, the rooms in which consumptives died had their ceilings, walls, floors, doors and windows torn out and burned. The bedding and furniture shared the same fate, and the houses were not inhabitable for a year. The sick were neglected, the families in which consumption occurred were shunned, and the owners of such houses were often turned into beggars on account of depreciation of their property. These laws were enforced about fifty years, and, as in the case of Tuscany, were abandoned on account of their absolute uselessness. Dr. de Renzi, the medical historian of Italy in that day, asserts that the injury which these laws inflicted were indescribable, and denounces the medical faculty in the severest terms for participating in their introduction and maintenance.

It may be urged here that medicine has made many advances since then, and that we are able to do more in the way of preventing consumption by disinfection and isolation than could be done a hundred years ago. It is true, they knew nothing of the tubercle bacillus, but is there any evidence to show that this germ was absent then, or did not possess the same virulent activity that is ascribed to it now? There is no evidence that the disease assumed a different character from that by which we know it now. The general description is the same as that given at present. It arose under the same influences, sprang from the same causes, had the same signs and symptoms, and was subject to the same laws of prevention and cure. In fact, the people at that time practically anticipated, by a whole century, the baneful effects which the then unknown bacillus is supposed to exert at present in the production of this disease, and under the ruthless isolation of consumptives which then prevailed, and which could not be enforced now to the same extent, neither the sick, their bacilli, their expectoration, nor any of their belongings had the remotest chance of ever reaching or infecting any one.

Rational Means of Preventing Pulmonary Consumption.—In looking for rational principles to solve the prevention problem of consumption, there is not a more positive guide in existence than that of experience. This teaches us to steer clear of the shoals and pitfalls that have wrecked ventures of this kind, and seek methods that insure safe sailing to the goal in view. No safer and more forcible indication can be found for such a course than a study of the factors which were active in reducing the death rate in our American cities from 1875 to 1893—the time which may be termed the ante-prevention period—or of the underlying elements which practically maintained the freedom of the negro slaves from this disease, as well as those which worked out immunity for the Chinese coolies in Cuba; and, lastly, an investigation of the most important example of Santiago, which demonstrates how profound an impression may be made on the march of this disease in the course of a few years by preventive means that prevent.

All of these exemplifications in their last analysis resolve themselves into the inculcation of sound fundamental principles of hygiene, which call for the expenditure of large sums of money and assiduous labor. Carried out in detail, this implies: (1) Eating wholesome and properly prepared food, (2) avoidance of living in damp, ill-ventilated and overcrowded dwellings, (3) wearing of suitable and comfortable clothing, (4) personal and domestic cleanliness, (5) avoidance of overwork and physical mental strain, (6) encouragement of learning trades, agricultural and mechanical pursuits, or any useful labor for boys, (7) importance of teaching girls the art of domestic economy, cooking, sewing, and taking care of a home, (8) the great value of education, (9) hygiene of the workshop and factory, good ventilation and temperature, and avoidance of dust as much as possible, (10) supervision of convalescence from what often seems a trivial cold or cough, or from illness or accident, (11) the procurement of efficient medical service and nursing in sickness or accident, (12) insurance against death, sickness and accident at the cheapest rate possible with safety, (13) erection of modern tenement houses, to be rented to working people at a rate sufficient to pay 4 per cent. interest on the cost, which amount, when sufficiently accumulated, to be applied for the erection of other tenements.

1829 Spruce Street.

CLAUDIUS GALEN.*

131 A. D. TO 200 A. D.

By THOMAS W. HARVEY, M.D.,

ORANGE, N. J.

"There is no pen, nor ever was, nor will be, that could do justice or a tithe of justice to the meaning of that historic moment in the history of mankind when the slowly but surely seminal labors of the appointed in many past generations, hitherto unavailing, jeered at by fools, unknown by the crowd, trivial in the eyes of kings, culminated for the saving of fools and crowds and kings alike in Listerian surgery."—(Saleeby "Surgery and Society.")

As we look back over the past of medicine, illumined by the wonderful light of the Twentieth Century, we may recognize these "appointed" ones, their work clearly showing up above the level of the great mass of error, of dogmatism, of sacerdotalism, of charlatanism, of mystery and magic, like distant peaks of snow-capped mountains in the Alpine after-glow when all else is shrouded in dark-

*Read before the Orange Mountain Medical Society, May, 1912.

ness and gloom. Such "appointed" ones, Vesalius and Boerhaave and Leuwenhoeck, Ambrose Paré and Pasteur, Harvey, Laënnec, Jenner, Priestley, Sydenham, Servetus, Paracelsus, Avicenna mark with their beacons the pathway across the ocean of obscurity and forgotten knowledge until we come to one great searchlight whose brilliance was so penetrating that it illuminated the path of medicine and obscured all other sources of illumination for fourten hundred years. Such an "appointed" one was Claudius Galen.

Changing the metaphor, if we look over a railroad map of a great country like our own we will see here and there centers toward which all lines concentrate and from which all radiate. So it is looking at the map of the history of medicine. We find here and there great minds to which converge all the lines of thought and knowledge that preceded them and from whom radiate similar lines of thought and knowledge to their followers, to be dissipated and lost in the ignorance and half knowledge of their disciples, or to be misinterpreted and denied by false prophets, ambitious to pose as new centers of knowledge.

After much winnowing of the chaff the lines of the old truths and the lines of new discoveries concentrate again in the new center; some great mentality with powers of analysis and of generalization so much greater than those of his contemporaries that the principles that he promulgates seem to have originated with him, and we call him a great discoverer.

Such a man was Galen, the great Eclectic. From all the widely differing schools of medicine that had flourished with more or less virility since the days of Hippocrates he took whatever theories seemed to him to be true, and in the great alembic of his mind he digested them and distilled a theory of medicine that might well have been called the Galenical school, so filled was it with his own personality and so persuasive was it to the loyalty of the physicians of the succeeding centuries.

His ideas of anatomy prevailed, founded though they were almost entirely upon studies of animals, until the dissections of Vesalius, and his physiology was accepted until William Harvey published the results of his studies on the circulation.

Particularly happy was he in his birth. His father lived at Pergamus, second only to Alexandria as a seat of learning. He was a learned man, and laid a broad foundation in his son's youthful mind so that when he was sent to study philosophy he easily became an adept and developed those powers of observation, analysis, and reasoning that enabled him to enter upon the study of medicine well equipped to differentiate truth from error, and to lead men back to the pure medical truths as laid down by Hippocrates, and which had been covered up and lost in the great mass of superstition and theoretical insanity that prevailed among the teachers of medicine and philosophy during the years that intervened between the lifetime of the Father of Medicine and that of his greatest disciple. That it is no exaggeration to apply the term pure medical truths to the theories of Hippocrates is readily appreciated if we consider his basic principle. There is a certain force that he calls "nature," a force later recognized under the title of Vis Medicatrix Naturæ, upon which we can rely when we cannot cure our patients by incantations, sacrifices, prayers, or drugs, which, if not prevented by our own malpractice, can generally be trusted to correct the aberration from health. To quote his own words from Smythe's Medical Heresies: "Nature is sufficient of itself for every animal. She performs everything that is necessary to them without any instructions how to do it. She distributes blood, spirits, and heat through all parts of the body by which means it receives life and sensations, nourishment, preservation, and growth."

Now this is good medical doctrine to-day and is about as near being exactly true as it was four hundred years before Christ. In his writings we find that he teaches that this force is a form of heat and that it is immortal, and this is a doctrine which under the title of the "Conservation of Energy" underlies all our modern theories regarding physical phenomena. These doctrines prevailed very generally until the time of Galen. However, rival schools and perversions of the original Hippocratic teachings had risen so that it was a difficult task that Galen set for himself, viz., to reform the practice of medicine. As he pursued his task his Eclecticism evaporated and he became a strong supporter of dogmatism in medicine, and so entrenched his principles that it took many centuries and the attacks of many such as Paracelsus to deprive him of his position as arbiter of the proper beliefs to be held about disease and its cure.

Besides nature, this force to which is ascribed so much by Hippocrates, he believed the four humors, blood, phlegm, yellow bile, and black bile, and their derangements to be the basis of all disease, and that these humors were subject to the malevolent or beneficent influence of the four elements, earth, fire, air, and water.

The one great principle that has come down to us from Hippocrates and his immediate disciples is the value of observation of the phenomena of disease, and the effect of outside influences such as diet, regimen, and climate. They attributed much to the influence of the stars, the solstices, and the equinoxes, and consequently easily yielded to the tendency to attribute disease to occult causes; and the pure speculations as to the effect of meteorological conditions became lost in the maze of astrology.

One of the Hippocratic precepts, to-wit, "Life is short, opportunity fleeting, judgment difficult, treatment easy, thought hard, but treatment after thought is proper and profitable," may well be accepted as a cornerstone for medical practice to-day.

After the days of Hippocrates numerous schools arose, all of them antagonizing more or less his teachings. The dogmatists, who were the earliest to be differentiated from the older physicians, were more given to speculation than to observation, and the more they theorized about the nature of disease and its causes, the less attention they gave to the study of its phenomena.

At Alexandria some two hundred years after the passing of Hippocrates there developed a great medical school, a school that inherited much from the ancient Egyptian civilization, which indeed had been the storehouse from which the Greeks had drawn the knowledge upon which, as a foundation, Æsculapius had developed the medical science that had culminated in the Hippocratic period.

All the world went to Alexandria to finish their medical studies, and even two hundred years later we find Claudius Galen studying anatomy at the feet of one of its noted professors. Alexandria in the earliest times had allowed its medical professors to dissect the human body, and here in 335-220 B.C. flourished Herophilus, who might be called

the father of anatomy, and so strenuously did he pursue its study that he is said to have dissected seven hundred bodies. He had a contemporary, one Erasistratus, who seems to have been equally skilled in anatomy, but differed from his colleague in many essentials. He might have been called the Hahnemann of the Ancients so persistent was he in opposing the use of venesection, and of active and unpleasant remedies of any kind, even to the extent of using infinitesimal dosage.

Erasistratus was the man who made his medical reputation by diagnosing love sickness in the case of the young prince who was pining for his stepmother, and had fallen into such a grievous state of illness that none of the local faculty could cure him, not being able to determine the cause. Erasistratus, however, perceiving that the young man's symptoms were always aggravated by the approach of the lady, recognized the disease. The diagnosis having been made, a speedy cure was accomplished, but history is silent as to the method. Not to be outdone, Galen made a similar brilliant diagnosis in another case of love sickness. Galen, like many of us to-day, took delight in telling of his successes in diagnosis, and he gives descriptions of consultations, narrating with much pride his clever use of his powers of observation, and unctuously expressing his belief that these patients had probably never before been in the hands of a competent physician. The fact is Galen had very little use for the average doctor, and was arrogant and supercilious enough to have acceptably filled a consulting chair in a metropolitan school of to-day.

During the five hundred years that preceded the advent of Galen many sects had arisen in medicine. The Empirics rejected as useless all search for the causes of disease, rejected the value of anatomy, and claimed that the true object of medicine is to cure the patient, and that the study of the clinical histories of similar cases should be a sufficient guide to the proper treatment. The Methodists attempted to pursue a path midway between the Empirics and the Dogmatists, who claimed to be the true followers of the Father of Medicine. The Pneumatic school devised a fifth principle called "Pneuma," this principle is breathed in and the effects of its proper or improper mixture with the well-known four elements of Hippocrates cause health or disease. Following these sects arose a powerful school called Eclectics, and it was from prominent teachers of this school that Galen received his early medical training.

According to Baas the world of that day seemed to be well supplied with medical men of all kinds and varieties, with all degrees of training, formulating many opposing and fantastical theories as to the cause, natural history, and termination of the phenomena of disease.

There were many specialties and there were many castes among physicians. Among the Romans in the early days of the emperors, most of the physicians were Greek or Egyptian slaves; the high and well-born Roman scorned to lower himself to either bodily or mental labor and employed slaves for such purposes, his best medically trained slaves being worth about three hundred and fifty dollars. In those days medical men were certainly of low degree, but as time went on and slaves became freedmen, or learned physicians from other countries came to Rome to practise their art, or were summoned thither to attend some great man, the social status of the medical man became very much better, so that in Galen's time it was considered an honorable calling even by the knightly and aristocratic native of the Imperial City. There were court physicians, city and district physicians, and ordinary practitioners, besides the military surgeons; there were apothecaries and barbers and bathers; there were dispensaries and even hospitals of a kind. The poor were treated for nothing and the well-to-do were charged according to their means. Later the doctors had many privileges such as freedom from certain forms of taxations, and many were salaried by the city or State. Their fees, as has been said, varied. Thirty cents was a common fee for a visit, but many very large fees are recorded. Baas mentions that the oculist Charmis received a fee of $10,000, while Galen received a fee of $2,100. Ancient Rome also had its midwives and sages femmes, also abortionists and poisoners, and in all things medical seemed to have attained a high degree of civilization.

And to this Rome came Galen in his young manhood, and here he spent most of his life, here he made his medical reputation, and here he wrote his books. Pergamus, his birthplace, was situated in Mysia and was one of the renowned centers of education of the ancient world. It had a large and important temple of Æsculapius, ornamented above its portal with the great carved serpent, and with its majestic columns covered with inscriptions written by those who had recovered from their diseases under the beneficent care of the temple physicians, carefully detailing the symptoms of their diseases and the methods of treatment, such clinical records being of use in training the young medical men, and also of assistance to those sick with similar diseases.

Galen, led by a vision of good old Æsculapius, who appeared to him in a dream, took up the study of medicine in his native city, and visited and studied in all the important centers of Grecian medical teaching. Whenever he heard of some interesting medical discovery he immediately journeyed to the spot so as to have a personal knowledge. In one of his travels he describes the finding of a human skeleton. A criminal had been left unburied and the carrion birds had cleaned the bones, and he devoted much time to the improvement of this unusual opportunity, and in his lectures on anatomy he urged his students to be on the lookout for such chances. He must have increased his acquaintance with anatomy while studying in Alexandria, where was still preserved a knowledge of that subject handed down from the days of Herophilus when dissection of the human body had been common. He pursued other studies in addition to medicine, and we find among his productions books on grammar, mathematics, logic, and ethics. He was also a great linguist and wrote his treatises in several languages and dialects. He is said to have written over three hundred treatises, more than half of them being still extant. Dr. George J. Fisher has calculated that Galen's extant works are nearly five and a half times as voluminous as the entire Bible. "These treatises were the great and exhaustless repositories of medical observations and opinions to which the whole medical world turned for fourteen hundred years."—(Fisher).

Certain of his more important treatises, viz., "De usu partium corporis humani," "De pulsibus," "Ars parvi," "Methodus medendi," "De crisibus," and "De differentia febrium," composed the standard "Canonical writings of Galen," and were the text-

books of the middle ages. These are the books that Paracelsus burned.

The anatomy that Galen taught was largely founded on the study of animals, yet his treatises were accepted as authority down to the time when the valiant Vesalius defied the arrogance of the monks, and despite the fulminations of the church published his wonderful works founded on his own dissections. Vesalius never could say severe enough things about Galen's anatomy and devoted much time to pointing out his errors, and yet many of Galen's anatomical writings were corrections of the teachings of his predecessors, as for instance when he pointed out that the nerves originated in the brain and not in the heart, as taught by Aristotle. He accurately described the larynx and compared it to a reed pipe. His osteology naturally was better known to him than the anatomy of the viscera or the muscles. He described accurately many muscles previously misunderstood.

In physiology he experimented as a vivisectionist and demonstrated to his pupils. He described the heart and its valves, and came very near to the discovery of the circulation of the blood. He opened a living animal, tied the aorta in two places and showed to his students the blood in the living artery. His predecessors had taught that the arteries in life contained air and that the phenomenon of bleeding from wounded arteries was due to the blood flowing into them after the air had escaped. He recognized the heart as the center of the circulatory system and its contractions to be the cause of the pulse of which he described many varieties and about which he wrote a book.

His explanation of the two sets of vessels was, that for different purposes the system required two kinds of blood, one bright and thin, the other dark and thick.

His physiological experiments taught him the value of the ligature, a fact that was forgotten after his death until Ambrose Paré reintroduced the ligature into surgery over one thousand years later. He explained the phenomenon of blood clotting by the presence of certain fibrous particles.

He taught that respiration was for the purpose of cooling off the excess of heat produced in the blood by the vital processes, and claimed that if we knew why the flame is extinguished by the absence of air, we could understand the influence of the respiration upon the blood.

His knowledge of the nervous system was fairly accurate, he recognized the two varieties of nerves, and described accurately the effects of cutting the nerves and of cutting the spinal cord. He also understood the crossed action of the cord in the transmission of impulses of sensation.

He was a careful observer of the phenomena of disease, but also was watchful for any evidence that would help him to a diagnosis. He describes with much evident pleasure the surprise of a medical patient at his diagnostic acumen and the graphic manner with which he described the patient's symptoms before he had commenced his examination, and explains his apparent mysterious skill by the fact that on his way to the patient's room he had inspected a stool that a servant was carrying from the room at the moment of his entrance. The peculiar bloody sanious appearance of this discharge he recognized as common to certain diseases of the liver, and the further observation of some medicine that the physician had been taking on his own account enabled him to understand the patient's own idea of his case, and it was a very easy riddle to solve as to the location and character of his symptoms.

It was such cleverness that led to his being called the Paradoxopoius, the wonder worker, and it was also the cause of his leaving Rome and returning to Pergamus for a short time, only to be called back by the Emperor, Marcus Aurelius. It is interesting to note that he was so well thought of in his home town that he was made physician to the school of gladiators. In these days he would probably have been made a football surgeon.

He seems to have made himself quite popular with the various emperors who reigned at Rome during his lifetime. He made a great reputation and earned a good fee by telling one of them that he was eating too much, and that he did not have malaria as diagnosed by his other advisors. He also took care of two of the sons of Emperor Commodus successfully through several illnesses.

Galen's therapeutics was of a very active character, blood-letting even to fifty ounces was used in all forms of diseases, and among those sensuous and high living old Romans was undoubtedly of great benefit. He, however, described accurately in his works the limitations that he would put on its use, as also for the use of purgatives and emetics. Emetics were used very commonly, and probably it would be better if more were used to-day.

The universally popular remedy of the day was the "theriaca," which was composed of several hundred ingredients, of which opium and ground-up vipers were the next important. It seems to have been used as a general tonic and also as an antidote to snake bite. The formula was retained in the British Pharmacopœia until within the last two hundred years. Galen was an expert in the compounding of this medicine and prepared it especially for the Emperor Aurelius.

He taught his students that the physician is a spectator at the bedside of his patient, of a life and death struggle between disease and the patient, and that it is his duty to discover the end for which nature is striving and give aid with that end in view.

Galen has been described as a man of great natural ability, versed in philosophy, an expert anatomist, an experimenter in physiology, and a physician of great experience. He taught that the end and object of medical science is to preserve the parts of which the body is composed in a natural state and to endeavor to establish their functions when disordered, hence he deduces the necessity for the study of anatomy and physiology.

Health, he taught, consists in the fair proportion of the four elements, fire, water, air, and earth of which the attributes are heat, cold, moisture, and dryness.

As a student and teacher of medicine he governed his methods of thought by that rule formulated many centuries later by Lord Bacon, and paraphrased as follows by Sir Thomas Watson: "Be not like the empiric ant, who collects from every side indiscriminately for present wants; nor speculative like the spider, who, seeking no material abroad, spins his web of sophistry from the recesses of his inner being; but imitate rather the praiseworthy bee, who, gathering crude honey from various flowers, stores it up within, and by his own operation matures and perfects it for future use."

We must recall that Galen lived in the second century after Christ, and that the great mass of

the world was still pagan. He knew the sect of the Christians, and in his writings speaks of their virtues and of their chaste abstemious lives, but takes exception to their mysticism and their dependence upon the supernatural rather than the rational philosophy which was the basis upon which he had built up his school of medicine and to which he referred the results of his observations of nature.

In a treatise entitled "De usu partium corporis humani," which is a dissertation on final causes, he argues for the existence of a supervising Providence, deducing from his studies of anatomy and physiology, and the adaptation of the body to its needs, proof of the presence of design in creation, anticipating Paley by many centuries.

I can close this sketch of this great man in no more fitting manner than by quoting from this treatise his "Hymn to the Deity," as it has been called, words that might well have been uttered by a Christian father, though they were written by the pagan, Claudius Galen:

"In writing these books, I compose a true and real hymn to that awful Being who made us all; and in my opinion true religion consists not so much in costly sacrifices and fragrant perfumes as in a thorough conviction impressed upon our own minds and an endeavor to produce a similar impression upon the minds of others of his unerring wisdom, resistless power, and his all diffusive goodness. For his having arranged everything in that order and disposition which are best calculated for its preservation and continuation, and his having condescended to distribute his favors to all his works, is a manifest proof of his goodness which calls loudly for our hymns and praises. His having found the means necessary for the establishment and preservation of this beautiful order and disposition is as incontestable a proof of his wisdom as his having done whatever he pleased is of his omnipotence."

THE IMPORTANCE OF THE LOCAL LABORATORY IN MEDICAL PRACTICE—THE COUNTY LABORATORY.*

By WILLIAM S. MAGILL, A.M., M.D.,

ALBANY, N. Y.

FIRST LIEUTENANT, M. R. C. U. S. ARMY; DIRECTOR OF LABORATORIES, N. Y. STATE DEPARTMENT OF HEALTH.

In appearing before this society upon your invitation to help the beginnings of the Genesee County Laboratory, the speaker occupies a rather anomalous position. You are, of course, aware that the legal authority which permits the establishment of such a laboratory vests the power of creation of a county laboratory and of all provision of its funds and its direction, management, and appointment of officers, in the hands of the Board of Supervisors of the County.

The State Department of Health apparently has no part or power in any of these initial steps and has no control in the operation of the laboratory, nor determinations of its functions nor the qualifications of its staff nor of their emoluments: and, unless by courtesy of the Board of Supervisors or their delegated authority, our State Laboratory would not be consulted in the matter at all. There is a provision in this enabling act for county laboratories which I believe states somewhat as follows: that the State Department of Health shall furnish supplies, etc., to such county laboratory when established.

I understand that no appropriation to enable the State Department to furnish these supplies has been specifically made, and without such appropriation the directions of the Commissioner of health to the laboratory are to help in so far as we are able in such effort to make a county laboratory successful and to furnish to such laboratory the supplies that it is possible within the limitations of our appropriations to furnish.

We are endeavoring, therefore, to help the successful operation of county laboratories by supplying to them as a loan various outfits for the transport of specimens through the mails; of sputum, diphtheria culture material, and the so-called Widal outfit for blood serum testing; and we endeavor to renew the culture supplies as they are utilized and we also furnish in assisting such a laboratory in special work, amounts of special media.

We are, of course, quite unable to undertake the supplying of a county laboratory with any extensive apparatus or materials of such nature, which would be quite beyond the possibilities of our present appropriations, besides involving other questions as to the amount of apparatus of such nature that we would probably be called upon to furnish a county laboratory.

As I have said, my position before your society now is somewhat anomalous for the reason that when my opinion has been asked in previous matters of establishing a county laboratory, I have constantly urged that at the first establishment of such a laboratory ample provision should be made to secure at the very beginning a competent staff, thoroughly sufficient equipment, proper quarters, and ample operating expenses to start a laboratory of the highest class.

I have frequently stated that in my opinion at least $3,000 per year should be appropriated as a minimum provision for the county laboratory to insure its ultimate success and I have pointed out the relative division of this amount for a necessary equipment and salaries for the start, urging that in making such a minimum appropriation it should be well established in the minds of the Supervisors that as the experiment progressed toward its success, they would be ready to increase this appropriation with necessary amounts to broaden the field of work and the quality of the workers in such a laboratory.

Recalling then my urgent insistence on an ample provision of means for the county laboratory, my previous statements that a minimum of $3,000 should be contemplated before making a beginning, also my strong preference that a county laboratory begin with ample means for equipment and for securing a staff of unquestionable qualifications that should devote its entire time to the laboratory work, for reasons that need not be dilated upon here it is a little difficult to urge upon you the advantages of your newly established county laboratory, which is far from realizing the minimum of appropriation and scope desired.

There can be no doubt, however, that deficiencies of money can be later recompensed and the important thing then in starting a laboratory is to secure efficiency of work.

At the present stage of medical practice in this State, as observed by me, there is no particular in which the practitioner can be more benefited than

*Address delivered by invitation before the Genesee County Medical Society, September 4, 1912.

by the improvement of quality and accessibility of laboratory facilities for his daily work. The rapid progress of modern medicine, the immense development of bacteriology, which has occurred since the graduation from their medical colleges of most of our present active practitioners, have developed possibilities of early, accurate, and control diagnoses in the laboratory, quite unthought of by the most skilful clinicians of twenty years ago.

Speaking in a very general sense, one can say that every case of disease occurring in a general practice now presents problems of very difficult solution by the clinician, but of simple and rapid determination with proper laboratory facilities. I do not need to enumerate to you all of the cases of medicine in which a laboratory can render assistance and the many of them in which the laboratory assistance is imperative.

You know, of course, the relative precision and ease of the precocious diagnosis of tuberculosis in the human being by laboratory method and test alone, before there are any marked clinical symptoms. You know the very recent but remarkable precision and extensive application of the laboratory diagnosis and control of disease progress in the matter of syphilis, in which a dependence upon clinical symptom alone has for years been considered quite impossible. It may be well, in view of our subject to-day, to dilate upon the certainty and utility of laboratory methods in the diagnosis and control of infectious diseases.

In our State Laboratory these efforts are confined rather closely to the examination of cultures to determine the presence of the germ of diphtheria in a suspected throat; to determine the presence of the tubercle bacilli in sputa, and the well-known blood serum test—the Widal reaction—in the diagnosis of typhoid fever. In undertaking these tests the laboratory is doing its utmost to carry out the motto of the state department to "Do for others what they cannot do for themselves."

The State Laboratory undertakes work of the above nature at a considerable disadvantage, particularly hampered by its long distance effort and the consequent loss of time. In doing work of this nature for a locality, such as this city for instance, it may be possible that at least three days elapse between the time of taking a specimen to the time of receipt of the laboratory report on the examination of such specimen. Operating at such a distance it is, of course, impossible for the laboratory worker to maintain any personal touch with the clinician engaged in the case of disease of which the laboratory diagnosis is requisite.

Because of long distance and loss of time in many operations susceptible to laboratory diagnosis, our State Laboratory can render very doubtful utility, if any, because of the difficulty of transporting specimens and their receipt at the laboratory with sufficient promptness to secure a sufficient freshness to permit a successful laboratory operation and diagnosis.

As an illustration of this difficulty, I would point out to you the very great work that has been accomplished in recent years and is still being carried on by the operation of local laboratories for the investigation and control of typhoid fever in the Rhine Valley of the German Empire. By reason of operation of such laboratories *in the locality*, it has been possible to develop methods of laboratory diagnosis and control, operating often with fresh stools of patients, convalescents, and suspects, to control the absence or presence of typhoid bacilli and consequent measures of precaution and quarantine to eliminate the dangers of infection with the germs of this disease by contact in direct transmission or carrier. There is undoubtedly a large field for work of this nature in this State.

After the first steps of ridding public water supplies of dangerous fecal pollution and other, so to speak, gross sanitary measures for protection of the public from generalized typhoid epidemics, comes, and will come with greater intensification, the necessity of further diminishing the typhoid death rate here of 12 to 16 per 100,000, whereas there are very populous European cities and countries with a typhoid death rate perhaps as low as three.

It is encouraging to feel that the typhoid death rate of this State has fallen so tremendously as our vital statistics show in the last 15 or 20 years, but it must descend far lower to reach anything that might be called a permissible typhoid mortality in a highly civilized and sanitarily developed country. As the typhoid mortality approaches a permissible minimum, each step in its further reduction requires more and more concentrated effort to discover and eradicate the more and more seldom occurring and, therefore, more difficultly found sources of infection. In such intensification of sanitary control, a system of local laboratories, such as those now operating in Germany, is absolutely necessary.

The problem of better laboratory work to help in the eradication of typhoid fever sources is constantly coming to our State Laboratory and, of course, it is our desire to perform every possible service and undertake every possible means to accomplish this important laboratory control. We find, however, an immediate difficulty when contemplating any measure of laboratory examination of stools for the discovery of the typhoid bacillus and consequent laboratory control, diagnosis and assistance in quarantine measures. The difficulty is that of the long distance for the transport of specimens and the consequent loss of time, whereby such specimens of stool do not reach the laboratory promptly enough nor in a condition fresh enough to permit any efficient examination or effort to determine the presence of typhoid bacilli in these specimens.

It is a very simple procedure for the laboratory to make such examinations with fresh specimens. A local laboratory could render great assistance in all such cases where specimens could be delivered in a fresh condition and immediately examined. Similar conditions exist and determine the advantage of a local laboratory for undertaking work with blood specimens and in particular such reaction tests as the Wassermann in diagnosis of syphilis.

But the particular field of attack for a beginning county laboratory is in my opinion, a campaign to make known to all of the local physicians exactly the way and extent in which laboratory facilities can be utilized in their work. It has been pointed out why the State Laboratory is seriously hampered by long distance, among other things, because there can be no personal relation of the laboratory worker with the clinician. Without this close association of the two parties engaged in the care and control of disease, a serious loss of opportunity is caused to each party.

Without the personal association and consequent

conversation and verbal information on each case, the laboratory worker is confined absolutely to the examination of a specimen of which he has very limited data and to that extent possibilities, of his diagnosis, of his suggestions of further work, examination or action in relief, must of necessity be eliminated. For this reason the clinician realizing the limitations of the results reported to him, fails to realize the great advantage and multiplicity of opportunities in which a laboratory should be utilized by him.

I believe that the clinician far removed from an active laboratory assistance, and by the limits of time and other occupation unable to keep up his own laboratory technique, gradually drifts away from the best utilization of laboratory resources. It must of necessity be so, because even the laboratory worker finds the utmost difficulty in addition to the time of his laboratory work to maintain the amount of reading to keep himself informed of each progressive step in laboratory utility to clinicians. If then the laboratory worker himself finds it difficult to keep up such information, how could it be considered possible for the clinician to know to what extent modern laboratory developments bring new assistance and precision to his work.

It is, therefore, in my opinion the most important function of the members of the laboratory staff of a county laboratory to undertake this active missionary work to see that all of the practitioners of that community are kept informed of what the local laboratory can do for them in all of their cases.

It seems to me most important that particular effort and particular time be given by such a laboratory man or men, to maintain a constant and personal relation with every practitioner in the county, to keep him reminded of the ever present and ready assistance of the county laboratory and to point out to him in each occurring case to what extent the laboratory could be utilized and to secure such utilization of the technical staff and ability.

With a conception of such a broad field of endeavor and utility for a local laboratory, you will, I think, realize the speaker's feeling of the necessity of employing for laboratory staff the most competent bacteriologist and securing all of the time of such competent people for this work, which has no limitations.

If the opportunity to a county laboratory and its director is unlimited in such a field, the ultimate success of a local laboratory must depend upon ample financial provision, ample qualification of the technical staff, the thorough conception of the field and opportunity to be developed by the laboratory and its staff and then, and perhaps most important of all, upon the thorough interest and cooperation of all of the medical practitioners in the county.

In appearing before this society to-day, my object is to call particular attention of every member present to his particular responsibility for the success of this new undertaking. If each one of you realizes the advantage in your own clinical work of immediate, ever present laboratory assistance; if you intend to utilize these provisions and special opportunities for better grade of clinical work, you must ever remember that it is the duty of every practitioner to secure for each of his patients every possible aid to the maintenance or re-establishment of health. Realizing then to what an extent in modern medicine the laboratory aids the clinician, it is the duty of each practitioner to see that he utilizes every possible laboratory aid in every one of his cases.

If your laboratory direction realizes its opportunity, it stands ready to assist with its laboratory technique, with its skilled expert bacteriological or other laboratory scientific advice, every practitioner in the community. There should be no personalities or feeling; no local jealousies that should limit the reciprocity of the clinician to his laboratory, nor of the laboratory to each practitioner.

If the members of this society admit the necessity of a laboratory in their work, they should remember that the initial step to provide such a laboratory, experimental as it may be, has been made and, therefore, in so far as the present provision has their confidence and endorsement, that it is incumbent upon each one of them to utilize this laboratory in every possible way for the benefit of their own work and the immediate benefit of their patients.

If the practitioners of this county meet the establishment of a county laboratory in this spirit; if the direction of the county laboratory is endeavoring to render its utmost for each of the practitioners, insufficient as in my own opinion the present financial establishment of the laboratory may be, I can yet see that it is but the first step toward an ultimate success.

It would seem to me unquestionable that, if the laboratory as now established has the essential qualifications for a beginning, if the practitioners now assembled endorse this laboratory and undertake ful-heartedly its utilization, a component future financial provision may be obtained.

It seems to me that the responsibility for the success of this county laboratory rests with the members of this County Medical Society or the other practitioners in the district. If all unite to utilize such laboratory facilities to their utmost, to act in the heartiest cooperation of the technical staff and in appreciation of the efforts of the Board of Supervisors to provide further facilities for them, it seems to me that this evidence of the appreciation of the local practitioners, the constant results that will be evidenced to their patients, and the improved medical work of this whole community, will be of such satisfactory demonstration as to insure the best interests and endorsement of the Board of Supervisors of this county and a consequent future provision, that shall amply meet the needs of this institution.

DISINFECTION OF THE INTESTINE BY INSUFFLATION OF OXYGEN.

By M. GROSS, M.D.,

NEW YORK.

Man is born without bacteria; immediately after birth the meconium is still sterile. The first bacteria are found 10 to 17 hours after birth, consisting of cocci, yeast cells, and short rods (*Bacillus bifidus*, Tissier).

The intestinal flora assumes a more characteristic appearance after the infant has been fed, and the findings are totally different according to whether the food has consisted of breast milk or cow's milk.

In breast milk stools there are usually to be found *Bacillus bifidus* and *B. acidophilus* (Moro). Much fewer in number are *Bacterium coli commune* and *Bacterium lactis aerogenes*. Moro designates the infection with the last two as "specific," and it is

these bacteria which represent the parent stock of the "physiological" intestinal flora.

After cow's milk, the coli group is particularly prominent, as a rule, while bifidus and the other bacteria are less numerous.

In the normal stool of adults the intestinal flora presents an exceedingly prolific picture, the most striking phase of which consists in the ever-occurring flora of the coli group: *Bact. coli commune* and *Bact. lactis aerogenes*—the "friendly," "individual," "personal" flora.

Between this friendly flora and the individual being, a lifelong symbiosis is slowly developed; they are on terms of good companionship. These bacteria normally form metabolic products of an antiseptic nature (autotoxins), which display an elective, antiseptic action not only against "foreign," invading bacteria, but also against an overproduction of their own kind.

Schottelius was the first to demonstrate the usefulness of bacteria in an unmistakable manner: useful for the maintenance of life and growth of the individual. They assist in the process of digestion; the amylaceæ in the small intestine; cellulose in the cecum and ascending colon; fat in the lower intestinal section; protein chiefly in the large intestine. Some bacteria produce ferments, resembling the enzymes of the human organism, which aid digestion.

Ninety-nine per cent. of the germs introduced into the intestine from without are destroyed in the stools (Strassburger), destroyed by the friendly bacteria, by a normally functioning stomach, by a normally acting small intestine. In the latter organ particularly their development is arrested by the great bactericidal power with which the epithelium is endowed.

Thus it follows that the conditions of existence and development for "wild" pathogenic germs are not particularly favorable. But these conditions assume a different aspect when the "wild" germs by dint of numbers overpower the useful coli group, arresting its antiseptic work; conditions become worse if, in addition, there occurs irritation of the intestinal mucosa, or if irritation has already formerly been present from an unsuitable diet, laxatives, worms, motor disturbances, circulatory disturbances, etc. It is the irritation of the mucous membrane through which transudations develop that easily undergo putrefaction and thus form a still more favorable culture ground for the proliferation of pathogenic germs.

It is not yet definitely decided whether the bacteria of the coli group may themselves display a pathogenic effect either by increasing in number or by increased virulence. At any rate, certain bacteria of this group seem to form the transition stage between the friendly and the directly pathogenic bacteria (paratyphoid, typhoid, etc.).

Another non-settled point is whether the individual, friendly, intestinal flora as such is capable of perforating a normal intestinal wall or whether it must undergo a metamorphosis, by which the friendly relations are disturbed. It would certainly seem that a healthy intestinal wall is an almost insurpassable barrier to the invasion of friendly bacteria, unless they have undergone some hostile change. The invasion accomplished, they inundate the organism from the intestine with their toxins (autointoxication), or penetrate into the tissues (autoinfection).

Infections and anatomical disturbances often assist each other in pathological processes, forming a *circulus vitiosus* which may render it difficult to establish the primary causative factor.

The pathological conditions we have mainly to deal with are fermentation and putrefaction.

Normally, fermentation (carbohydrate fermentation) occurs chiefly in the small intestine, and putrefaction is more prevalent in the large intestine; but the extent to which both are present is not large enough to interfere with the healthy condition of the individual. Increased infection establishes fermentative and putrefactive dyspepsias which often, by the additional manifestations of inflammatory processes, develop into fermentative and putrefactive catarrhs.

The primary focus of these affections is often found in the stomach (atony, achylia, etc.), while in other cases they appear under the picture of a more localized intestinal affection. Examination of the stool after Ad. Schmidt's test meal will often enable us to demonstrate the disturbance of function and its localization.

We may here briefly summarize the most salient points:—

(1) Disturbed *motility* (increased peristalsis) never occurs singly and primarily; it always occurs as a secondary factor and following irritation of the mucous membrane.

(2) *Resorption* of carbohydrates and albumin is not disturbed even in serious affections; but the presence of fats in the stools points to disturbed resorption, provided affections of the pancreas and gall-bladder can be ruled out.

(3) Large quantities of undigested food remnants point to disturbed *secretion*. Such remnants are: Connective tissue in disturbances of gastric secretion. Muscular tissue in disturbances of pancreatic secretion. Fats in disturbances of the pancreatic and biliary secretion, and in disturbances of intestinal resorption. The presence of carbohydrates in the stools points to disturbed secretion of the pancreas and intestinal ferments.

In *fermentative* dyspepsia there is in the first place insufficient cellulose digestion; proteins and fats are here often found well digested. Here the acids formed in the decomposition of starch may irritate the intestine, cause transudation, fermentative catarrh, and decomposition, so that a putrefactive catarrh is added to the fermentative catarrh. These patients complain of lassitude and depression. There is no actual diarrhea, but the defecations occur more frequently.

In pure, non-complicated fermentative dyspepsia the feces are light yellow, frothy, of acid odor and reaction. Microscopically, large quantities of granulose bacilli, which stain blue upon addition of iodine, are found, especially in soft, pasty stools. We find mucus in fermentative catarrh only.

In *putrefaction* there is a mixed infection of aerobic and anaerobic bacteria. While *B. proteus* is held responsible for normal putrefaction (Escherich), pathological putrefaction is probably due to the anaerobic *B. putrificus* (Bienstock).

The feces are dark, of putrid odor, and alkaline reaction; they contain mucus and undigested food remnants.

The ileocecal valve serves normally as a barrier against putrefaction spreading toward the ileum. But should inflammation localize here, the valve will lose this power, and the putrefactive bacteria, which are otherwise confined to the large intestine, will now spread to the small intestine (Schmidt). Clin-

ically, these cases run under the picture of chronic appendicitis, but they will usually undergo no improvement, even after operation.

Therapy.—Dietetic and hygienic measures in the eminently chronic affections just named, which often require a stay in a sanatorium, may lead to satisfactory results; in many cases, however, relapses will occur, leading to invalidism.

A general dietetic law is the following: The food should be of the right temperature, in a properly dissolved state, of correct mechanical morselation, and chemically non-irritating. All articles should be fresh and predigested by appropriate preparation. Cellulose is badly borne; so is milk in many cases. Carbohydrates are allowed only as finely ground flour. Rice and potatoes are not borne well.

Patients may get slowly accustomed to "salicyl milk" (Schmidt), 0.2 salicylic acid being added to a quart of boiled milk. Abstention from carbohydrates and meat, or limitation of these articles will often be indicated. The use of *Bacillus bulgaricus* cultures is varying in effect and often negative.

Secondary processes, pointing to the stomach as the primary cause, will direct our attention to that organ.

Drugs, as a rule, are followed by much less satisfactory results than dietetic measures. Intestinal antiseptics are rightly held in disrepute; laxatives, especially saline waters, and often calomel, should be directly interdicted, as they interfere with the work of the friendly flora by the irritation of the protective mucous membrane and by the profuse diarrhea they occasion.

The idea of using oxygen as an intestinal antiseptic was taken up after Berger, Hirata, and others had shown that excessive bacterial proliferation could be restricted by introducing nascent oxygen into the small intestine. But the O_2 combination or peroxyde per os has not achieved any favorable results.

Ad. Schmidt, however, introduced oxygen directly into the small intestine by means of the "duodenal tube," and the results he reported were very favorable. (*Zentralblatt f. innere Medizin*, 1912, No. 1). We have since had occasion to repeat this treatment with our "duodenal tube" on a small number of patients and can fully confirm those favorable results not only in cases of pathological fermentation, but also in putrefactive processes.

The change occurring in the pathological intestinal flora after insufflation of oxygen can best be followed with the aid of the Weigert-Escherich method (Gram). This method supplies information on the intestinal flora and the relation of the putrefactive and fermentative germs to each other. There is no other method, aside from clinical measures, which so clearly indicates an improvement or an exacerbation. The technique, according to Alexander Schmidt, is the following:

(1) Boil 2 gm. of gentian violet with 10.0 c.c. of distilled water for half and hour and filter (stable); (2) 11 c.c. of absolute alcohol are mixed with 3 c.c. of aniline oil (stable); (3) 1 gm. of potassium iodide, 60 c.c. of distilled water (Lugol); (4) Aniline oil and xylol, in equal parts; (5) Xylol.

The feces are finally rubbed up with water and centrifuged, in order to separate the bacilli from the feces. Before staining, they are again centrifuged with alcohol.

The Stain.—Mix (1) and (2) in the proportion of $8\frac{1}{2}$ to $1\frac{1}{2}$ (stable for 2 or 3 weeks). The stain is applied on the slide for one-half minute and carefully tipped off with blotting paper. Then apply Lugol on the slide and immediately tip off again. Apply a few drops of aniline oil-xylol and let flow off; repeat until no more blue color is given off. Finally rinse with pure alcohol and let dry. Weak fuchsin solution (aqueous) is used for the after-stain.

We have adopted the following procedure for the oxygen insufflation: Our duodenal tube is introduced in the morning on an empty stomach down to mark 90 cm., which means about 30 cm. beyond the pylorus. This so-called "deep exploration" is particularly desirable for the present purpose, as it prevents the return-escape into the stomach of too large quantities of oxygen. The outer end of the duodenal tube is now connected direct, with the regulator of an ordinary oxygen jar, and the gas is slowly allowed to flow in. From time to time, when the patient complains of distention, the influx is interrupted. In this way we were able to administer any desired quantity of oxygen. We endeavored to apply a kind of "continuous gas bath" which may last from $1\frac{1}{2}$ to 2 hours.

Instead of making two insufflations a day, as advised by Ad. Schmidt, we allowed in one case the tube to remain in situ from morning till evening and administered the second insufflation in the evening. In the meantime the patient received liquid food per os, not through the tube.

Expulsion of odorless flatus could often be observed during the administration, showing that the gas had passed the ileocecal valve.

As a rule we carried out the following program:

In the first week 1 insufflation daily;

In the second week 1 insufflation every two days;

In the third week 1 insufflation every two days;

In the fourth week 1 insufflation every three days.

Disturbances which point to serious anatomical changes localized more in the large intestines (colitis, typhlitis, etc.) may require the applications of O_2 insufflation per anum in addition to the jejunal insufflation or alone. Ad. Schmidt also reports favorable results with O_2 insufflation of the colon, notably in intestinal catarrhs of children.

Both objective and subjective results after O_2 insufflation are often so striking that the patient as well as the physician willingly undergoes this test of patience. Fermentative and putrefactive dyspepsia as well as catarrhs are favorably influenced by insufflation of oxygen, and above all the annoying symptoms and pain are arrested. Admixture of mucus to the stool is only gradually overcome and is the last symptom to yield to the treatment.

Although we have so far treated only 9 cases, we feel that our method serves its purpose exceptionally well and is worthy of being tested by others.

The diet is most carefully regulated as before.

It is, of course, impossible, and a positive mistake, to try to clear the intestine completely of bacteria; our endeavors should be confined mainly to preventing overproliferation of bacteria.

The object of the dietary measures is above all to obtain a normal intestinal wall. An efficient intestinal mucosa will furnish the friendly bacteria with improved conditions of living, while the pathogenic bacteria are deprived of a favorable culture ground.

The insufflation of oxygen will prove of incalculable value, as it will exert a directly inhibitive or paralyzing effect upon the highly pathogenic bacteria (anaerobes) by rendering their condition of life unfavorable.

Following is the description of cases treated with insufflation of oxygen:

Case I.—*Chronic Fermentative and Putrefactive Catarrh.*—Miss A. L., 22. Family history negative. Was never ill until about a year ago, when the present trouble commenced with cramps in the abdomen and increased fecal evacuations. Slight improvements were of short duration, the ailment persists almost unchanged to this day of our first examination. The first stool in the morning is sometimes formed; this is followed by 3 or 4 stools of soft consistency during the forenoon; smaller quantities are some days evacuated at rare intervals also in the afternoon. Really diarrheal, fluid stools are said never to have occurred. Large, macroscopically visible quantities of mucus were always present. A number of therapeutic measures, instituted by others, including a six weeks' stay in a hospital, were not attended with any very noticeable success. Patient is incapacitated from work and is mentally and physically depressed. Appetite varying. There never was vomiting, but often nausea. Menstruation regular. Patient is pale and, contrary to expectation, still rather well nourished. Pupils very large, teeth good, no fetor ex ore. The examination of the chest is negative. Urine is normal, indican is increased. The gastric functions have been found normal.

Proctoscopic.—Mucous membrane hyperemic, easily bleeding, granulated in places. Ulcers could not be found. No amebae could be found in the mucus adhering to the mucous membrane of the intestine. No parasitic eggs in the feces. The stool which the patient brought is of somewhat soft consistency and permeated with large mucous flakes. Color dark, dirty brown, interspersed with light parts. Reaction alkaline. Odor offensive.

Microscopical Examination.—There is neither fat nor connective tissue. A few muscle fibers and an enormous quantity of granulose bacteria. Mucus. No blood. The stool after Schmidt's test meal is somewhat better formed, enveloped by mucus, color light, reaction indistinct, odor offensive. Microscopical examination shows traces of fat in the shape of neutral fats and soap needles, many undigested muscle fibers, granulose bacteria in large quantities, mucous threads. The patient is put upon the oxygen insufflation treatment.

Third Day.—Stool somewhat better formed, uniformly dark brown, has a peculiar moldy odor, but not putrid. Mucus in large quantities. Granulose bacteria distinctly decreased.

Eighth Day.—No subjective pains. Stool formed, defecation once or twice daily; color nearly normal; still offensive; little mucus.

Fourteenth Day.—Subjective condition good. Stool.—Mucus only in traces, not offensive; bacteria few, nearly normal.

End of the Fourth Week.—Same findings; mucus only microscopically visible.

The diet consisted at the beginning of little meat of an easily digestible variety, meat jelly, little cream, butter, cream cheese, toast, biscuits; one or two eggs daily, fine cereals with sweet butter; no rice or potatoes; vegetables only after the condition improved, as finely minced spinach, also fruit jelly. Milk is better borne recently and is only given boiled with fine flour. It will still be necessary for the patient to adhere to this strict diet for another few months.

Case II.—Colitis.—Mrs. L. B., married, mother of one child. At the age of 5 she contracted a fever (typhoid?). About 18 months ago she had a severe attack of hemoptysis. Tubercle bacilli were found in the sputum. A stay in the mountains for eight months improved her condition to such an extent that she gained 30 lbs. in weight and there was no more coughing. Nor were there any more tubercle bacilli, as demonstrated by repeated examinations. During the last weeks of her stay in the country she acquired her present intestinal complaint which set in acutely with pains and violent diarrhea. The pains were abated, but diarrhea persisted to a certain degree; it occurred especially after partaking of badly digestible food. The stools were evacuated in the morning hours in rapid succession, and there were seldom complaints during the rest of the day. She lost considerably in weight.

Examination.—The old tuberculous attack which had been cured can still be demonstrated at the apex of the right lung. The spleen is not enlarged. The region of the gall bladder is not sensitive, but there is some slight sensitiveness in the region of the sigmoid. The stool is soft, dark, alkaline, of offensive odor, and contains distinct mucus. The microscopic findings reveal fat and fairly well digested meat. There are a large number of granulose bacilli which stain blue with iodine. There are no parasitic ova, especially no tubercle bacilli.

The proctoscopic examination discloses a hyperemic mucosa, easily bleeding, and dull in places. No amebae were found in the freshly obtained mucus. The urine contained hyaline casts, no sugar, indican in distinct traces. Urobilinogen negative.

After a dose of castor oil and a rigid diet, in which milk, fruit, vegetables, and certain starch products were excluded, the subjective complaints underwent rapid improvement, but with the slightest dietary error the old complaints reappear. The stool has never quite lost its pathological appearance, not even when the rigid diet was observed.

The patient then received insufflation of oxygen per anum for two weeks, which had the desired result. After as few as six insufflations the stool assumed normal appearance, which means that there was no mucus, no offensive odor, and that it was normal in consistency and color; the granulose bacilli were reduced in quantity. Two weeks after the cessation of treatment the stool was still firm, even after freely partaking of carbohydrates. There are only slight manifestations of fermentation, but no putrefaction. The patient's subjective condition is very good.

Case III.—*Typhlitis.*—Mrs. T. M., 32 years old, mother of one child. Does not remember ever having been seriously ill, but has suffered for years from constipation (hereditary). About six months ago disagreeable sensations commenced in the abdomen which were often so unpleasant as to become painful. They then assumed a more constant character and have been latterly chiefly localized in the right abdominal region. The pains radiate to the right, backward and upward, rarely to the right hip. Brisk movements sometimes aggravate the pain. The pains occur independently of meals, but the patient has a feeling of distention after eating. Advice by another physician to undergo an operation (appendicitis?) aggravates her mental depression. There is a systolic murmur at the apex of the heart the heart, however, is not enlarged. The liver is neither enlarged nor sensitive. The right kidney is not palpable. There is a distinct sensitiveness to pressure not only at the cecum, which is slightly displaced downward, but also along the ascending

colon up to the right costal arch. There is also cooing and slight movability of the parts. The function of the stomach is normal. The uterine appendages are likewise normal.

The urine contains no albumin, no sugar, traces of indican. Absence of urobilinogen according to Ehrlich's "aldehyd" test excludes an affection of the gall-bladder. Stool dark, rather firm, offensive, and covered with mucus in places.

Microscopical Findings.—Food well digested. Triple phophate crystals and fatty acid needless present, but no parasitic ova or amebæ.

Local application of ice for 10 days, semifluid but nourishing diet and warm soap enemas every evening effect rapid improvement subjectively, but not objectively, as there is still some, though reduced, sensitiveness in the cecal region and mucus in the stool. Oil injections which were now prescribed, entirely overcame the chronic constipation. After some time, however, the pains returned, showing that there had been improvement in the local conditions, but no cure.

From now on, the patient received daily insufflations of oxygen per rectum. The rectal tube, not very large, is directly connected with the oxygen cylinder, the gas is slowly introduced, and interrupted as soon as a feeling of tension occurs. In this way it is possible to keep the patient under insufflation for an hour. The colon was inflated up to the ileocecal valve and probably beyond, as the abdominal region below the umbilicus was distinctly distended. These "gas baths" were continued for 14 days, with the striking result that the conditions of the stool became normal (in color, odor, and absence of mucus). The result is equally satisfactory in reference to the ever-present local pressure pains, which have entirely disappeared. Insufflation was continued for another week. Up to the present, or four weeks after treatment, there has been no relapse. Correct diet and occasional enemas keep the stool in order.

The following additional remarks in regard to the technique of rectal insufflation of oxygen may be in place:

In some cases it may be necessary to employ a mechanical attachment in the form of a perforated trunkated cone of hard rubber, introduced with the pointed end toward the anus, to prevent the escape of gas. We have obtained the desired result in most cases by digital compression.

Part of the insufflated gas seems to be rapidly absorbed in this case, too, or else is distributed in the higher intestinal regions (ileum), because even a strong feeling of tension is rapidly relieved by a short interruption of the insufflation.

40 East Forty-first Street.

Circumscribed Lichenification (Névrodermite).—S. E. Dore reports the case of a patient, aged 40, who presented a patch of circumscribed lichenification in the right lumbar region which had existed for three years. The plaque showed the characteristic aggregation of glistening round papules, with a certain amount of thickening and slight pigmentation of the skin, but the three zones described by Brocq could not be differentiated. During the past four months the patient had had similar patches on the arms, thighs and legs, but these had recently disappeared. There was a generalized prominence of the follicles, especially on the legs, and the hairs were rubbed away by the constant scratching. According to the patient's statement, the pruritus preceded the formation of the skin lesions.—*Proceedings of the Royal Society of Medicine.*

Medicolegal Notes.

Diagrams in Supplement of Evidence.—In a prosecution for assault with intent to kill a physician and surgeon testified concerning the wounds upon the victim's body when he was called to give medical attendance immediately after the shooting. He illustrated his testimony with a diagram which he had made of the man's body and the location of the wounds, and at the end of the testimony the diagram was introduced in evidence over the defendant's objection. It was held that the diagram was admissible, not being introduced as independent testimony, but merely as a part of the witness' testimony.—Hankins v. State. Arkansas Supreme Court, 145 S. W. 524.

Malpractice—Degree of Skill in Osteopathic Treatment—Hearsay Evidence.—Suit was brought against a school of osteopathy and its vice-president for malpractice in treating the plaintiff for disease by osteopathy. The evidence showed that the plaintiff had been a trained nurse who matriculated in the school, paying a fee which entitled her to free osteopathic treatment by members of its faculty who were doctors of osteopathy duly qualified for the practice. The vice-president treated her in 1902 for some ailment from which she was suffering. In 1905 she became unable to practise her profession of osteopathy and became a confirmed asthmatic. At the time of the trial she had a distinct deformity of the thorax, consisting of an abnormal position of the breastbone and the ribs. She introduced evidence tending to show that her condition was caused by the application of the "knee treatment" by the defendant physician. The defendants introduced evidence tending to show that the plaintiff suffered from asthma when she came to the school and that the disease had since gradually progressed until she had become a confirmed asthmatic. They also introduced expert testimony to show that the result of the injury the plaintiff claimed to have received would have been much more serious than that admitted by her to have followed it. The evidence was held to justify the submission to the jury of the issue of negligence in the treatment, against the objection of the defendants that the physical facts contradicted the evidence and showed the impossibility of negligence. The Missouri statute expressly recognizes osteopathy as "a system, method or science of treating disease of the human body," and also the defendant's school as the exponent of its method and practise. It also expressly authorizes persons having diplomas from that or any other legally chartered school of osteopathy to treat diseases of the human body according to such method. It was therefore held that an instruction that if the treatment was improper and not such as an ordinary skilled man would have given the plaintiff under the circumstances the verdict must be against the corporation and its agent was objectionable because it ignored the fact that the plaintiff had submitted to the treatment by osteopathy and gave the jury the right to find that osteopathic treatment was not a proper treatment, and that the person administering it was not ordinarily skillful. The error was, however, held not to be prejudicial where the undisputed evidence showed that the treatment as described by the plaintiff was improper according to osteopathic methods. Judgment for the plaintiff was reversed because the plaintiff was permitted, against the objection of the defendant properly made, to testify on the trial that the osteopath who, at the instance of the defendants, treated her after the date of the alleged injury for the ailments from which she was then suffering, told her that her second, third, and fourth ribs were broken, caused from the defendant physician's treatment. The cause of her condition being the real question in issue, such hearsay evidence was held to be inadmissible.—Atkinson v. American School of Osteopathy, Missouri Supreme Court, 144 S. W. 816.

Qualification as Expert on Insanity.—A lay witness who has handled a great many insane persons, and has observed and studied them in the course of their transfer by him from one point to another and who has "lately read medical works on the subject, and studied in that way" is not thereby qualified to testify as an expert on insanity. The general rule is that only medical men—persons licensed by law to practise the profession of medicine—can testify as experts on the question of insanity. An exception, it was said, may perhaps be recognized where the witness has made a protracted and systematic study of mental science and disease under approved conditions. But the rule is that the competency of an alleged expert is addressed to the sound discretion of the trial judge.—Odom v. State, Alabama Supreme Court, 56 So., 913.

MEDICAL RECORD.

A Weekly Journal of Medicine and Surgery.

THOMAS L. STEDMAN, A.M., M.D., EDITOR.

PUBLISHERS

WM. WOOD & CO., 51 FIFTH AVENUE.

See fourth page following reading matter for Rates of Subscription information for Contributors and Subscribers.

New York, November 30, 1912.

THE SPIROCHETES.

THE question as to whether the spirochetes are protozoa or bacteria, that is animals or plants, is one about which there has been much controversy in recent years. The distinctions which decide such a question are purely arbitrary and such a controversy is only of academic interest. At the time of the earliest descriptions of spirochetes, some of those organisms which we know to-day as bacteria were also regarded as animals. That this is true is shown by turning to the beautifully colored illustrations published by Ehrenberg in 1838. There one finds accurate representations of a large spirochete which occurs in pond water as well as of some of the bacilli; both being regarded as animalculæ and so classified; in fact, the term bacilli of modern usage came from the former zoological group name, *Bacilli*. It was only after the introduction of methods of artificial cultivation by Pasteur and his followers that we came to have exact knowledge of the bacteria. Knowledge of a great many varieties of spirochetes was gained, however, simply by observing their differences in form and behavior; large varieties like those which commonly occur in the stomach of the oyster, and small varieties like those which occur in the mouth of man. The animal nature of the larger varieties with crista and elastic bodies can hardly be denied; it is the more minute spiral organisms that have been the subject of controversy. These small spirochetes, many of which are harmless, are of such widespread occurrence, that the mere finding of a spirochete associated with a disease process is not sufficient to prove the causal relationship. In fact, from 1837, when a spiral microorganism was believed by one observer to be the cause of syphilis, until as late as 1905, all observations, except those of relapsing fever, in regard to the pathogenicity of spirochetes were doubted. It was then that Schaudinn recognized the differences in form between the organism of syphilis, *Treponema pallidum*, and the common varieties of spirochetes. With these correct descriptions and definite names of the different species, the knowledge of spirochetes became greatly advanced and the scientific world became convinced that an organism of this nature is the cause of syphilis. We should remind ourselves that it was just such niceties as zoologists quibble about that finally resulted in the determination of the pathogenic spirochetes.

The next step was to cultivate these and make them satisfy the postulates of Koch. Little by little it was shown how spirochetes might be cultivated, and to-day Noguchi has successfully cultivated in artificial media all of the known pathogenic species, except possibly the variety associated with Vincent's angina. It was by virtue of an animal quality of the most elusive variety, the spirochete of syphilis, that he succeeded in capturing it free from all bacteria; for he obtained his pure culture from where the spirochete had moved out into the solid media. These pure cultures when reinoculated into animals produced the disease from which they were originally obtained and thus conformed to the postulates of Koch.

In his latest publication (*Journal of Experimental Medicine*, Vol. XVI, No. 5, November 1, 1912), Noguchi reports having successfully cultivated *Spirochæta gallinarum*, the cause of a febrile disease of chickens. In itself this is of no great importance to the practitioner of medicine, but some of his findings are of general interest. In the first place he has found that these spirochetes do not pass through the filter, through which they were at one time believed to be able to pass. This is interesting because it demonstrates that in the past the filter may have only hindered the progress of morphological research instead of aiding it. Statements in regard to filters, however, cannot be absolute, as one must consider their thickness and quality as well as the pressure and length of time used. In the second place he has shown that these spirochetes can be propagated indefinitely in artificial media, and thus disproves the idea that another phase of their life cycle, passed while contained in the bodies of ticks, is essential to their continued propagation.

This important work of Noguchi in obtaining pure cultures of the various pathogenic spirochetes makes it possible now for scientists to come closer to obtaining perfect remedies for the diseases caused by these organisms, and, let us hope, remedies unencumbered with proprietary rights. But to the question as to whether they are protozoa or bacteria there is no answer, for just at the time spirochetes were found to grow in solid media, the supposed exclusive manner of growth of bacteria. Anna Williams (*Journal of Medical Research*, Vol. XXV, 2) succeeded in cultivating on solid media, without symbiotic bacteria, amebas, the animal nature of which has never been questioned.

THE MAKING OF THE PHYSICIAN.

AT the one hundred and seventy-ninth session of the Edinburgh Royal Society, held on October 18 last, Dr. Robert Hutchison of London delivered an address (*Medical Press and Circular*, October 23, 1912), in which, taking as his text the saying of Bacon that "reading maketh a full man, conference a ready man, and writing an exact man," he developed it into an instructive address on the function of such a society in the medical curriculum. The use of a library was not

only to provide material for reading, but for reading in the proper way, to get up information concerning subjects in which one was really interested for the time being. Next to being really well read in a subject came the ability to find out in what books the best information could be obtained. If the student learned nothing else than how to use the Index Medicus, he had gained a great deal. He was of the opinion that the student ought to depend largely on text-books, and lesson journals in his work. Ephemeral literature was rather dangerous fare. The older writers of the last century ought never to be neglected. In reading them one misses, perhaps, the scientific treatment of the day, but one gains a more practical viewpoint than is induced by much of the present-day laboratory work. One comes to see that many so-called new discoveries are in reality but old truths; and lastly, one finds that a text-book need not be dry, but may have charm and literary style. Hutchison advised the medical student to endeavor to become versed in general literature, for it was essential that the doctor of to-day should be a well-read man; the time was past when it was necessary for him only to know of drugs and the symptoms of disease.

Debates supplied the readiness of mind begotten of what Bacon called conference. It was necessary that the physician should be a more or less ready speaker, for nowadays he was often called on to explain in clear and concise language medical and scientific matters, especially in the domain of preventive medicine, to the general public. The art of speaking could be acquired only by practice, and debates afforded such practice. Another most valuable qualification for a doctor which could be acquired at society meetings was the power of suspending judgment until all the facts were known; and, lastly, he would learn—at least some of the members would learn—to bear with fools gladly.

It certainly is becoming more evident that the physician should be a well-read man, and the time is rapidly passing when a man of little or no education could join the profession. A general education tends to widen the mind. The faculty of extracting the most valuable information from books is not common, but the advice may be given to read with this object in view only standard works. Promiscuous and ill-regulated reading is nothing less than mental dissipation, which is antagonistic to that concentration of mind at which all students should aim.

The medical student should not neglect general literature, both as a relief from technical subjects and as a means of widening his knowledge. As for speaking, there can be no doubt that the doctor should practise the art, for, as a rule, he does not shine as an orator. The doctor of the present time should be an all-round man, and with this end in view he should be thoroughly grounded in the humanities ere he commences the study of medicine, for it must be borne in mind that his medical curriculum is so full that he will have little time to spare for outside studies when he has entered upon his medical studentship.

EUGENICS AND EUTHENICS.

THERE appears to exist at the present time a marked tendency on the part of the advocates of eugenics and euthenics severally to magnify the influence of their especial pet theory. Those who hold that heredity is at the base of most human ills claim that environment counts for little, while per contra the supporters of euthenics insist that environment is at the root of all the trouble. It is difficult, indeed for the present impossible, to hold the scales evenly and to adjudge to each factor the amount of influence it exerts. Much ink is being spilled in this endeavor, but we appear to be as far away as ever from arriving at a just conclusion. When the greatest authorities on the matter express entirely divergent views, what are the humble rank and file to think?

In the *Popular Science Monthly* for November, 1912, Professor Leon I. Cole takes the ground that acquired characteristics are in no specific sense inherited, and argues, therefore, that the proper place of environment in a eugenic program is not a simple question. In the first place, it is very difficult to separate these characters which are the results of inborn determinants from those which are produced solely by reaction to environment. Or, it may be, as is probably usually the case, that both influences are at work in the expression of the same character. Cole expresses decided views as to the menace of immigration, stating that the scum of Europe is imported to supply the cheap labor by which the rich man may amass his millions. As to the decreasing birth rate of civilized countries, the writer says again what many authorities have been endeavoring to impress on the minds of statesmen, philanthropists, and social workers for years, that the dangers arising from this fact do not consist so much in the falling birth rate itself as in the fact that, because of it, the worst and not the best types are being reproduced.

There is really no cause for a conflict between eugenics and euthenics. Neither can accomplish the results that its enthusiastic followers claim, but that is no reason why each system should not effect much. The two methods should work together in harmony and there is no doubt that intelligent co-operation will tend to produce a better race mentally and physically. The eugenists, however, while laying much stress on the successful breeding of animals and plants, apparently forget that human beings are neither animals nor plants. If the sole aim were physical excellence then careful breeding would to some extent answer the purpose. But human beings are different from animals and plants, in so much as brain power is of equal if not of greater importance than physical perfection or even good health.

As a matter of fact, supreme powers of the body seldom accompany the agile brain, and perhaps more frequently than not a high order of brain is lodged in a creaky tenement of clay. There is much to be said for eugenics and euthenics, but the eugenists are somewhat too apt to be dim of sight with regard to the merits of any method other than their own.

RELAPSING FEVER AT PANAMA.

An interesting outbreak of relapsing or seven-day fever has been reported in the Canal Zone by Surgeon J. C. Perry of the U. S. Public Health Service (U. S. Public Health Reports, Nov. 1, 1912). This disease, it will be remembered, is caused by the spirochete of Obermeier and is characterized by a definite febrile course of about six days, followed by a remission of a similar duration, and this remission and relapse may be repeated several times. The disease has always been associated with the same conditions which favor the spread of typhus fever, overcrowding and filth apparently playing a more important part than sex, age, season, or other factors. Since the spirochete is found in the blood in the febrile stage, it would seem probable that bedbugs, ticks, and other biting and blood-sucking pests might be important agents in its transmission. The disease has been produced in man and monkeys by infected blood. The spirochete has not been found in the excretions or secretions. Relapsing fever has seldom been seen in the United States since the New York and Philadelphia epidemic of 1869.

Enough has been said to show the interest attaching to the outbreak reported by Perry. In all, 62 cases of the disease were found in the Canal Zone, of which 43 were treated in the Ancon hospital. Most of the cases developed in the Ancon post-office and the residence building for bachelors opposite to it. All were in adults and all but two were in men. It is a matter of interest that no cases were found in Spanish or Italian laborers, or in negroes.

The cases presented the usual clinical picture of the disease. Fifty per cent. showed a rash, confined to the legs, feet, forearms, and hands. In a few it was finely petechial. Curiously the fever consistently ran a single course after continuing with remissions for six days, declining by slow crisis in from twelve to fourteen hours.

This outbreak illustrates forcibly the need of a hospital in the Canal Zone so situated and conducted that it could utilize the wealth of new clinical material which will be found there for study and observation. Considering the great intercontinental traffic which will center at the isthmus upon the completion of the canal, and the large number of sailors who will congregate or pass through there from all parts of the world, it is evident that a marine hospital will be a prime necessity. The Public Health Service now operates 23 marine hospitals in the larger ports of the country, besides 120 other stations, for the medical relief of American merchant seamen. In addition to this there is the large tuberculosis sanatorium at Fort Stanton in New Mexico. This medical relief is free for American sailors and only a nominal sum is charged for the care of foreign sailors. A marine hospital will certainly be needed at Panama and its maintenance there will afford excellent opportunities for the study of epidemic and other diseases, not only those of the tropics but those peculiar to every nation and clime on the face of the earth.

International Standardization of Disinfectants.

The question of standardizing disinfectants was discussed at the recent International Congress on Hygiene and Demography held in Washington. Two resolutions bearing on the subject were passed. First, "that the disinfectants used in different countries should be controlled by a simple bacteria test, capable of being easily effected, and that a committee from this Congress confer with the Committee of the International Congress on Applied Chemistry to define such tests." Second, "that the Permanent International Commission of the Congress of Hygiene and Demography be requested to appoint a committee of not less than five members to represent the Congress for that purpose." These resolutions are decidedly steps in the right direction and should result in the establishment of a method for the standardization of disinfectants which shall be uniform and satisfactory. At the present time, however, opinions differ somewhat widely with regard to the means to be adopted whereby the germicidal value of disinfecting preparations may be fixed. In this country, even more than in Europe, adequate measures for standardizing disinfectants are needed, as practically any preparation may be manufactured and sold concerning which the public have no mode of discovering whether such are effective or otherwise. In Europe and in Great Britain, although it is acknowledged that the methods employed to protect the public are by no means wholly satisfactory, yet some restraint is placed on the manufacture and sale of manifestly useless disinfectants. As is pointed out in the *Lancet* of October 26, its commission which investigated the matter some few years ago found that different lines of experimentation produce different results, and therefore probably a considerable time will elapse before a perfect or entirely satisfactory method will be evolved. The sooner the resolutions passed at Washington are acted upon, the better it will be for the public. There would seem to be no valid reason why an international investigation of this nature should not be commenced at once and the question of disinfectants placed on a satisfactory basis for all time.

Citrate of Sodium in Gastric Pain.

Remedies for the gastric pain which so frequently occurs after eating have been and are legion. As is pointed out by the Paris correspondent of the *Medical Press and Circular*, it is generally attributed to hyperacidity and treated by alkalies, chalk, magnesia, and especially by bicarbonate of sodium. Almost, however, in the same measure as these alkalies relieve the pain, at the same time they stimulate the secretion of the hyperacid gastric juice. It has been stated on the authority of Hayem that certain patients who had prolonged the use of bicarbonate of sodium eventually found that it had no effect on their sufferings. Wright in England was the first to use citrate of sodium for gastric pain and recently it has been introduced into France and prescribed with great success in gastric intolerance of children. Lacheny, who has been writing on the matter recently, describes how sodium citrate relieves gastric suffering coming on three or four hours after meals. Not only, he says, does it relieve gastric pain, but it has also a remarkable curative effect on the morning vomiting of drunkards.

News of the Week.

Health of the Canal Zone.—The reports of the Chief Sanitary Officer of the Isthmian Canal Commission for the months of August and September, 1912, gives the total number of deaths from all causes among employees as 42 and 39 respectively, making an annual average rate per thousand of 10.01 and 9.19. The total death rate among the entire population was 25.69 and 22.42 for the two months, the calculations being made on the basis of the census last February which gave the population of the cities of Panama and Colon and of the Canal Zone as 62,810. The principal causes of death were: Tuberculosis, 16; lobar pneumonia, 11; malaria, 3; dysentery, 1. Twenty-two deaths were due to external violence. No cases of yellow fever, smallpox, or plague originated on or were brought to the Isthmus during the time covered by the reports.

Lloyd-George's Terms Again Rejected.—At a meeting of the British Medical Association on November 19, a resolution was adopted declaring that the proposals of the Chancellor of the Exchequer in regard to the compensations of doctors under the Insurance Act, are "unworkable and derogatory to the medical profession, and consequently the profession declines to undertake service under the act and the regulations as at present instituted." The members of the association, however, expressed their willingness to confer with the authorities with a view to settling the disputed points.

Hospital Permit Denied.—The application made by the Westchester County Board of Supervisors for permission to establish a hospital for tuberculosis patients at Yorktown,, N. Y., has been denied by State Commissioner of Health Porter. This decision is final, and is based upon the objections of the New York City authorities and civic organizations on the ground that the establishment of such an institution at Yorktown would be dangerous because of possible contamination of the water supply of New York.

Sanitary Science.—Three courses in sanitary science are being offered at the Tulane University of Louisiana, New Orleans, for medical, science, and engineering students specializing in sanitation. Instruction is given in the School of Tropical Medicine which is a part of the university.

National Housing Association.—The second National Conference on Housing in America will be held on December 4, 5, and 6 in Philadelphia, which has been selected because it has more to show in the way of constructive effort than any other American city..

Postal Raid.—By concerted action in seventy-two cities in twenty-two states, post office inspectors on November 20 arrested or prepared to arrest 175 men and women charged with having used the mails in the sale of illegal medical and surgical devices. The raids, which were ordered by the Postmaster-General after six months' preparatory work, embraced alleged quack doctors, druggists, and proprietors of so-called medical establishments. Two arrests were made in New York. The raid, which as a whole was the largest ever made in the history of the Post Office Department, furnished an excellent example of the power which can be exercised through the postal laws to wipe out illegal practices apparently beyond the control of the State authorities.

Pregnancy after Oophorectomy.—Dr. George W. Kosmak, of 23 East 93d street, New York, writes that, being interested in this subject, he would appreciate information from any of our readers who have had cases of this kind, and care to favor him with an account of the same. The facts desired involve the question of the relief of sterility following this operation, the character of the labor where pregnancy has occurred, the indications for removal of the ovary, the pathological condition of the same, an account of any other operations done at the same time, the character of the menstrual period subsequent to the operation, the date of birth of subsequent children, and their sex. A blank form has been prepared which embodies these questions and which will be forwarded in reply to a post-card request.

Public Clinics.—Commissioner Drummond has ordered that on and after October 1, 1912, all clinics held in the amphitheatres and operating rooms of the hospitals of the Department of Public Charities shall be open to duly licensed graduates in medicine and to the students in all regularly organized medical schools and colleges.

For the convenience of those desiring to attend the Clinics, the cards of admission have been placed at the Academy of Medicine, 17 West 43rd Street, Manhattan, and the Medical Society of the County of Kings, 1313 Bedford Avenue, Brooklyn, at which institutions they may be obtained on personal application by all regularly registered physicians. Commissioner Drummond has also issued an order to the Superintendents of the several hospitals, directing that each day before 9:30 A. M., an explicit list of Clinics, both medical and surgical, to be held on that day shall be telephoned to the Academy of Medicine and the Kings County Medical Society, in order that those physicians who wish to attend the Clinics may have timely information as to their precise nature, and select such as are deemed of special educational value to them. A calendar of the Clinics to be held during the month of December will be found on page 1015. A schedule of the Clinics to be held during the present season will shortly be issued in pamphlet form.

Associated Clinics.—Delegates representing twenty-nine dispensaries in the Borough of Manhattan, New York, met at the Academy of Medicine on November 20 and organized an association to be known as the Associated Out-Patient Clinics of the City of New York. The aims of the association are the co-ordination of the work of existing dispensaries and clinics, the elimination of unworthy applicants for treatment, and the promotion of proper standards of treatment and of economy and efficiency in dispensary management.

Medical School Needs.—In his annual report for the year ending June 30, 1912, President Nicholas Murray Butler of Columbia University, New York, places the amount of money required to meet the present needs of the university and the general schemes for its development at approximately $16,000,000. Of this $6,000,000 is the estimated cost of removing the College of Physicians and Surgeons from its present site, in accordance with the agreement with the Presbyterian Hospital. Concerning this agreement, President Butler, after pointing out that the affiliation so far accomplished has not been accompanied with any of the difficulties feared, says: "It is now clear to hospital managers that the mere cure of the ill and suffering is

only one-half of a hospital's business. The other half is to assist in the study of disease and in the better training of those upon whom is to devolve the responsibility for the prevention and cure of disease hereafter." President Butler asks also for $1,000,000 in order that the university may establish a fitting Institute of Hygiene and Preventive Medicine.

Gifts to Charities.—By the will of the late Dr. Frank J. Parker of New York, the Yale Medical School receives a trust fund of $1,000, the income to be awarded to the student who shows the best qualifications for succeeding in the practice of medicine, personality, habits, neatness of dress, common sense, and kindness and human feeling in the treatment of the poor and unfortunate, to be considered. To his native town of Branford, Conn., Dr. Parker gave thirteen acres of land for a public park in memory of his parents, and to the Manhattan Eye, Ear, and Throat Hospital, New York, of the staff of which he was a member, a half interest in his city property, the value of which is not stated.

The Presbyterian Hospital of Philadelphia receives $5,000 for the endowment of a free bed by the will of the late Miss Elizabeth Norris Brown; the Children's Hospital also receives the sum of $1,000.

The Boston Lying-In Hospital, as residuary legatee under the will of the late Mr. Francis Amory of Boston, will benefit to the extent, it is estimated, of $500,000. The sum of $25,000 is given to the American Academy of Arts and Sciences in memory of Thomas Amory, with the provision that the fund shall be allowed to accumulate for twenty-one years and that the income shall then be given as a septimal prize with a gold medal to the individual who shall discover any notable useful remedy or invent any cunning device or instrument for the treatment of certain diseases, or in the absence of such a discovery, to the individual who has written the best treatise on such diseases.

By the will of the late Mrs. Mary Huntington Cooke, the Cambridge, Mass., Hospital receives the sum of $5,000.

Convalescent Home.—The Sanitarium for Hebrew Children at Rockaway Park, N. Y., is planning to remain open during the entire year as a convalescent home for invalids from the general hospitals. During the past the institution has been open for only two months of the year.

Sir Thomas Crosby, the retiring Lord Mayor of London, although eighty-two years of age, is preparing to return to the practice of surgery after laying down his official duties.

Geheimrat Dr. Wilhelm Ebstein, professor of internal medicine at the University of Göttingen from 1877 until 1906, and previous professor and director of the medical clinic at the University of Breslau, the author of many books and treatises on medical subjects, died on October 22 at the age of seventy-six years. He was known more especially for his studies of obesity and for having devised a very efficient method of reduction.

Southern Medical Association.—The sixth annual convention of this association, which embraces the states of Mississippi, Tennessee, Georgia, Alabama, Louisiana, and Florida, was held in Jacksonville on November 12, 13, and 14, the following officers being elected for the ensuing year: *President,* Dr. Frank A. Jones, Memphis; *Vice-Presidents,* Dr. Stuart McGuire, Richmond, and Dr. James D. Love, Jacksonville; *Secretary-Treasurer,* Dr. Seale Harris, Mobile.

Tristate Medical Society.—With an attendance of about fifty members from the states of Arkansas, Louisiana, and Texas, the annual meeting of this society was held in Shreveport, La., on November 12 and 13. Officers for the ensuing year were elected, as follows: *President,* Dr. Thomas B. Younger, Fisher, La.; *Secretary-Treasurer,* Dr. J. M. Bodenheimer, Shreveport, La.; *State Vice-Presidents,* Louisiana, Dr. John L. Scales, Shreveport; Texas, Dr. W. G. Hartt, Marshall; Arkansas, Dr. T. V. Sauter, McNeil.

Southern Illinois Medical Association.—The following new officers have been elected: *President,* Dr. Harry E. Wilson, Centralia; *Vice-President,* Dr. W. E. Lingle, Cobden; *Treasurer,* Dr. James W. Armstrong, Centralia; *Secretary,* Dr. Charles W. Lillie, East St. Louis.

Obituary Notes.—Dr. Caesar A. Von Ramdohr of New York, a graduate of the New York University Medical College in 1877, a member of the New York State and County Medical Societies, the New York Obstetrical Society, the Society of Medical Jurisprudence, and the German and Yorkville Medical Associations, professor emeritus of obstetrics in the New York Post-Graduate Medical School, consulting obstetrician to the Post-Graduate and St. Mark's Hospitals, and consulting gynecologist to the People's Hospital and the German Poliklinik, died suddenly at his home of Bright's disease on November 17, aged 57 years.

Dr. Robert Ferguson Chapman of New York, a graduate of the University of Maryland, School of Medicine, Baltimore, in 1865, and a member of the Maryland Society of New York and the New York Southern Society, died at his home on November 11, aged 71 years.

Dr. Francis Duffy of New Bern, N. C., a graduate of the University of Virginia, Department of Medicine, in 1868, a member of the North Carolina State and Craven County Medical Societies, acting assistant surgeon of the Marine Hospital Service, and a member of the County Board of Health, died at his home of typhoid fever, on November 5.

Dr. James W. Abercrombie of Warwood, W. Va., a graduate of the Medical Department of Western Reserve University in 1888, a member of the American Medical Association and of the West Virginia State and Ohio County Medical Societies, and formerly Mayor of Warwood, died at his home after a long illness, on November 7, aged 53 years.

Dr. Lucius Wadsworth Clarke of Cambridge, Wisconsin, a graduate of the University of Vermont College of Medicine in 1863, and a surgeon in the United States Army during the Civil War, died on October 31, in the home in which he had lived for forty-five years, at the age of 81.

Dr. J. Denham Palmer of Jacksonville, Fla., a graduate of the University of Maryland School of Medicine, Baltimore, in 1872, and a member of the Florida State and Duval County Medical Societies, died in St. Luke's Hospital, Jacksonville, as the result of an accident, on November 3, aged 62 years.

Dr. Edgar DuBois Biddle of Patoka, Ind., a graduate of the Missouri Medical College, St. Louis, in 1880, died in the Presbyterian Hospital, Chicago, on November 7, aged 55 years.

Dr. Bradford S. Gallaway of Los Angeles, Cal., a graduate of the University of Michigan, Department of Medicine and Surgery, in 1880, formerly a prominent physician of Colorado and of Nevada

died suddenly, from embolism on November 2, aged 58 years.

Dr. GABRIEL G. BICKLEY of Waterloo, Iowa, a graduate of the Philadelphia College of Medicine and Surgery in 1863, died at his home of diabetes on November 1, aged 72 years.

Dr. ALDEN MARTIN of Norwalk, Ohio, a graduate of the Cleveland University of Medicine and Surgery in 1896, died suddenly on November 10, aged 44 years.

Dr. LYNN B. GRADDY of Nashville, Tenn., a graduate of the University of Nashville, Medical Department, in 1874, died at his home in Lexington, recently, aged 67 years.

Dr. THOMAS STANHOPE HENRY of Brookneal, Va., said to be the last surviving grandson of Patrick Henry, a graduate of the Medical College of Virginia, Richmond, in 1864, died at his home on November 11, after a long illness, aged 80 years.

Dr. RICHARD ALSOP CLEEMAN of Philadelphia, Pa., a graduate of the University of Pennsylvania, Department of Medicine, in 1862, a veteran of the Civil War, and a member of the American Medical Association, the Pennsylvania State and Philadelphia County Medical Societies, the Philadelphia Obstetrical Society, the Philadelphia Pediatric Society, and the Philadelphia Pathological Society, died at his home on November 19, aged 72 years.

Dr. W. ROSS BUSTARD of College Point, N. Y., a graduate of the College of Physicians and Surgeons of Cleveland, O., in 1901, died at his home on November 18.

Dr. EDWARD PAYSON SMALL of Philadelphia, Pa., a graduate of the Homeopathic Medical College of Pennsylvania, Philadelphia, in 1866, died at his home on November 16, aged 74 years.

Dr. JOHN C. SUNDBERG of Seattle, Wash., a graduate of the Northwestern University Medical School, Chicago, in 1874, a member of the American Medical Association and the Washington State and King County Medical Societies, and formerly United States Consul at Bagdad and physician to the Sultan of Turkey, died at his home on November 19, aged 67 years.

Dr. FRANCIS R. GERHARD of Douglassville, Pa., a graduate of the University of Pennsylvania, Department of Medicine, in 1869, died in Reading, Pa., on November 14, aged 69 years.

Dr. JOHN STEWART of Philadelphia, Pa., a graduate of the Jefferson Medical College, Philadelphia, in 1896, a member of the American Medical Association and the Pennsylvania State and Philadelphia County Medical Societies, died at his home on November 14, aged 40 years.

Dr. ISAIAH BEE of Princeton, W. Va., a graduate of the Cleveland Medical College in 1860, died at his home on November 15, aged 81 years.

Dr. PRESLEY B. OGDEN of Shinnston, W. Va., a graduate of the Jefferson Medical College, Philadelphia, in 1867, died at his home on November 17, aged 72 years.

Dr. HARTLEY SPINNEY JACQUES of Halifax, N. S., a graduate of the New York University Medical College in 1887, died at his home after a long illness on November 11, aged 54 years.

Dr. RICHARD M. FLETCHER of Birmingham, Ala., a graduate of the University of Alabama, Medical Department, Mobile, in 1894, died at his home on November 9, after a long illness.

Dr. ARTHUR MACCABE of Gloucester, Mass., a graduate of the Baltimore University School of Medicine in 1897, a member of the American Medical Association, and of the Massachusetts State and Essex County Medical Societies, and formerly city physician and chairman of the Board of Health of Gloucester, died at the Addison Gilbert Hospital on November 12, aged 44 years.

Dr. WILLIAM O. BEAM of Moline, Ill., in 1893, was burned to death on November 14, while attempting to save some valuables from a burning stable. He was 43 years old.

Dr. SAMUEL M. CLEVELAND of Philadelphia, Pa., a graduate of the Hahnemann Medical College and Hospital, Philadelphia, in 1875, died November 23 after a long illness, aged 75 years.

Obituary.

JAMES WOODS McLANE, M.D.

NEW YORK.

DR. JAMES W. MCLANE, formerly one of the most prominent obstetricians in New York, but for several years retired from active practice, died at his home in this city on Monday of this week. He was born in New York August 19, 1839; was graduated in arts from Yale in 1861, and in medicine from the College of Physicians and Surgeons in 1864. He was connected with this school for nearly forty years in various capacities: first lecturer, then professor of materia medica and therapeutics from 1867 to 1872; professor of obstetrics and gynecology from 1872 to 1898, and appointed emeritus professor in 1898. He was dean of the medical faculty of Columbia University from 1891 to 1903. He was at various times attending physician to the New York, St. Luke's, Roosevelt, Nursery and Child's, and Sloane Maternity Hospitals. It was through Dr. McLane's influence that the money was given for the erection of the Vanderbilt Clinic and the Sloane Maternity Hospital.

Correspondence.

OUR LONDON LETTER.

(From Our Regular Correspondent.)

BRADSHAW LECTURE—UNION OF MEDICAL SCHOOLS—HUXLEY LECTURE—HOUSING AND HEALTH—INSURANCE TROUBLES—MUSEUM OF HEALTH APPLIANCES—MEDICAL HISTORY—OBITUARY.

LONDON, November 8, 1912.

THE Bradshaw lecture at the Royal College of Physicians was delivered by Dr. D. B. Lees. He took for the subject of his discourse the "Diagnosis and Treatment of Incipient Pulmonary Tuberculosis," and, contrasting the mortality of this with other forms, he held that if one would eliminate this we could be assured of victory over the others. In the United Kingdom the annual deaths from phthisis numbered no less than 50,000, while other forms of tuberculosis accounted for less than half as many —20,000. To get rid of the disease the first thing to be done, said the lecturer, was to insure that every medical man should be able to detect it at the earliest moment it appeared, that was long before the bacillus was to be found in the sputum. To meet it at that stage, moreover, a simple, harmless, inexpensive but effectual method of home treatment must be devised. Waiting for a bacteriological report was dangerous, and such delay must be held responsible for many deaths from tubercle. In percussion they had a means of early diagnosis. The use of *x*-rays had now become available, but the

practitioner who had learned to trust his own percussion could dispense with the radiograph, for he held in his own hands the possibility of a correct early diagnosis. I am glad to report so distinct a testimony to the value of percussion, although I cannot call it new, for it reminds me of equal reliance on the method by some who passed away before the bacillus or the *x*-rays were discovered, but who taught so confidently the supreme importance of early diagnosis, and that this could be attained by careful proper percussion. But ears and fingers must both be trained for the purpose. As regarded treatment, Dr. Lees said a great deal had been heard about sanatoria and tuberculin, but there was no little skepticism in the profession as to these methods. The value of sanatorium treatment was doubted by many observers. It was undecided whether tuberculin should be used in large or small doses and whether the patient under it should rest or continue to work. Was it certain, he asked, that the administration of ordinary antiseptics was of no use? Why should they not employ them by inhalation? Here again I seem to be listening to older teaching, the use of which I saw before recent discoveries put them aside with brighter promises which have not been fulfilled. Dr. Lees gave an account of 70 cases treated in this manner, a mixture of creosote, iodine, alcohol, ether, and chloroform being employed. Of the 70 patients, 48 completely recovered, 10 were incompletely cured, 3 probably recovered, 7 died (some from other diseases), 3 cases were not traced. This seemed to the lecturer effective home treatment, and with the earliest possible diagnosis so many cases might be saved that they could hope for the day when pulmonary phthisis would be a disease of the past.

It has long been recognized that there are too many medical schools in London, and from time to time there have been suggestions for amalgamation. This week a step in that direction has been taken by the transference of the new bacteriological and public health laboratories of Charing Cross Hospital to King's College department of the University of London. This is but the natural result of the arrangement made last year when the teaching of the preliminary subjects was handed over to King's College. The ceremonial transfer was performed by Prof. S. Flexner on behalf of the school committee. In doing so he remarked that the bringing together such large populations as those of London and New York was a fact which rendered proper quarantine impracticable. It was a duty of universities and medical schools to instruct the public how to meet the dangers which threatened. The object of the school was to teach what was known and to find out what was still wanted to be known..

The Chairman of King's College (the Hon. W. F. D. Smith) spoke of the monumental skill and labor of Dr. Hunter, which had made it possible to open the laboratories, and said they would be used for research and post-graduate teaching. Dr. Headlam (Principal of King's College) emphasized the advantages of concentration and hoped other hospitals would join in the scheme, but not to squander money on great buildings. Their hope was to gradually develop a complete institute of public health. Sir H. A. Miers (Principal of the University) said the problem of university education in London rested with the teachers and required the cooperation of all. A real example of what ought to be done was that before them.

Afterward the Huxley lecture was delivered at the hospital by Professor Flexner, who took as his subject "Recent Advances in Science in Relation to Practical Medicine." He recognized perhaps too briefly the work of Huxley in biology and his early recognition of the discoveries being made in his time as to fermentation, putrefaction, and their relation to disease. In fact, Huxley saw, said the lecturer, that bacteriology was about to throw a protecting mantle, not only over men, but over all the higher animals, and even, perhaps, over plant life. Up to now, he continued, bacteriology had distributed its favors unequally. In some instances the knowledge of diseases it had given us was of slight value, but in others it was of great importance. Professor Flexner then took up the subject of poliomyelitis, which he examined in great detail, and relating the story of the working out of its natural history—a disease which has claimed his attention for several years, and illustrated the advances in science in relation to practical medicine, to which he desired to draw attention.

The Chairman of the London Insurance Committee (Mr. J. A. Dawes, M.P.) on Wednesday addressed the Mansion House Council on health and housing, respecting the sanatorium benefit which he said was now in force, and by no means meant, necessarily, residence in a sanatorium. The idea of his committee was to take a number of hospital beds for observation of cases. They had formed subcommittees in the different boroughs and he expressed gratitude for the assistance received from the Medical Officers of Health. There would be needed a dispensary in each, and he hoped that they could think of all forms of treatment. They had had 460 applications and all were under treatment or being arranged for in some way or other. The Asylums Board could provide 1,000 beds, but as it was a Poor Law institution it was said it could not be used, the act not permitting. But they were negotiating with the County Council, which, it was said, could act as an intermediary. This difficulty is being spoken of generally as an illustration of the evils of hasty legislation.

All the week we have been troubled with the insurance dispute. Meetings, circulars, correspondence, and discussions have intruded at every turn. Even the Parliament has been talking of the doctors and the act. The National Medical Union has sent a circular to every practitioner saying it is not prepared to compromise on any of the six points on which it supported from the first the British Medical Association. At a meeting in Westminster, attended by men from all districts of the metropolis it was resolved that the provisional rules, combined with the fresh statement of the Chancellor, though not securing all the reasonable demands, afford a basis for negotiation. The British Medical Association has written to the Chancellor on some of the points at issue, and has received a lengthy reply in which Mr. Lloyd George explains or explains away previous remarks. Thus, the inspection to which objection was made he holds necessary, but will be made by medical inspectors. The keeping of records of cases is to be in books provided by Government, and not much more than the common visiting lists in use by many, and will not be open to others than inspectors and so far "secret." This will concern the patients as well as the doctors, who will scarcely like to have their practice overhauled even by other medical men. Mileage is to be provided, but out of the amount set apart for remuneration, which still appears to be liable to uncertainty,

although Mr. Lloyd George estimates it at 7 shillings. If he had offered that as a firm, flat rate I believe it would have been accepted, but he has mixed it up with such a mass of verbiage that many doubt what he really means and others reflect that his financial estimates usually turn out erroneous. The Council of the British Medical Association met and considered his letter, and determined to leave the matter entirely to the representative meeting which is fixed for the 19th and 20th inst. The Council thus declines to give any lead to the profession, and though it fought well and secured wide support, it seems now afraid to push home its advantage. Probably this hesitation will be reflected among the representatives.

A museum of safety and health appliances is to be established in Westminster, where the Government has secured a central site and will erect a building for the purpose.

Another section of the Royal Society of Medicine has been practically established, more than 100 members having joined it and the first meeting being fixed for the 20th inst. The subject to which it is devoted is medical history. At the opening there is to be a paper on epidemic diseases and an account of some early medical portraits, of which a number will be exhibited together with early manuscripts. Such a society has many times been proposed, but hitherto we have not had one here, though you have in the United States, I think, and there is one in France and another in Germany.

Dr. Fred. Bagshawe, Justice of the Peace of St. Leonard's, died on November 2. Always an active man, he continued work almost to the last, and reached the age of 80. He graduated at Cambridge, A.M. and M.D., 1861-65, joined the College of Physicians, 1865, and was elected Fellow in 1879. He took an interest in public affairs, was six years Alderman of Hastings, and was Mayor in 1897-8. He was also Justice of the Peace for County Sussex and consulting physician to the hospital. Also held office in a number of other medical institutions. He delivered the presidential address at the Health Congress in Hastings.

Dr. Ludovic William D. Mair died November 4, aged 46. He was a medical inspector of the Local Government Board, served on the Belfast Health Commission, 1907; was Medical Officer of Health for Croydon. He took M.D., London, 1890; D.P.H. of the Royal College of Physicians, 1893. He made several reports on hypnotic diseases and other subjects for the Local Government Board, and wrote in the journals on cholera, diphtheria, and preventive medicine.

Lieut.-Col. Fred A. Rogers, D.S.O., late of the Indian Medical Service, has died at the age of 51. He was in the Burmese expedition, 1885-89; was twice mentioned in despatches, and received the medal with two clasps. For services in the Chin-Lushai expedition, 1889-90, he was awarded the D.S.O. He retired in 1905.

Mr. Frank Godfrey, late surgeon to the convict prison at Gibraltar and later to Northwest London Hospital and the City Lying-in Hospital, has died at the age of 70. He held the double qualification of the Edinburgh College (1885) and went with the British Legion to serve under Garibaldi.

The Protein Needs of the Child.—J. Stargardter states that his experiments confirm the conclusion based on Schlossmann's calculations, namely, the protein needs of the child beyond the infantile period may be satisfied with from 1.5 to 2.5 grams of protein per kilo of body weight.—*Archiv für Kinderheilkunde.*

OUR LETTER FROM THE PHILIPPINES.

(From Our Regular Correspondent.)

MEETING OF THE MANILA MEDICAL SOCIETY—FLY PEST IN BAGUIO—THE PLAGUE—CHOLERA IN JAPAN.

MANILA, P. I., October 21, 1912.

THE regular monthly meeting of the Manila Medical Society took place in the amphitheater of the College of Medicine and Surgery, at 8.30 P.M., October 7, 1912. Drs. Sison and Gutierrez presented a woman who had a wandering spleen. Dr. C. S. Butler, Commander, United States Navy, in charge of the Cañacao Hospital, Cavite, read a paper entitled "Some Laboratory Notes on Dysentery Bacilli." Charles S. Banks, Entomologist of the Bureau of Science, read a paper called "The Baguio Fly Campaign of 1912." It will perhaps be remembered that Baguio is to the Philippines what Simla is to India, and that during the hot season the seat of Government is transferred there. Owing to improper disposal of horse-manure and human excrement, enormous numbers of flies bred there, and during the height of the season they were so numerous as seriously to interfere with the comfort of the people who lived there. In the opinion of Mr. Banks, the flies were also responsible, to a considerable extent, for the transmission of the bacillary dysentery which was present.

During the past ten days there has been a considerable increase in the prevalence of plague in Manila, no less than six human cases having been reported. The situation is also made more serious by the fact that one case came from Calle Principe, near the river water front, which establishes a new center of infection. This address is in the San Nicolas district and is fully half a mile from where previous cases have occurred in man or in rats. This last case was in the person of a barber who occupied the first floor of a large tenement house which was practically unoccupied with the exception of the part which he used. The building gave evidence of being badly rat-infested, and skeletons of rats, and dead rats in varying stages of decomposition, were found. Some of these were encountered in the hollow walls of the building. Laboratory examination, however, failed to reveal any plague in the rats which were found dead. Since then a thousand rats have been caught in this vicinity, and a number that were plague-infected have been found in the same block or adjacent blocks. This section of the city is largely occupied by grain warehouses and other large stores of food supplies, and considerable difficulty will no doubt be encountered in the rat campaign which has been started.

The first case of plague in a white person occurred to-day in an American child aged six years. The child gives a history of having been ill for a period of six days, but did not develop a bubo until to-day. Fluid drawn from the bubo showed characteristic bipolar staining organisms which can be stated, with reasonable certainty, to be plague bacilli. Culture and inoculation experiments will, of course, be carried out. The child lived on the south side of the Pasig River, which, up to this time, has not had any cases of plague, but is said to have been in the plague-infected area, and it is possible that it might have become infected at such a time.

Up to the present time there have been sixteen cases of plague, of which fifteen were fatal. At Iloilo the number of cases and deaths still remains at nine, no cases having been reported there since September 17.

At the present time there is a severe outbreak of cholera in Japan, over 2,000 cases having already occurred. It is reported that the disease was transmitted from Shanghai to the vicinity of Moji by a vessel which had cases of cholera on board. Soon after some of the sick were taken ashore the disease appeared among residents, and has now spread rapidly throughout Japan, having appeared in many towns along the Shimonoseki Straits, in Nagasaki, and in Tokio. In the Philippines, stool examinations are being made of all arrivals from Japan, with the exception of first-cabin passengers.

The annual meeting of the Philippine Islands Medical Association will be held in Manila on November 4, 5, 6, and 7. A number of papers on original research and other pertinent subjects will be read.

Progress of Medical Science.

Boston Medical and Surgical Journal.

November 14, 1912.

1. Traumatisms of the Cranium and Spinal Column: (*a*) Neurological Aspects of Injuries to the Cranium and Spinal Column, E. W. Taylor; (*b*) The Surgical Treatment of Head Injuries Affecting the Brain, John Homans; (*c*) The Surgical Treatment of Injuries of the Spinal Column Affecting the Cord, John T. Bottomley.
2. A New Device for the Safe and Certain Administration of Salvarsan. William McGurn.

1 (a). Neurological Aspects of Injuries to the Cranium and Spinal Column.—E. W. Taylor concludes from a study of the clinical disturbances and pathological findings in traumatic injuries of the cord that hemorrhage external to the cord is unusual and need not be seriously considered in deciding upon operation. Concussion of the cord without definite microscopic lesions is a possibility. The damage to the cord is immediate following the injury, but it is not immediately possible to determine the amount of damage done the cord. This being the case it is essential to wait at least twenty-four to forty-eight hours before a decision is reached. Immediate operation may at times so far increase the shock already sustained as to hasten a fatal outcome. The operation is unavailing when signs of complete transverse lesion persist. If signs of improvement begin to show themselves and the patient's condition justifies the operation, a laminectomy may be indicated and may help toward restoration of the functions of a partially damaged cord. Lesions in the thoracic cord do not threaten life except through complications.

New York Medical Journal.

November 16, 1912.

1. Infant Feeding. Louis Fischer.
2. Salvarsan in Leprosy. Creighton Wellman.
3. Heliotherapy. A. Mackenzie Forbes and G. C. Copeland.
4. The Removal of Ureteral Stone by Cystoscopic Methods. Brans ford Lewis.
5. Angioma of the Pons. Gonzalo R. Lafora.
6. Venereal Diseases; A Sanitary and Social Problem. Frederick Bierhoff.
7. The Rational Therapy of Syphilis in the Light of Recent Investigations. J. S. Eisenstaedt.
8. New Methods of Diagnosis in Cancer. M. J. Sittenfield.
9. Deformities of the Nose. Frederick S. Lovell.

3. Heliotherapy.—A. Mackenzie Forbes and G. C. Copeland report three instances of children suffering from open wound, which, though apparently unhealing, have been submitted to the local action of the sun's rays with marked improvement. The first patient was suffering from Pott's disease and an attempt had been made to immobilize the spine by operative procedure, when a cold abscess broke through the incision to the spine laying the unhealed wound open and making it evident that it would only heal by granulation. The second patient had been operated on for tuberculosis of the great trochanter. A few days after the operation the wound became infected with staphylococcus and broke down. Tubercles were continually being formed on its gaping surface. Treatment by exposure to the sun's rays caused a disappearance of the tubercles and the formation of granulations over the deeper parts of the wound, and an improvement of the general condition of the child who was also suffering from a serious lung lesion. The third patient was a boy who was suffering from tuberculosis of the hip with several sinuses leading to the hip joint. Under heliotherapy both his local and general condition have improved. The report of the improvement of only three patients at the Montreal General Hospital is not sufficient to prove the efficacy of this form of treatment but should draw attention to the curative value of the sun's rays.

7. The Rational Therapy of Syphilis in the Light of Recent Investigations.—J. S. Eisenstaedt construes the following conditions as being possible reasons for the intravenous salvarsan injections: Impending perforation of the palate; certain luetic lesions of the central nervous system, such as meningitis and gumma; extreme involvement of the mucous membranes; early cases of syphilis in which secondary symptoms have not yet appeared; intense specific bone conditions, periostitis, and gumma; and especially cases of syphilis refractive to thorough mercurial treatment. The treatment of election is the combined salvarsan-mercury treatment carried out as follows, unless there are distinct contraindications, such as cardiovascular disease or lesions of the optic nerve. An intravenous salvarsan injection in full dose is administered to be immediately followed by twelve to fifteen intramuscular injections of mercury salicylate given at intervals of five or six days. Hoffman recommends four complete courses given within the first year of the disease. The writer has not been so energetic but has used intravenous salvarsan injections in the instances above enumerated. This was immediately followed by a series of mercury salicylate injections, followed later by four to six injections intramuscularly of small doses of salvarsan, from one to decigrammes, in sesame oil, after which new series of mercury salicylate injections are inaugurated and continued at increasing intervals during the first year of the disease. Treated in this way a fair number of cases seemed to be cured, though the time was too short to be certain. The patient should be treated until clinically cured and then observed for eighteen months longer, during which time the blood should be examined repeatedly. Pills of mercury biniodide or protiodide may be used as adjuvants to energetic therapy, being given between "cures."

Journal of the American Medical Association.

November 16, 1912.

1. Recent Advances in Plastic Surgery of the Bones. John B. Roberts.
2. Obstetrics in General Practice. J. G. Hagens.
3. Blood Changes Caused by the Hypodermic Administration of the Cancer Proteid. J. Walter Vaughn.
4. Adhesions and Constrictions of the Bowel; their Demonstration and Clinical Significance. C. E. Pfah'er.
5. The Study of Urine in Nervousness. Edward B. Angell.
6. Convulsive Seizures Associated with Postmenstrual Gastrointestinal Disorders. Arthur Conklin Brush.
7. Three Cases of Bubonic Plague in Havana. Juan Guiteras.
8. The Treatment of Papillary Tumors of the Urinary Bladder with the High Frequency Current. Edwin Beer.
9. Cancer of the Bladder. B. F. O'Neil.
10. Results in the Treatment of Tumors of the Urinary Bladder. E. S. Judd.
11. A Filtrable Agent the Cause of a Second Chicken Tumor, an Osteochondrosarcoma. Peyton Rous.
12. Macrophagocytes in the Sputum of a Patient with Chronic Hemoptysis. J. E. Pottenger.
13. Fatal Hemorrhage from a Small Branch of the Vena Saphena Parva. David I. Macht.

3. Blood Changes Caused by the Hypodermic Administration of the Cancer Proteid.—J. Walter Vaughn reports that during the past six years over 200 cases of recurrent or inoperable cancer which have come under his observation have been treated by some method of vaccine therapy. Two forms of vaccine have been used in his work, namely, cancer residue and a vaccine made

of the cancer cell in its entirety. The methods are described and the results tabulated. In about 20 per cent. of these cases all visible signs of malignant tissue disappeared, but this was not always permanent, and the percentage was reduced to 10 on longer observation. The work was begun in the belief that it was possible to compel the body to form specific ferments for the splitting up of given proteins introduced into the body in dead form. These were looked for in the white blood cells and daily differential leucocyte counts were made to the number of more than twenty thousand. It was found that in cases with marked decrease of the polymorphonuclears and a corresponding increase of large or small mononuclears, benefit was received from vaccines. No estimate of the value of the use of vaccines could be made from the microscopic picture of the tumor cells. The malignancy seemed to depend on the bodily resistance of the patient rather than the nature of the growth, and could be better estimated by a differential leucocyte count than by examination. Experiments were made to see whether an active ferment for splitting malignant cells could be produced in animals and made available for the treatment of cancer. Over 500 animals were used and blood changes carefully noted. The polymorphonuclears and small mononuclears were not generally affected while the proportion of large mononuclears was always increased from 100 to 400 per cent. within two days. Experiments were made on rabbits to determine how this increase affected the formation of the specific ferment. Rabbits were sensitized to the cancer cell and then intravenously injected with the cancer-cell emulsion. In unsensitized rabbits there was no noticeable effect. Those with a percentage of large mononuclears above thirty usually died quickly, those with a lower percentage were made very sick, but recovered. The serum from rabbits thus transitorily sensitized, when mixed with cancer-cell emulsion and incubated for an hour, caused marked symptoms of poisoning when intravenously injected in rabbits. Injections of both sheep and rabbit serum were given in some cases of inoperable carcinoma, and, while there seemed to be some improvement in the condition of the malignant growth in over half the cases the serum complication seemed to render its use inadvisable. An attempt was made to see whether this specific ferment could be separated from the serum. The specific leucocyte extract was soluble but it seemed to be rather too dangerous for use in the treatment of malignant disease, though no absolute facts could be reported at the present time.

6. **Convulsive Seizures Associated with Postmenstrual Gastrointestinal Disorders**—Arthur Conklin Brush discusses the difficulties in differentiating convulsive seizures of toxic origin from those of genuine epilepsy. Four well marked cases in which the seizures occurred apparently in connection with the menstrual period have come under his observation during the past ten years. Examination of the patients during the menstrual interval failed to disclose anything abnormal in the abdominal or pelvic organs. Though the term epilepsy has been used for over two thousand years no one can give an undisputed definition of the epileptic condition, and symptoms once held to be diagnostic of epilepsy are now known to occur in convulsive seizures of other conditions. The difficulty of distinguishing between hysteria and epilepsy is often increased by the coexistence of the two conditions. In the cases reported the seizures first appeared after an unusual exertion or shock in two of the patients, and he considers that in all they were due to gastrointestinal disturbances and menstrual stress on the nervous system. He believes that the patients had a previous irritability of the cerebro cortex. The function of menstruation caused exhaustion of the pelvic and abdominal nervous mechanism and the consequent disturbance of the abdominal viscera led to the production of toxic substances which, acting on the cortex, produced the convulsions. Treatment based on this theory proved very satisfactory.

11. **A Filtrable Agent the Cause of a Second Chicken Tumor, an Osteochondrosarcoma.**—Peyton Rous, J. B. Murphy, and W. H. Tyler describe their method of filtration and report their experiments which show that the osteochondrosarcoma, like their previously described spindle sarcoma, can be started in normal fowls by an agent separate from the tumor cells and capable of passing through a Berkfeld filter. The action of the agent, as in the case of the other tumor, seems to depend upon accessory factors; the addition to the filtrate of sterile infusorial earth to bring about an active tissue infiltration caused a high percentage of tumors, while the filtrate alone had a very limited effect. The nature of the agent causing the osteochondrosarcoma cannot at present be stated. The agent causing the spindle-celled sarcoma is probably a living virus. The demonstration that extrinsic agents are the cause of two connective tissue growths of the fowl which are characteristic malignant tumors renders it necessary to suppose either that such tumors of the fowl have an entirely different etiology from mammalian tumors or else that the latter are of similar origin. In any case the findings with the chicken tumor largely demolish the theoretical basis on which objections to an extrinsic cause for cancer has been built up.

The Lancet.

November 9, 1912.

1. The Huxley Lecture: Some Problems in Infection and Its Control. Simon Flexner.
2. The Bradshaw Lecture. The Diagnosis and Treatment of Incipient Pulmonary Tuberculosis. David B. Lees.
3. The Treatment of Unilateral Cataract. Herbert Parsons.
4. Hemi-Hypertrophy of the Body with Naevus and Varicose Veins. E. D. Telford.
5. A Case of Meningitis in Which the Only Organism which Could Be Cultivated from the Cerebrospinal Fluid During Life was a Bacillus of the Proteus Group. E. Athole.
6. A Case of Pneumococcal Cerebrospinal Meningitis. J. H. Cumming.
7. Pancreatitis with Jaundice in the Infectious Diseases, with Notes on Four Cases. W. L. Goldie.
8. Fracture of the Carpal Scaphoid Bone Associated with Median Nerve Involvement. W. A. Campbell.

2. **The Bradshaw Lecture on the Diagnosis and Treatment of Incipient Pulmonary Tuberculosis.**—David B. Lees reviews the relative incidence of bovine and human tuberculosis and concludes that the bovine type presents a problem insignificant in comparison with that of the human bacillus. He discusses the diagnosis of incipient tuberculosis and the value of percussion and calls attention to the advantage of keeping an accurate record of the size of dull areas. He says that it is possible for any general practitioner of medicine, by the adoption of a correct method of examination and the exercise of a little care and patience, accurately to diagnose the existence of an incipient tuberculosis long before any bacteriological evidence can be obtained. It is not necessary for him to wait for a positive bacteriological report and he will be foolish indeed if he allows a negative report to shake a diagnosis which is based on an accurate physical examination. For the last seven years he has treated his patients, with the exception of those seen in consultation at an advanced stage of the disease, by continuous antiseptic inhalations, by means of a Yoe's inhaler. The solution used consisted of creosote, carbolic acid, tincture of iodide, spirits of ether, and spirits of chloroform. Out of seventy-eight cases thus treated forty-eight and probably fifty-one resulted in complete recovery; there were ten incompletely cured, seven died, and two have been lost sight of. The treatment was initiated by a rest of a week or two and during the entire course of treatment the usual rules in regard to fresh air and general hygiene should be observed.

3. **The Treatment of Unilateral Cataract.**—Herbert Parsons deals with cases in which the disease is so slight

or quiescent as to offer no decided contraindication to some form of cataract operation. He divides the cases into two great groups according to the age of the patient, for speaking generally the indication is to operate in cases of unilateral cataract in the young and not to operate in the adult or aged. Among the advantages to be expected to accrue to the patient from a successful operation perhaps the greatest is the restoration of the full field of vision. The next advantage would be in regard to central vision. If the patient had originally little or no error of refraction, he would with the aid of a strong convex lens have his central vision restored. It is shown, however, that it is not to be anticipated that the patient will be able to wear a cataract glass. The affected eye will, therefore, be practically useless for central vision and no particular gain accrues in this respect. It is true also that central vision is sometimes improved by operation without the use of the cataract glass, but far from being an advantage this is often a disadvantage, as the improved vision acts as a disquieting feature and tends to obscure the vision of the sound eye. The cosmetic effect is a material advantage which must be taken into consideration in operation in these cases. The operation generally indicated in the young is one involving no risk to the eye. The improvement of central vision in the young, even though the refraction be not corrected, often suffices to prevent the development of squint. In many cases of cataract in the young the cataract will become too mature if left alone and will then be much less amenable to operation. Almost invariably the operation of choice is discission. After twenty or thirty years of age one is liable to have grave difficulties with the lens if discission is employed. Senile, traumatic, and complicated cataracts are considered. On the technical side there is one potent indication for operation and that is the appearance of signs of hypermaturity. Operation is contraindicated when the opacity of the lens is secondary to some general disease, such as diabetes.

British Medical Journal.

November 9, 1912.

1. The Huxley Lecture: Some Problems in Infection and Its Control. Simon Flexner.
2. The Bradshaw Lecture: The Diagnosis and Treatment of Incipient Pulmonary Tuberculosis. David B. Lees.

1. Some Problems in Infection and Its Control.—Simon Flexner chose poliomyelitis as his general theme because it had claimed so much of his attention during the past few years and because it illustrated admirably certain truths to which he wished to call attention. He reviews the experimental investigation of the disease, routes of infection, pathological effects on the spinal cord and brain, the infectious agent of poliomyelitis and filterable viruses It is of great interest to determine the correspondence between the general data reviewed and the special facts of poliomyelitis which have been shown to arise in consequence of an invasion of the nervous tissue by an ultramiscoscopic or filtrable virus. The virus stands midway between the finest and coarsest examples. It is highly resistant to drying, light, and chemical action. In dust it survives weeks and months; in diffuse daylight, indefinitely, and it resists the action of pure glycerin and carbolic acid in 0.5 per cent. solution for many months. Recovery from poliomyelitis is attended and produced by an immunization of the body. Active immunity can be achieved by means of the living virus, but thus far no immunizing effect has been produced with the dead virus. After discussing at length the methods of exit and entrance of the virus of poliomyelitis, Dr. Flexner expresses the view that the nasal mucous membrane is the site both of ingress and of egress of the virus of poliomyelitis in man. Support for this view is found also in the study of microscopic changes in the meninges and the central nervous tissues. The virus survives in the dry state and in one instance has been detected in the sweepings of a room occupied by a patient suffering from the disease. The distribution of the virus in coughing and speaking is readily accomplished and by this means both active cases and passive carriers may conceivably be produced. It should be remembered that we possess no means of discovering the virus except by animal inoculation. Should the experimental results arising from the inoculation of the secretions of the nose and throat of such healthy carriers be confirmed the evidence for the mode of infection as outlined would be complete. Experiments showing the probability of insects and animals acting as carriers of poliomyelitis are reviewed, attention is called to the identity of sporadic and epidemic cases and observations on pneumococcus meningitis and the antipneumococcus serum related. As to treatment the immune serum has thus far acted best when it is injected into the subdural space on several successive days. Such brilliant success has been recently recorded in respect to the specific chemical therapeutics of infection that an effort is being made to attack the problem from this quarter. The point of departure which has been adopted is the drug hexamenthylenamine, which possesses a degree of antiseptic action in the body and is known to be secreted in the cerebrospinal fluid. When the drug is administered by mouth it can be detected in the fluid in a short time. When inoculations of the virus and administration of the drug are begun together and the administration continued for some days afterward the development of the paralysis is sometimes, but not always, averted. Hexamenthylenamine lends itself to modifications by the addition of still other antiseptic groups to its molecule. None of this series of drugs is without some injurious effect upon the sensitive and vital organs of the body. Experimentation has already eliminated some of the objectionable features of the drug and improved the valuable features of the drugs so that they exert their action but little upon the organs and severely upon the parasites. When this effect is satisfactorily accomplished the victory will be won.

Berliner klinische Wochenschrift.

October 28 and November 4, 1912.

Defective Development.—Schwalbe has devoted much time to the study of malformations. These naturally originate at definite periods of development, the majority very early in embryonal life. In regard to causes we only know that they may be produced by internal and external factors. We know practically nothing of the nature of the spontaneously occurring malformations. From analogy we should conclude that a number of causes, both internal and external, have to cooperate before some malformations can be produced. The external factors which determine experimental manifestations so readily are brought with difficulty into relationship with natural deformities. Some malformations are transmitted by heredity, but these do not illuminate the other forms, and in any case form the exceptions. It is, however, a fact of some importance, that some of these inherited forms do not become apparent until comparatively late in life—for example precocious baldness. At a period not yet determined, or perhaps at different periods the interaction of organs begins to play a part. Thus a hypoplasia of the brain could be due to some lesion of the thyroid. Whatever else is true it is a fundamental fact that growth and development cannot be considered, or thought of even, apart from each other. We may regard a series of phenomena as an anomaly of growth or of development. To grow old spontaneously ahead of one's time may be regarded as a malformation as well—a defect of development.

Neurogenic Hyperthermia.—Döblin discusses this subject briefly. The phenomenon is recognized as one of

common occurrence but its rationale is unknown. The question naturally arises "to what extent is true fever of neurogenic origin?" In the latter there should be a chemical cause which is thought in most quarters to stimulate oxidation in general. If a toxic substance produces fever merely by stimulating the heat center alone, a neurogenic element must be involved. In such a case there would be great room for individual susceptibility, much more than is evident in true fever. The number of affections in which a neurogenic rise of temperature is recognizable seem to be constantly increasing. We now number adrenalin among the pyretogenous drugs, and the author regards adrenalin fever as neurogenic. When patient is under the influence of adrenalin a small hypodermic of atropine will determine a temperature rise of 2° C. This is doubtless effected through the sympathetic nerve system. If there is great instability of the latter, as in hysteria, we may readily account for the occurrence of purely neurogenic hyperthermia.

Avirulent Tracheal Diphtheria in an Adult.—Beyer reports a case of a very rare condition. A man aged 43, well nourished, admitted for a slight febrile affection with gastric symptoms, was found to have angina, hoarseness, and cough. Before a diagnosis had been made he coughed up a membrane containing among other forms, apparent Klebs-Loeffler bacilli. The patient continued to expel shreds of membrane, containing the same bacilli, but the latter were avirulent in animal experiment. The condition proved to be extremely obstinate, and did not yield to serotherapy nor vaccinotherapy. Staphylococcus vaccine was then tested, as this germ was also present, but no benefit resulted, and the author admits that patient was as far from being well as on the day of his admission.

Tabes and Trauma.—Schultze relates a number of cases which illustrate this relationship, with especial reference to its forensic aspect. One of these cases may be given as a representative instance. Patient was born in 1885. In 1903 after having always been healthy he fell through the ice into an excavation. Within a very short time he experienced a paresis of the left arm and leg and left side of face. He was allowed at first all his indemnity—for total disability. This was reduced to 75 per cent. and 60 per cent. as he continued to improve. Three years after the accident absence of patellar reflex and rigid pupils were noted. In two years more there was well marked tabes. Demand for 100 per cent. insurance allowance refused by his society, who referred him to the clinic. The case was complicated because the earliest symptoms were not of tabes but of hemiplegia, while in the third place there was a psychogenic component (hysteroid contraction of visual field); but all the phenomena could have been ascribed to syphilitic infection. The author as expert declared that a fall could not have produced tabes one and one-half years later; while the disability from the original hemiplegia had long vanished save for subjective weakness it was thought to have been due to thrombosis of the cerebral vessels.

Poisoning from Arsenical Carpets.—Kuttner delivered a full address on this subject and stated that his attention had been called to the subject by the repeated cases of chronic diarrhea seen by him which proved rebellious to treatment. These cases were at first regarded as neurogenic, but it soon became evident that neurasthenia and hysteria could be excluded. A patient, male, aged 32, having consulted him for cramps and diarrhea, he determined to reach the source of the matter. The fecal discharges and blood were studied and a provisional diagnosis was made of enterocolitis and secondary anemia. The condition improved while patient was in the hospital, but as soon as he had returned a relapse occurred. He again improved in the hospital and, as before, without treatment. A second relapse took place on his return home. The carpets were the only articles in the latter place which could be accused of having poisoned him, as all the ordinary sources could be excluded. These, however, do not seem to have been suspected, for the presence of arsenic was first revealed by analyses. After the discovery arsenic was also found in the urine. This also happened in a patient supposed to have pernicious anemia. The cumulative nature of the poison is shown by the fact that one patient had inhaled the arsenical carpet dust for two years before showing signs of poisoning. The laws expressly forbid the use of arsenic in carpet making. Despite this prohibition arsenic colors are largely used to-day for green carpets and even linoleum.

Münchener medizinische Wochenschrift.

November 5, 1912.

Septic Rheumatoid Affections.—Schürer begins his article with an account of Russian investigations into the role of the streptococcus in scarlatina. These show beyond doubt how frequently the latter represents a mixed infection even in nonpurulent manipulations. If the scarlet fever virus can sensitize patients to a low grade infection with streptococci, why should not the latter be the cause, in part at least, of pseudoarticular rheumatism? Many papers have been published during the past dozen years which show that individual rheumatoid affections may be traced to virulent streptococci. When the latter are surely pathogenic in apparent rheumatic affections they have been invariably small, with delicate colony formation and almost nonvirulent to animals. In endocarditis of mild and insidious character, non-rheumatic clinically, the streptococcus viridans is at fault. The two types are closely related, if not identical. The detail of proof the author thinks he can supply by a series of cases in which the viridans was shown to be present in apparent polyarticular rheumatism. The demonstration was by no means easily effected, but nevertheless complete. In these cases the viridans was found in the tonsils during or after a polyarthritis. The crucial test lay in the positive blood finds, thus accounting for the full cycle of infection. Since the viridans is known to be able to cause acute general sepsis and endocarditis ulcerosa it is proper to speak of mild rheumatoid cases as septic. In the mild form of isolated endocarditis caused by the viridans joint pains are often present, and in some cases swelling; so that endocarditis plus arthropathies in the one case approximates the acute polyarthritis plus endocarditis in the other, a final destination being impossible. There is, however, one formidable objection to a unicistic view, to wit, failure of the atypical case to respond to salicylic acid. This influences the author to speak of rheumatoids as distinct from genuine rheumatism. It is characteristic of all rheumatoids that they are not influenced by this remedy. Another criterion is the blood finds, which are always negative in acute polyarticular rheumatism of the familiar type. These demonstrations lead to the view that acute rheumatism of tonsillar or intranasal origin can hardly be genuine in character.

Prevention and Management of Ankylosis of the Joints.—Wahl speaks of the great interest felt in medical circles in preventing ankylosis, for it is an example of the way in which a slight lesion works great and permanent harm. One type follows inflammations of every sort while the other is of traumatic origin. In phlegmonous suppuration earliest incision is the rule, and should be done without any delay whatever upon the twofold symptom temperature and pain. To temporize with poultices is criminal. If patient is seen at the office in this condition he should at once be mildly etherized and relieved. It may save him from a stiff joint. More repose than is absolutely necessary is bad from this view-

point in all acute arthritides. Extension or rotation splints should be applied. On the other hand rest is the indication in chronic tuberculous arthritis, with Biers' hyperemia. It is best to avoid all bloody intervention. When slight adhesions, capsular retractions, and muscular atrophy are developing massage, gymnastics, and baths must be used persistently to limit the disability as far as possible. For the prevention of ankylosis after simple fracture into joints everything depends on the technique of the first management of the latter, which involves the proper use of extension splints.

Deutsche medizinische Wochenschrift.

October 31 and November 7, 1912.

Parinaud's Conjunctivitis.—Möllers writes of the relationship between the tubercle bacillus and this affection. Up to two years ago the nature of the latter seems to have been obscure. Wessely, seeing a case in the child of a butcher suspected a bovine tuberculosis and demonstrated the correctness of his suspicions by animal inoculation. Other authors soon corroborated Wessely's views, but it was not claimed outright that all so-called Parinaud's conjunctivitis represented a local bovine tuberculosis. The subject was then investigated at the Koch Institute by the author. A child with the peculiar cock's comb vegetations on the conjunctiva and a lymph node paquet before the corresponding ear was the first subject studied. Inoculation showed that the bacilli in this case were of the human type. Other cases gave the same finds, and one patient had incipient pulmonary tuberculosis, thus confirming the teachings of Krusius and Clausen that while Parinaud's conjunctivitis is tuberculous it is not necessarily the primary lesion, but results from autoinoculation from an older focus. Möllers believes that the disease is not of bovine origin at all, although it may be found eventually that both forms of bacilli cause it. It is usually a benign affection, which may argue for the fact that patients have become immunized by some earlier localization of tuberculosis.

Forensic Status of Reflex Anomalies.—Singer sums up an article on this subject as follows: Asymmetry, weakening or absence of the patellar reflex always represent pathological phenomena and point to either peripheral or central nerve affections. The diagnostic value of the Achilles reflex is no less than that of the patella reflex; often it gives the earliest evidence of mischief. The Babinski reflex is one of the most important indications of disease of the pyramidal tracts; but its absence does not mean that the latter are intact. It is necessary for the general practitioner to master all the techniques of reflex examination. Repeated examinations may be necessary, and however slight the anomaly it has a diagnostic significance. In all forensic descriptions of subjects there should be mentioned the state of the patellar and Achilles reflexes, foot clonus and Babinski's sign.

Tests for Exogenous Blood in the Gastroenteric Tract.—Boas discusses the problem of eliminating the possibility of foreign blood in the stools, since there is always a possibility that blood has been ingested in the food. The special feature of the problem considered is the source of small quantities of blood constituents in the feces which might be ascribed erroneously to some disease. The most practicable method, since it does not entail any hardships on the patient, is to heat the meat or fish which he is to eat in such a manner as to eliminate the blood constituents. This is done by scraping or chopping some veal or chicken, etc., and then treating it with hydrogen peroxide solution until the dead white color shall indicate that the blood coloring matter has been disposed of. The excess of H_2O_2 is then washed away. The meat may now be made into croquettes.

Therapy of Arteriosclerosis.—Strubell describes the insufficiency of blood pressure measuring apparatus in the early recognition of arteriosclerosis. When this had become apparent radioscopic diagnosis enabled us to detect changes in the aorta previously unrecognizable. Still more recently the electrocardiogram has enabled us to distinguish a number of stages or degrees of this affection. First the pseudo stage, in which high pressure is inconstant; second, persistent high pressure with intact heart muscle doing an increased amount of work; third, stage of beginning hypertrophy of the heart (not perceptible in the Röntgen shadow); fourth, sclerosis beginning in the cardiac vessels and actual injury to the heart substance; fifth, dilatation of aorta; sixth, renal lesion. It is not, of course, implied that every case passes through these stages in succession. Each, however, leaves its mark in the electrocardiogram and each may furnish some indication for treatment. The rational symptoms are apparent at various stages and in various localities. The first stage naturally indicates prophylaxis, which is also to be pursued when the subject has no symptoms. Naturally whatever increases the blood pressure is to be prohibited. Plethora should be combated. The pseudo or spastic vascular symptoms furnish strong indications of what to avoid, because they show what is bad for the individual and theory is eliminated. Since prophylaxis must involve also some remedial measures the author advises the alternating current bath. Weak carbonic acid baths properly given are also of some value. Prolonged warm baths along with massage are much employed. All these measures serve to tranquilize the nervous system and antagonize the psychogenous factor in high blood pressure. These baths may be used during the first three stages. After the individual has been irrevocably damaged the indications are so obvious that they need not be discussed here. The chief measures of interest are those which have prophylactic as well as curative value. The author regards the iodine preparations as belonging here if anywhere. He regards their use as questionable, for he has shown that they lower the opsonic index to the staphylococcus. Our other main resource of late years, the alternating current, has also been assailed on the discovery that it may raise the blood pressure. Should it not lower the latter it is contraindicated.

Copper-Lecithin in the Treatment of Epithelioma.—Strauss states that the recent use of colloid metals in the chemotherapy of cancer has directed the attention of the profession especially to copper in this connection. The author has recently cured two epitheliomata and a lupus-carcinoma with a chemical combination of cupric chlorid and lecithin (copper content 4.5 per cent.). It has been shown that Röntgen rays and radium decompose lecithin with formation of cholin. Czerny has shown that cholin salves have anti-cancerous powers. Hence lecithin as the source of cholin may be of value in cancer therapy. Strauss says that the new substance was used in these cases in the form of a fat-free ointment, and it will probably be tested by subtumoral and systemic injections by those interested.

Is Psoriasis a Tuberculide?—Menzer asks this question indirectly. He claims to have found present in the lesions bacterial formations which suggest Koch's bacillus; also the Much granules. The presence of staphylo- and streptococci he does not regard as an accident, for he seems to look upon psoriasis as a mixed infection with tubercle and pyogenic bacteria. Cases may react to all three of the bacterial products. If his views of the disease prove to be founded on fact the future treatment will be one of immuno or vaccinotherapy. The author has already tested the tuberculin treatment and the use of staphylococcus vaccine. The disease appears to be made worse at first by these measures, after which it improves. The author adds to the treatment by staphylococcus vaccine and tuberculin the application of warm baths and good nourishment.

Insurance Medicine.

Effect of Girth and Chest Expansion on Longevity.—Dr. E. W. Dwight, medical director of the New England Mutual Life Insurance Company, has submitted the following interesting data showing the mortality rate in case of girths equal to or greater than the chest, these figures being taken from the total experience of his company from 1844 to 1905; also the rate of mortality according to chest expansion taken from the experience of his company from 1896 to 1905.

	No. of Cards.	Mortality rate Computed on Am. Experience Table. Per Cent.
Abdomen:		
Girth equal to or greater than chest at rest	14,142	87.0
Girth equal to or greater than chest expanded	1,405	128.2
Chest:		
Expansion less than 2 inches	187	69.3
Expansion between 2 and 3 in.	12,929	65.8
Expansion between 3 and 4 in.	24,714	57.6
Expansion between 4 and 5 in.	13,085	52.0
Expansion over 5 inches	3,538	44.2

The Significance of Obesity in Life Insurance.—Van der Heide says that the question of obesity gives rise most frequently to recriminations among applicant, insurance agent, and the medical examiner; their opinions are usually quite at variance and depend as much upon their own physique as upon any other data on the question. The usual books on insurance medicine give only general information about the significance of obesity for life insurance, but do not indulge in specific directions which could help a beginner in judging his cases. Of course, it is everyday knowledge that many obese persons are doomed to die early, yet many more live to a comfortable old age, and the task of the examiner is to recognize these "varieties" as exactly as possible.

There are several definitions of obesity. Brocca's rule states that the normal weight of a person in kilograms should be equal to the number of centimeters by which his height exceeds one meter. Some companies accept this measure, others have made out their own standard of normal weight and consider anybody unacceptable on usual terms who is over twenty per cent. overweight. Some companies insist that obesity should be judged not so much by the body weight as by the circumference of the abdomen. Florschütz has proposed the following coefficient of obesity: Subtract from double the circumference of abdomen the length of the body and divide the latter by the remainder obtained. If the quotient is five, normal nutrition is present; if under five, obesity exists in inverse proportion to the figure obtained. Poële has declined all applicants in whom the quotient thus obtained was less than three, but thinks that two and seventy-five hundredths as the lowest figure may likewise be acceptable. Norton names such applicants corpulent the circumference of whose abdomen is larger than that of the thorax in inspiration; Mahillon thinks excessive corpulency is present when the weight expressed in kilograms is larger than half the height expressed in centimeters.

It is certainly true that mere body weight cannot be used to judge the degree of overweight, for the size and weight of the body's bony framework is the important unknown quantity. Flesch has made the suggestion that the ankle or the wrist joint should be measured, for here the bones are hardly covered by muscles and fat, and some judgment of the size of the bones may be arrived at. Such measurements for the wrist ran from 15 to 20 centimeters; slight overweight would be considered safe with the higher measurements of the wrist, while with the lower it would mean excessive corpulency. It is possible directly to estimate the amount of fat by measuring an abdominal fold by means of a compass. Oeder has found that 2.75 centimeters is the average thickness of the abdominal wall in a normally developed man (average of 1920 measurements). Such figures would help the home office to judge about the acceptability of a candidate better than mere statement of weight.

As to obesity in itself, that of hereditary type is most unfavorable for insurance purposes. Usually gout or diabetes is frequent in obese families. If obesity appears in a fairly advanced age, however, and there is no family history of diseases of metabolism, its significance is less serious. As a cause of acquired obesity, alcohol plays an important rôle, and a fat applicant addicted to the use of alcohol is an unfavorable risk, for here a vicious circle may have been established. Overeating likewise tends to bring on obesity, and is likewise blamed for early arteriosclerosis; by itself it is not a disqualifying habit, but when combined with addiction to alcohol it makes early degeneration of heart and kidneys quite a probable event. Indeed, the whole gravity of obesity lies in the extra demands its existence puts on these organs and upon the blood vessels. The prognosis of obesity depends a great deal upon the condition of the heart muscle, and very careful examination of the heart should take place in such cases. The blood pressure should always be estimated, and the pulse taken with the body at rest, and after exercise. Of fifty-seven autopsies in obese persons, Chambers found the heart sound in seven cases only; thirteen of the individuals had dropsy, eleven apoplexy, fifteen chronic nephritis, eight peritonitis following strangulation of a hernia, and only ten died of accidental infections. Dr. Moses selected 407 applicants who weighed ten kilograms more than would be expected according to Brocca's rule, or whose abdominal circumference was more than six-tenths of the body length. These applicants had 47 years and 10 months as the average duration of life, while that of other applicants in the same insurance period was 50 years and 1 month. The obese showed greater mortality from diseases of the circulatory system, and likewise much lessened resistance to surgical operations. On the other hand, corpulent persons show a low mortality from tuberculosis, but this is not low enough to make up for other shortcomings.—*Blätter für Vertrauensärzte der Lebensversicherung.* Vol. III, No. 4.

Annual Life Insurance Examinations.—According to statements by the officers of some companies, annual life insurance examinations will soon become part of the ordinary business routine of life insurance work. The life insurance companies, from a business standpoint, are alive to the great opportunities for saving, and thus increasing dividends, though taking advantage of the teachings of preventive medicine. With a disinterestedness almost marvelous the medical man has always taken keen action in the prevention of disease. If annual medical examinations are introduced by the insurance companies, it will be the first instance of the medical profession advocating something in preventive medicine which will redound to their own financial gain.—*Dominion Medical Monthly.*

Book Reviews.

The Medical Record Visiting List, or Physicians' Diary for 1913. New Revised Edition. Price $1.25. New York: William Wood and Company.

The Medical Record Visiting List is issued betimes and, as hitherto, it is useful, compact, and handsome. It contains the customary visiting list, with special blanks for consultation practice, obstetric engagements and practice, vaccinations, register of deaths, addresses of nurses and of patients, and cash account. There is the usual miscellaneous information at the beginning of the volume. So far as the visiting list and other blanks are concerned it is difficult to see how the present volume could be improved. But some of the introductory matter might well be omitted; the table of solutions for subcutaneous injection, for instance, has a somewhat antiquated appearance.

The Physician's Visiting List (Lindsay and Blakiston's) for 1913. Sixty-second Year of Its Publication. Price, $1.25. Philadelphia: Blakiston's Son and Company.

The many physicians who have used this exceedingly practical and convenient visiting list—probably not from its first year of publication, but from their first years of practice—will welcome its reappearance in its old familiar form, for the man who has grown accustomed to a particular visiting list will not be very likely to change even if he thinks another may be in some respects better. He will have little occasion to change, even though he makes no use of the miscellaneous information and aids to memory bound up with the blank pages.

The Practitioner's Visiting List for 1913. Price $1.25. Philadelphia and New York: Lea & Febiger, 1912.

The text of this well known visiting list has been revised and brought up to date. It contains, among other valuable information, a scheme of dentition; tables of weights and measures, and comparative scales; instructions for examining the urine; diagnostic table of eruptive fevers; incompatibles, poisons, and antidotes; directions for effecting artificial respiration; extensive table of doses; an alphabetical table of diseases and their remedies, and directions for ligation of arteries. The record portion contains ruled blanks of various kinds, adapted for noting all details of practice and professional business.

Symptoms and Their Interpretation. By James Mackenzie, M.D., LL.D., Aber. & Edin.; Lecturer on Cardiac Research, London Hospital; Physician to the Mount Vernon Hospital; Consulting Physician to the Victoria Hospital, Burnley; Author of "Diseases of the Heart," "The Study of the Pulse, Arterial, Venous, and Hepatic, and the Movements of the Heart," etc. Second edition. Price $3.00. New York: Paul B. Hoeber, 1912.

It is a hopeful sign in medicine that all the progress that is being made in these days is not in laboratory methods alone. Valuable and, indeed, indispensable as these are in advancing our knowledge of disease, the great impetus they have acquired in recent years has been somewhat disheartening to the general practitioner, especially one in country districts remote from medical centers, who cannot have ready access to laboratories. Perhaps he is not placed at such a disadvantage as he may think. This book, though restricted to a consideration of the diagnostic value of pain and other reflex nervous phenomena, shows how much can be learned from purely clinical observation by the man who has eyes to see and ears to hear. In it Dr. Mackenzie draws attention to the nature of so-called visceral pain, expounding (and proving?) the new theory as to its reflex nature, outlining the origin of these painful symptoms, and explaining their nature. The work is founded on observations of cases seen in private practice, such as come under the care of the general practitioner, and not on the advanced cases coming under the notice of the hospital physician and the consultant. It is, therefore, of special interest to the ordinary medical man who has to deal with disease in its inception as well as with the inveterate cases.

The author is known as one of the foremost exponents of the new knowledge of heart disease, and in this book he has applied the same acuteness of observation to the study of other visceral affections. Those who have profited by his teachings of cardiac maladies will welcome this new work and will study it with equal interest and benefit. It is a small book but it will do more to open the reader's eyes and broaden his mind than many more ponderous tomes. It is original and absorbingly interesting, and whether one is ready to accept its teaching or not it will hold his attention and cause him to think. No author can ask more than this.

Progressive Medicine. A Quarterly Digest of Advances, Discoveries, and Improvements in the Medical and Surgical Sciences. Edited by Hobart Amory Hare, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College, Philadelphia. Assisted by Leighton F. Appleman, M.D., Instructor in Therapeutics, Jefferson Medical College, Philadelphia. Price $6 per annum. Philadelphia and New York: Lea & Febiger, September 1, 1912.

Progressive Medicine is so well known that we need only announce the appearance of the September issue. In this number Dr. W. Ewart writes on Diseases of the thorax and its viscera, including the heart, lungs, and blood-vessels; Dr. W. S. Gottheil, on Dermatology and syphilis; Dr. E. P. Davis, on Obstetrics; and Dr. W. G. Spiller, on Diseases of the nervous system. It will be noted that all of these writers are old contributors to this valuable periodical. This adds to the worth of their articles, inasmuch as there is a sort of continuity from year to year, with an absence of the repetition which would be inevitable if new contributors were constantly employed.

A Text-book of Practical Therapeutics. With especial reference to the application of remedial measures to disease and their employment upon a rational basis. By Hobart Amory Hare, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia. Fourteenth Edition, thoroughly revised and largely rewritten. With 131 engravings and eight full-page colored plates. Price $4 net. Philadelphia and New York: Lea & Febiger, 1912.

This work is so well known that extended comment on its excellent features is hardly necessary at this late day. It will suffice to state that this, the fourteenth edition, maintains the high standard achieved by the former editions and has been brought strictly up to date in the inclusion of all the newer advances in therapeutic knowledge. The text has been revised, a new introductory chapter has been prepared, and matter dealing with the use of salvarsan, tuberculin, and vaccine therapy has been introduced, together with a description of Bier's method of treatment by artificial hyperemia. The new ideas in regard to the employment of cardiac stimulants are also taken up. As in previous editions, Part I deals with introductory matter; Part II, with the action of drugs; Part III, with remedial measures other than drugs; and Part IV, with the treatment of individual diseases, whereby the employment of the remedies discussed in the earlier part of the book is directly applied, as at the bedside. These parts are linked together by copious cross-references in the text. This book may be recommended without reserve to the student and practitioner.

La Stérilisation de la Syphilis. Par le Dr. Leredde. Price 2 francs 50 centimes. Paris: A. Maloine, 1912.

Salvarsan has received such thorough discussion by present writers that it becomes a difficult task to present much that is new. In this work there are no important additions to our fund of knowledge. The author divides his book into four chief divisions: (1) Introduction and the technique of injection, (2) the dosage and accidents due to salvarsan, (3) Sero-diagnosis and the Wassermann reaction, and (4) the suppression of the syphilitic infection. The first section deals with the frequency and mortality of syphilis, the results of the experimental researches of Ehrlich and Hata, and the various modes of preparation and injection of the medicament. He cautions the operator to use only freshly distilled water and to take care that the solution is of the proper degree of alkalinization. The gastro-intestinal, hepatic, cutaneous, and thermic reactions following its administration are explained and the elimination of the drug are discussed. The second part is given to a consideration of the cures due exclusively to salvarsan, non-fatal accidents, and neuro-recurrences, fatalities due to errors in judgment, errors in technique, and over-dosage. He holds that one should consider as a normal dose and not as a strong dose that amount of the drug which when repeatedly administered causes a disappearance of spirochete in the lesions and brings about finally a negative Wassermann reaction. He advises at least three injections. The third part is devoted exclusively to sero-diagnosis and Wassermann's reaction, an important stone in the arch of modern syphilotherapy which many authors neglect. The last portion of the book states his experiences with salvarsan on syphilis in its different stages. The book fully covers its field, its text is well arranged, and the literary style is easy and flowing.

Society Reports.

MISSISSIPPI VALLEY MEDICAL ASSOCIATION.

Thirty-eighth Annual Meeting, held at Chicago, Illinois, October 22, 23, and 24, 1912.

THE PRESIDENT, DR. LOUIS FRANK, LOUISVILLE, KENTUCKY, IN THE CHAIR.

(*Concluded from page 923.*)

The Operative Treatment of Prostatic Hypertrophy.—Dr. HUGH CABOT, JR., of Boston said the object of prostatectomy was to remove the obstruction to urination with as little risk to life as possible, and as little damage to other structures and functions as may be. Only certain portions of the prostate were involved in the process known as hypertrophy. The prostate itself was compressed by the tumor and lay chiefly on the inferior and lateral aspects of the mass. The vesical and urethral aspects of the prostate in hypertrophy were covered only by the mucuous membrane. The ejaculatory ducts lay wholly behind the tumor which rarely, if ever, extended further forward than the posterior border of the verumontanum. The prostate might be attacked by two routes, the perineal or the suprapubic. If the lower route was chosen, two quite distinct methods of attack still remained, the intraurethral method of enucleation, and the transprostatic method, the operation of Young. Of the suprapubic operation there could hardly be important modification except in technical details as the attack was direct and head-on. It was useless to deny that the mortality of suprapubic prostatectomy was higher than that following the perineal operation. Briefly summarized the relative merits of the suprapubic and perineal operations in their present state of development seem to him to be these: The suprapubic route was the anatomically correct approach. It attacked the hypertrophied portion at the point where it could be reached with less destruction of tissue and with the greatest certainty of complete removal of the obstructing portion. It did less damage to other structures, interfered less with other functions and was followed by fewer complications. It was more certain to result in cure. The perineal operation showed at the present time a definitely lower mortality. It was a more difficult surgical procedure no matter what technic be selected. It was more likely to do damage to other structures and functions and was less certain to result in cure. Of the various types of perineal operation that of Proust combining the prerectal incision with the intraurethral enucleation was best adapted for the uses of the average surgeon.

Consideration of Procedures Adapted to the Exposure of the Structures at the Base of the Skull.—Dr. CHARLES H. FRAZIER of Philadelphia said the majority of the contributions had dealt with the osteoplastic flap as a means of exposing the cortical surface, and the general surgeon was not fully equipped to do what once was entrusted largely to the specialist. The osteoplastic resection of the skull was designed solely for the uncovering of lesions occupying the more accessible regions of the brain, as of the frontal, parietal, or occipital lobes, and in so far as the various steps of the operation were concerned, they had been elaborated to a degree of accuracy and mechanical refinement that admitted of little criticism. There remained, however, structures within the cranial cavity that must be approached in other ways and by other methods, structures occupying positions at the base of the skull in the posterior, middle, or anterior fossa. These structures, situated as they were beneath the cerebral or cerebellar hemispheres near the median line, were very much more inaccessible and required for their exposure the methods especially designed to meet the difficulties peculiar to each. Beginning with the posterior fossa, occasions arose in which the intracranial division of the auditory nerve might be indicated, as in cases of persistent and intractable tinnitus or persistent and intractable vertigo of central origin. He had recently placed on record the case of an elderly lady upon whom this operation was practised, and would dwell here, therefore, only on the important technical features. The operation consisted essentially in a suboccipital craniectomy, unilateral in extent. For these operations on the posterior fossa, Meltzer's method of intratracheal anesthesia was a measure of safety which could not be overestimated and to his mind should be regarded as indispensable in one's equipment for operations in this region. Prior to the introduction of this method he had observed, especially while operating for lesions in the cerebello-pontile angle, how imperfect was the expiratory exertion and inadequate exchange of gases, when the patient was in the prone or face down position, and for this reason he preferred to place them on their side on an especially designed table. With intratracheal anesthesia, all the alarming respiratory difficulties vanished, and what he once regarded as a most serious venture in these operations had now become the simplest and the safest. For the exposure of the auditory nerve, one turned downward a flap sufficient to uncover as much of the occipital bone as lay below the superior curved line. From the level of the lateral sinus down to the foramen magnum, and from the emissary sinus to the medial line, the occipital bone was removed, uncovering one cerebellar hemisphere. One then followed the petrous bone till the internal auditory meatus was recognized into which would be seen entering the auditory nerve. The mechanics of cranial surgery should not occupy too prominent a place in the minds of those engaging in this field. Of still greater import were the factors of safety, the observance and disregard of which made an intracranial operation a reasonable or an unreasonable risk. The high rate of mortality in past times was the outcome of too little regard for the refinement of cranial technic. The casual visitor to the clinic was amazed at the size of the exposure, but overlooked many of the features essential to success. The safest means of administering the anesthetic, the most effective means of controlling hemorrhage from whatever source, as the use of the muscle graft to check hemorrhage from the pial veins, the mastery of the problems of brain displacement, the knowledge of the tolerance of the brain to exploration for subcortical lesions, these and others were some of the factors that made for good or evil results.

Arsenic in Therapy.—Dr. W. F. BARCLAY of Pittsburgh pointed out that the poisonous and injurious effects of arsenic in medicine induced peculiar susceptibility to its action and intolerance. The tolerance of mercury was limited by its poisonous effects which were permanent. The same observation was true of arsenic and precluded its use and beneficial administration after its abuse. It was a well known truth based on actual observation and experience that mercurial poisoning or pytalism induced intolerance and precluded the use of mercury in treatment of diseases. The susceptibility to the poisonous effect of mercury after toxicity had been induced forbade its further use even when it was indicated. The intolerance was manifested in disturbances in the entire digestive system, in loss of appetite, salivary excitation, increase in salivation, diarrhea, malnutrition, and impaired metabolism of the blood. A like tolerance of arsenic was induced by its misuse and abuse even of a more serious character in its immediate and remote effects. There could not be a question as to the evil results that followed the abuse of arsenic in reports and facts made known and accounts given to the profession of medicine by physicians capable to observe and make accurate observations. The mention of a positive conclusion was that arsenic combined so it could be used in medicine without poisonous or injurious effect was chemic and therapeutic scientific skill in medical science. Excessive dosage without rapid elimination was dangerous to life and health and of no therapeutic advantage. Mercury was analogous to its congener arsenic in the treatment of syphilis and was the acme of medical treatment in lasting permanent results. Arsenic, like iodine, modified syphilitic manifestations promptly but never cured the disease. Arsenic in treatment of all skin lesions and diseases of the mucous and serous membranes was of great advantage and gave prompt and permanent results. Arsenic in the treatment of rheumatism was a specific in chemical combinations which insured rapid elimination. No remedy was of more scientific interest and less understood by the profession of medicine.

The Thyrogenic Origin of Graves' Disease.—Dr. J. H. JACOBSON of Toledo drew the following conclusions: 1. Graves' disease can and has been produced experimentally in lower animals by the injection of thyroid pressure fluid by the implantation of the thymus gland and by the injection of the macerated thyroid gland. Gland symptoms resembling Graves' disease can be produced in animals by thyroid feeding. 2. The evidence at hand indicates the close relationship between the thymus and thyroid glands. 3. The symptoms of Graves' disease are either due to an excess or perverted secretion of the thyroid gland, with the primary disturbance existing in the thymus gland, the action of the thyroid being that of a multiplicator according to the theory of Mikulicz. 4. Graves' disease has been produced in man by the excessive administration of thyroid extracts and preparations of iodine. 5. That there are changes in the thyroid gland, chemical, microscopical, macroscopical, which are

characteristic of Graves' disease. 6. Typical Graves' disease or symptoms of hyperthyroidism, so-called secondary Graves' disease, occurs after or in connection with other affections of the thyroid, such as simple and adenomatous goiter, cancer, and inflammation. 7. That there is a characteristic blood picture in Graves' disease, which disappears after the surgical removal of a sufficient amount of the diseased thyroid tissue. 8. The successful treatment of Graves' disease by measures directed toward the thyroid itself, as well as by serum therapy, prove the thyroid origin of the disease. 9. Graves' disease can be cured by the surgical removal of portions of the gland in approximately 70 per cent. of all cases.

The Surgical Importance and Treatment of Hyperthyroidism.—Dr. W. D. HAINES of Cincinnati said that a tragedy which occurred in a patient's life two years previously had been followed by hyperthyroidism. The influence wrought upon the heart was discovered during a period of quiescence, the ash of a process whose identity became known only when again set in motion, this time not by a tragedy but by an acute infection—appendicitis. Relief of the appendicitis did not in any way benefit the hyperthyroidism; on the contrary, the excitement incident to anesthesia, operation and hospital life would naturally tend to aggravate thyroid symptoms. Relief was finally obtained by removal of the right lobe and isthmus and ligation of the left superior thyroid artery. There was a very decided improvement in the heart's action following treatment and operation, the exophthalmos had almost entirely disappeared, and the patient remained comfortable despite a badly damaged heart. A few other cases, including an acute cholecystitis, empyema of the gall-bladder and an acute salpingitis had been observed by the writer coexistent with hyperthyroidism, but the report of the one case above would suffice to illustrate his purpose in bringing up this subject. The frequency with which hyperthyroidism was associated with valvular lesions, compensatory hypertrophy and degenerative changes in the heart muscle and clinically abnormal heart should admonish one to always be on guard for one of the protean manifestations of hyperthyroidism. He formerly did goiter operations through very short incisions, retracting the muscles in preference to dividing them. He now employed a long incision, dividing the sternohyoid and sternothyroid and sternocleidomastoid if necessary for free exposure of the gland and its circulation. Time and certitude were thus gained, and if the muscle be divided well above the entrance of the nerve supply, say on a level with the junction of the middle and upper third and the ends carefully sutured, restoration of function would follow and the resultant cicatricial deformity would be such as would scarcely mar the contour of the neck. By working within the capsule, one would protect the parathyroids and the patient from the serious consequence following injury to these important structures. He used catgut as ligature material and never removed a hemostat without having first ligated the vessel which it controlled irrespective of size. Finally, one should remember the neck as a privileged region and handle its structures with the utmost delicacy consistent with precision and celerity in doing goiter work.

The Surgical Management of Exophthalmic Goiter.—Dr. W. D. HAGGARD of Nashville, in reviewing the surgical management of exophthalmic goiter, said it was not contended that there was not a field for dietetic, hygienic and therapeutic treatment. From a considerable experience, however, and from observation and reports of the work of those of very large experience, the writer believed in common with many other observers, that the surgical treatment of this disease afforded the most effective and lasting benefit. It had stood the test of time far better than the purely medical management. The latter had been largely empiric. No matter at what time of life the early symptoms of hyperthyroidism developed, it was pretty satisfactorily demonstrated that reduction of the blood supply to the hyperactive gland was a rational and effective method of treatment. The ligation of one or more of the thyroid arteries, under local anesthesia, constituted one of the most satisfactory methods of handling this disease. It might be likened to the early operation for appendicitis. It should have a very much wider application. Recognizing the progressive and threatening trend of the malady, it was fortunate to have in pole ligation so safe, simple and positive a method of permanent relief in the early cases. Ligation was also indicated at the other extreme of the disease—when the patient was too ill for a radical removal of the hyperplastic lobe. It should be more generally understood that operation was not to be employed when the patient was in an acute exacerbation, or was rapidly growing worse, but if by rest in bed, with the ice cap over the heart, belladonna, etc., the patient could be gotten in a satisfactory condition and the pulse below 120, the operation could be undertaken. Mayo in the first nine months of last year performed 900 operations on the thyroid with a mortality of 1 per cent. For the exophthalmic cases, however, even in his skilled hands the mortality was more than threefold. Speaking of the end results, Crile says "no person died of the disease after leaving the hospital; one patient was made worse by the operation, otherwise every patient was either benefited or cured." Kocher says that many patients only knew what real mental quietude meant after the fundamental relief by operation. There was no more brilliant surgical achievement than the restoration of these nervous and circulatory invalids to the pursuit of happiness and the paths of peace.

The Urological Aspect of the Microscope as a Localizer of Disease.—Dr. CARL LEWIS WHEELER of Lexington made a plea for a more thorough microscopical examination of the urine, studying the urinary findings under higher magnifying power (500 diameters) with an effort towards differentiating the various epithelia and other features found in urinary sediment, saying in this way we might locate and diagnosticate pathological lesions along the urinary tract. All morbid processes occurring within the urogenital tract were marked by the presence of pus corpuscles, and the location was determined by the character of the epithelia found. Normally, the only epithelia found in the urine were of the flat variety, in small numbers, coming from the bladder, while in the female might be seen flat epithelia from the bladder and vagina. The presence of all other epithelia was pathological. The diagnostic point in differentiating epithelia is absolute size, and the pus corpuscle was taken as a standard of comparison in differentiating the various smaller epithelia, such as coming from the convoluted and straight collecting tubules of the kidney, ureter, kidney pelvis and prostate. He reported numbers of cases in which the diagnoses were made from urinary findings alone, in the absence of any clinical history whatsoever, and the diagnosis being confirmed by cystoscopy, ureteral catheterization, operation, or autopsy. The ordinary methods of the study of the urine under the microscope, beyond the detection of casts, were faulty and almost worthless, and his paper was offered as a defense of the Heitzmann School of Microscopical Urinary Diagnosis; for already, since the advent of ureteral catheterization, many authorities who had denounced Heitzmann's claims had deemed it wise to slightly modify their opinions.

The Value of Direct Transfusion of Blood, Based on Results Obtained in About 500 Cases.—Dr. A. L. SORESI of New York stated that 449 cases of direct transfusion had been collected from publications and directly from hospitals, where surgeons had performed it. Transfusion was useful in 234 cases, and a failure in 215. Failures were due to lack of correct indications, lack of training to do useful work on the blood vessels, to the fact that the physiologically correct technic had not been employed, and to the further fact that transfusion had been used too late. Transfusion had been employed in 217 cases of hemorrhage from different causes and was found successful in 158. The most successful cases were those of hemorrhages of the newborn and hemophilia, where the blood was used also as a hemostatic agent Transfusion was used in 26 cases of shock and collapse, in 15 of which it was a failure. It was used in 37 cases of pernicious anemia, which were all failures, the patients having at the best only a temporary improvement. It was used in the preparation of patients for surgical operations in 39 cases, with 17 failures; in sepsis from various causes, 19 cases, with 16 failures; in diabetic coma, 3 cases, all failures; in eclampsia, 5 cases, with 3 failures; in pellagra, 35 cases were reported in which it was used, and only 14 failures were reported. In undiagnosed conditions 17 cases, with 15 failures; in surgical cases of tuberculosis, 7 times, with 4 failures; in carcinoma and sarcoma, 16 cases, and none modified by the transfused blood; in exophthalmic goiter, 4 cases, all failures; in illuminating gas poisoning, 9 cases, with 6 failures; in pneumonia, 2 cases, with 1 failure; in Bright's disease, 1 case, a failure; in 1 case of starvation due to volvulus successfully. The author recommended the use of his cannula, because the blood vessels were not traumatized and thrombosis was avoided. Vein to vein transfusion, using the external jugular of the recipient and a vein of a limb of the donor; as soon as the blood vessels were exposed they should be kept moist and warm by pouring upon them a continuous stream of sterile warm saline solution.

Eczema as Seen by the General Practitioner.—Dr. A. RAVOGLI of Cincinnati said the general practitioner should look upon eczema as a curable disease. It was wrong to

starve the patients, forbidding articles of food, without scientific ground. On the contrary, the patient had to be well fed, in order to increase albumin in the serum to form antibodies to oppose the toxic elements. Only indigestible and badly preserved articles of food had to be avoided. The general practitioner had to renounce the false idea, or better the superstition that washing and cleansing eczematous surfaces was injurious. The affected parts had to be cleaned and kept aseptic like any other suppurating wound. Solutions of bicarbonate or of biborate of sodium, or even a mild soap accomplish the purpose. For an acute eczema the bathing with a 2 per cent. solution of subacetate of aluminum was very beneficial. After bathing the surface was covered with amylum or talcum powder. For a papular and vesicular eczema the applications of liniment of ichthyol, or of carbonate of zinc were useful. In recurrent vesicular eczema, painting the surface with tincture of iodine to sterilize the surface had given very good results. Rhagades must be touched with silver nitrate, 3 to 5 per cent. solution. Many different preparations in the form of salves, paste, gelatins, lotions, were recommended in text books, but the physician must familiarize himself with their use.

Officers.—The following officers were elected for the ensuing year: *President*, Dr. Albert E. Sterne, Indianapolis, Ind.; *First Vice-President*, Dr. D'Orsay Hecht, Chicago, Ill.; *Second Vice-President*, Dr. Hugh Cabot, Boston, Mass.; *Secretary*, Dr. Henry Enos Tuley, Louisville, Ky.; *Treasurer*, Dr. Samuel C. Stanton, Chicago, Ill.

New Orleans, La., was selected as the place for holding the next meeting.

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, Held October 17, 1912.

The President, Dr. William M. Polk, in the Chair.

This meeting was held under the auspices of the Section on Pediatrics.

Summary of the Report on Vital Statistics and Health Reports of New York City.—Dr. Haven Emerson presented this report from the Public Health Hospital, and Budget Committee of the New York Academy of Medicine.

The Etiology of Convulsions in Early Life.—Dr. Floyd Crandall read this paper. He emphasized the importance of determining the cause of convulsive disorders in children because in the large percentage of cases a knowledge of the causation would lead to prevention. He said the practitioner was prone to look upon these conditions too lightly and to feel that they were but passing episodes which merited little anxiety. While death during a convulsion was a rare occurrence it was sufficiently frequent to demand every precaution. Grave results might follow the neglect to find the cause and to take proper measures to prevent the repetition of convulsions. Gowers had reported 180 cases of epilepsy which began during the first three years of life and Osler studied 460 cases, of which 187 had their beginning in the first three years of life and 74 in the first year. Among the predisposing causes the first was age. The child was born with one-third the bulk of its adult brain, while its body was frequently not more than one-twentieth the adult weight. The brain acquired the second third of its weight during the first year of life and nearly its full weight by the time the child reached its seventh year. During the second year the brain of the child had almost two-thirds the weight of the adult brain, while it had not one one-hundredth of its functional power. Control by the higher powers was very slight at the first; this predisposed to uncontrolled nerve disorders. The pathological conditions incident to this period of rapid development were convulsions, night terrors, stammering, liability to sudden rises in temperature, and numerous other abnormalities. Beginning with the seventh year there came a period of active functional development and the diseases incident to this period were chorea, epilepsy, somnambulism, migraine, and certain eye defects. The second predisposing cause of convulsions was heredity, which was both potent and important. The children in some families were particularly subject to convulsions and nervous manifestations and the practitioner learned to look for them in succeeding generations. This inherent tendency was so strong in some children that it was almost impossible to prevent an occasional convulsion. Nevertheless something could be done for all and some could be saved entirely from these inherited tendencies. The third predisposing cause of convulsions was rachitis. A tendency to convulsive disorders was sometimes an early symptom of this condition, appearing before physical signs were well marked. In every case of convulsions rachitis should be searched for and active measures for its relief instituted. Among the general causes of convulsions the author first considered the organic diseases—meningitis, hydrocephalus, hemorrhages, embolism, thrombosis, abscesses, and tumors. Meningitis presented this symptom oftener than the others. Cortical hemorrhages in the newborn might be due to birth injuries or to septic infection. The second class of exciting causes were the reflex. Children were not infrequently disturbed while cutting their teeth, but he felt positive that dentition alone very rarely caused convulsions. The same might be said of phymosis. The effect of reflex irritation of undigested food masses in the alimentary canal was uncertain. He thought it possible that irritating masses of food might of themselves induce convulsions through reflex action, though more commonly this symptom was due to toxemia. One should get rid of the undigested food and then it might be determined whether the convulsions were due to reflex action or to toxemia. The question as to whether worms could cause convulsions was also open to discussion. The indication in such cases was clear. Eliminate the worms and then evolve a theory as to what they had done. The third group of exciting causes was toxic. Of these the author considered urenia first. Nephritis was, of course, most common, following scarlet fever, but it might follow any of the other infectious diseases. Marked nephritis sometimes followed certain cases of grippe, especially those complicated by intestinal infection. Convulsions occurred more commonly at the outset of infectious diseases. This was particularly true of penumonia. In a young child a convulsion might take the place of a chill in malarial fever. Of the contagious diseases pertussis was the one most commonly complicated by convulsions. In all the infectious diseases the convulsion was apparently due to the specific poison which produced the disease. Of all the exciting causes that of undigested food in the alimentary canal was the most frequent and was usually due to toxemia. The bacteria might not enter the blood, but the ptomaines which they generated were absorbed and acted as true poisons. The proteid elements of the food were the special offenders, their poisons being particularly virulent. In conditions like tetany and laryngismus stridulus the same etiological factors were present. In these two disorders rachitis had been believed to be of special importance, but Dr. Crandall was of the opinion that some other factor must be present. He based his opinion on the fact that these conditions were rare while rachitis was common. The factor of inherited unstable nervous temperament was important. The rôle played by the inorganic salts, particularly calcium, was apparently a potent one. The practitioner was not doing his duty when he was content to merely bring a child through a convulsive seizure. He should determine the underlying cause and the exciting factor, and then use every precaution to prevent further attacks. The attending physician should not forget the dictum that careful investigation would enable him to do something for every patient and everything for some patients.

General Remarks on the Pathogenesis of Convulsions and Allied Conditions.—Dr. Max G. Schlapp said that it seemed to him that they were dealing with a subject which was very complex. They should consider how the epileptic attacks occurred and what were the causes that operated upon the motor nervous system through irritation. It was well known that organic lesions in the cerebral cortex, hemorrhages, tumors, gliosis, etc., produced convulsions in children, but when they considered the fact that convulsions were often due to some reflex action, they were entering upon a big field which required deeper investigation. Epilepsy occurred more frequently during early life, and when it occurred later it was called "epilepsy retardans." Most cases of the latter kind were due to some organic lesion of the brain, especially those lesions resulting from hemorrhage, tumors, gliosis, syphilis, etc. Idiopathic epilepsy developed during early life and not after the age of thirty years. Dr. Schlapp then considered the formative, the functional, and the nutritive activities of the cell in relation to growth and development. There was something in the body which regulated these processes, and that something was a chemical substance. The formative activity marked the fetal period of life, and there appeared certain chemical substances which existed after a certain period of an individual's life. Growth ceased on account of the absence of a certain hormone. There was a certain class of glands in the body which were very important in retarding the growth because they produced and developed these hormones; these were the glands which controlled the sexual characteristics of the individual. There were also sub-

stances which controlled the nutritional and others which controlled the functional activity. There was something in the system that kept the threshold of nerve cells constant. The effect of hyperthyroidism upon the functional activity of the motor neurons and upon those contained in the vagus was tremendous. The administration of strychnine would cause an enormous lowering of the threshold of activity of the peripheral motor neurons. There were many things which regulated this threshold of functional activity. An interesting point in this connection was that all the neurons did not react alike to the different hormones. The nervous system was made up of a number of groups of hormones which reacted to a great number of poisons, such as lead. The musculospiral nerve was one of those especially affected, thus showing that there was something selective and, in addition, there was always a functional activity. Epilepsy was always the threshold of central motor neuron activity. When the threshold was lowered by the presence of some substance in the body, there occurred a progressive gliosis, which resulted in many of the cases in epilepsy. It was curious that hemorrhages or gliosis in certain individuals produced no epileptic attacks. Experiments had been performed on animals which proved that epileptic attacks could be produced by injecting certain substances such as urea or carbonate of ammonium into the blood, and the amount injected was a very important factor in bringing about the attack of epilepsy. Dr. Schlapp called attention to the diseases produced by hypo- and those produced by hyperthyroidism, and brought out the importance of the influence of functional activity in bringing about certain conditions which were unquestionably due to some disturbance of the internal secretions.

Dietetic Treatment of Convulsions and Allied Conditions Occurring in Infants, with Special Reference to the Rôle Played by the Inorganic Salts.—Dr. CLIFFORD G. GRULEE of Chicago presented this paper, in which he first recalled that in a previous communication he had confirmed Finkelstein's findings showing that the irritating portion of cow's milk was the whey. The general belief was held that the calcium and magnesium salts acted antagonistically to the sodium and potassium, the former tending to allay and the latter to increase nervous irritability. When there was a relative increase of calcium and magnesium over the increase of sodium and potassium, one would expect to have a decreased nervous irritability. This might be expressed by the formula $\frac{Ca}{Mg}$ or $\frac{Na+Ng}{Na+K}$. The opposite of this proposition was also true. Nervous irritability in infants and animals could be accurately estimated by the electrical reaction. It had been determined to approach the subject of spasmophilia in infants by endeavoring to produce increased electrical irritability by the use of sodium salts. Before doing this it had been thought that a study of metabolism of the inorganic salts in animals before and after thyroidectomy (thereby showing markedly the reaction of the electrical current) would be of interest. Young dogs, preferably females, were chosen for these experiments. They were observed for a period of three days before operation and for periods of two, three, and four days after the operation. The food consisted of milk preserved with formalin (1-10,000), which at no time showed any sign of decomposition. In all excepting one instance the dog was given as much as it would take. Thus an analysis of the urine and feces was made in twelve cases. Dr. Grulee reported these cases in detail and drew the following conclusions: 1. In dogs in which there was a hyperirritability of the nervous system, as shown by the increased electrical irritability, and as produced by removal of the thyroid gland, there was no regular variation in the formula, $\frac{Ca}{Na}$ or $\frac{Ca+Mg}{Na+K}$ before and after operation, as shown by metabolic experiment. While in three dogs thus examined there was apparently some support of the proposition that the quotient of this formula was increased during the period of hyperirritability of the nervous system, in the fourth dog no such reaction could be noticed. 2. In the estimation of the salt content of the brains of the five dogs, the first being a control, there was regularly found a decrease in the calcium content in the thyroidectomized animals. In one instance, however, the formula $\frac{Ca}{Na}$ was less than that of the controlled animals. 3. No variation in electrical irritability nor severity of the convulsive period could be demonstrated by intraperitoneal injections of normal solium and calcium salts in the quantity of 40 or 45 c.c. of sodium salts to two to four c.c. of calcium salts in twenty-four hours. 4. Even under normal conditions when carefully estimated, the electrical irritability in dogs varied quite widely. 5. While food containing whey was distinctly irritating to spasmophilic infants, the sodium and potassium salts corresponding in quantity to those contained in the whey did not regularly produce the increased electrical irritability which one would have expected were the sodium to be regarded as the irritating substance in the whey. 6. This failure of the sodium and potassium to produce results might be explained either by the fact that the forms in which the sodium and potassium were given, *i.e.*, sodium chloride and potassium chloride, were not readily absorbed by the gastrointestinal canal, or that these salts were not in themselves the irritating factors. The latter proposition would seem to be the more probable. It would seem, therefore, that these experiments had brought little or no confirmation of the hypothesis that the increased electrical irritability in spasmophilia was the result of a disturbance of calcium and sodium equilibrium.

Dr. L. EMMETT HOLT expressed his appreciation of the experimental work done by Dr. Grulee and of his clinical work in the dietetic treatment of convulsions and allied conditions in early life. Careful metabolic observations upon infants suffering from these conditions were needed to clear up the problem. It was difficult to draw inferences from experimental work on dogs as to what took place in the child. Dr. Grulee's observations related to a single type of convulsions occurring in infancy and associated with spasmophilia. These formed but a small percentage of the cases of convulsions met with. Dr. Holt thought that the commonly held opinion regarding the seriousness of single attacks of convulsions was erroneous. In hospital practice single attacks of convulsions were of daily occurrence and were seen in a great variety of conditions, most of them not being especially significant or important. This was probably also true in private practice. In following up these cases to later childhood it was interesting and significant to discover how small a percentage of those who had had a number of attacks of convulsions in infancy developed epilepsy. While it was no doubt true that a very large proportion of patients with epilepsy gave a history of infantile convulsions, in his observations the number of children suffering from infantile convulsions who subsequently developed epilepsy was surprisingly small. Of 157 cases of convulsions occurring in infancy and early childhood observed in private practice which had been followed up, only 10 had subsequently shown evidences of epilepsy. Dr. Holt emphasized the value of lumbar puncture in diagnosing the cause of convulsions and insisted upon its performance in every case of prolonged convulsions; in this way only could it be determined whether the convulsions were due to meningitis, to some other form of cerebral disease, or to some reflex cause. Furthermore, lumbar puncture was of some therapeutic value in cases of severe or prolonged convulsions, since in practically all of these cases there was greatly increased pressure in the cerebrospinal fluid and the withdrawal of from one-half to one ounce often produced marked improvement. Convulsions rarely proved fatal *per se* unless associated with enlarged thymus.

Dr. HENRY DWIGHT CHAPIN said there were convulsions and convulsions, and the kind to which Dr. Holt referred were very frequent in hospital practice and were only ephemeral in their effects. The important point was that in a great number of cases of convulsions it was the prolonged attacks and their ultimate results that were feared. The ultimate result in many of these cases was epilepsy. A rupture of the meningeal vessels of the cortex occurred in many of these cases; as a result there was effusion and irritation which eventually produced a serious irritation of the brain. He had frequently verified this condition at autopsy. He thought that the point brought out that every convulsion occurring in a child should be treated seriously and the child brought out of the attack at the earliest possible moment was very important. Cases of prolonged convulsions should be considered with great care as these cases might be followed by some cerebral disturbance.

Dr. LINNAEUS E. LAFETRA said that as regarded the causation of convulsions and allied conditions, particularly cyanosis, leaving out of account meningitis and intracranial hemorrhage or the onset of acute infections, these conditions arose most frequently from four separate causes; from prolonged pressure at the time of birth, with probable intracranial edema; from gastrointestinal autointoxication; from sepsis, with or without resulting

brain lesion; and from inanition. The convulsions due to intracranial hemorrhage, either meningeal or cerebral, would occur very shortly after birth, though where the hemorrhages were very small they might not manifest themselves for several months. Occasionally where sepsis was accompanied by thrombosis or hemorrhage a bloody fluid was obtained by spinal puncture. One would be led to suspect this condition when there was irregular respiration, the absence of pulsation in the fontanelle, together with bulging and increased tension. He had personally seen two such cases, one in hospital and one in private practice. Premature babies or those too weak to nurse well were subject to attacks of mild convulsions and cyanosis not connected with any brain lesion. Giving breast milk by gavage or by means of the Breck feeder was followed by a cessation of the attacks. He had never seen convulsions in an infant which he attributed to teething alone, but infants that were nervous or of neurotic heredity were much more susceptible at the time of teething to gastrointestinal disturbances and to otitis media. It was likely that this indigestion was at the onset a nervous disturbance of the secretion, or else a result of fever, which in such infants frequently accompanied the eruption of a tooth. In such cases there was always evidence either in the stools or in the ear that the convulsions were due to something more than the irritation of the gums. The convulsive attacks of infantile tetany were usually diagnosticated without difficulty by the appearance of the child, the attacks of laryngospasm, and the facial and elbow reaction. A very unusual complication of convulsions which seemed worth while mentioning occurred in a patient of his six years ago. The child had been subject to attacks of vomiting, convulsions, and intestinal indigestion. After a very severe attack he began to vomit coffee ground fluid having a fecal odor. He went into partial collapse and his appearance suggested acute intestinal obstruction. A stomach tube was passed and lavage of the stomach with hot saline solution caused a cessation of vomiting and the danger was passed. The boy, however, had inhaled vomited material so that he suffered a series of complications—an attack of pneumonia, then abscess of the lung, and finally empyema. Though such complications were exceedingly rare, this case taught that the stomach tube as well as the rectal tube for high irrigations should be ready for use in the case of convulsions in older children.

Dr. Foster Kennedy said that one should not get into the habit of thinking or believing that infantile convulsions so repeatedly seen belonged to any clinical entity. Lumbar puncture was very important in every case of convulsions accompanied with fever. It should be determined immediately whether the case was one of encephalitis or one of cerebrospinal or tuberculous meningitis. Dr. Kennedy entered a strong plea for the early and frequent use of the ophthalmoscope. It was stated that in England there were many children who died before the age of ten years with a history of having had many convulsions at the age of four or five years and many lost their sight. The history of these cases made him believe that one should more often resort to the ophthalmoscope. It was sometimes difficult to tell whether convulsions were the result of epilepsy or whether they were of a hysterical character. If in about an hour after an epileptic attack one got a change in the type of plantar reflex it was significant. This point was not mentioned in the textbooks but should be looked for in every child who had a convulsion. It seemed to him that it was right to give chloral or some other sedative to these children. In cases with a history of infantile convulsions epilepsy followed more often than was thought by many.

Dr. Grulee, in closing the discussion, said he wished it to be understood that the cases he reported were of purely spasmophilic nature and represented but one type of convulsions. Spasmophilia was a very common condition and was often accompanied by laryngismus stridulus. Burke followed 30 cases of spasmophilia from ten to fourteen years and in no case did epilepsy occur; on the other hand, many cases of true epilepsy gave a history of convulsions in childhood, which appeared to occur periodically, but were not the repeated convulsions such as occurred in spasmophilia proper.

The Albumin Reaction in Tuberculous Sputum.—L. Guerra-Coppioli and G. Mansuino conclude from their investigations that the chemical examination of tuberculous sputum for albumin or albumose is of no diagnostic value, either in cases in which tubercle bacilli are present in the sputum or in those in which the bacilli are absent.—*Rivista Critica di Clinica Medica.*

THE MEDICAL SOCIETY OF THE COUNTY OF NEW YORK.

Stated Meeting, Held October 28, 1912

The President, Dr. Charles Gilmore Kerley, in the Chair.

High Frequency Currents in Medicine.—Dr. Frederick de Kraft read this paper. He said that when using high frequency currents for medical purposes, either a static machine of large output, or a coil with mechanical break, or a rotary converter might be the source of the current supply. If a Leyden jar was attached to each of the two prime conductors of a static machine and the sliding poles were slightly apart and the machine running at fair speed, the rapid passage of sparks was noted at the sliding rods. A pair of electrodes attached to the outer coatings and held the same length apart would also show a shower of sparks. Such was the basic arrangement of all high frequency currents. The frequency of the oscillations depended entirely upon the capacity of the Leyden jars and the self-induction of the discharging circuit. With the multiple spark gap which was now employed they had succeeded in obtaining oscillations of infinitely great frequency and as a result great warming effects. The result from this great number of short fine sparks in increasing the rate of oscillations was truly amazing. They could obtain a gentle warmth or a heat that would desiccate the tissues in the shortest conceivable time. As a result of the greater self-induction produced by these extremely rapid oscillations there occurred the "kick off" or Oudin spiral. The brush effect was more marked, many times larger, and of greater density. Dr. de Kraft then described the methods of using the d'Arsonval current, which were three in number; the direct application, that method where the patient was placed in a large solenoid in such a way that no part of his body touched the solenoid; and the method of autocondensation. By the latter method the patient placed on the autocondensation couch would experience a slight sense of warmth, beginning at the wrist and gradually extending over the whole body. This was attended with flushing of the capillaries of the skin of the hands and wrists, which gradually extended over the whole body. The insensible perspiration of the skin was slightly increased. Patients suffering from gouty or rheumatic pains frequently experienced complete relief during treatment, which lasted sometimes for hours and sometimes for days afterward. An individual with normal pulse rate and temperature showed no change in either; this was true only of currents of moderate amperage. In other words, autocondensation helped to equalize the circulation where it was unbalanced. Raw meat, potato, etc., could be easily cooked by the high frequency currents, and the manner of cooking showed that this action of the current had been in a perfectly straight line between the electrodes. This was an important effect and enabled one to localize the action to any part of the body. There were two kinds of effects to be noted when these currents were applied by the bipolar method. The first was destruction and death of the tissues, and the second, increased function and vitality. To effect the first they heated the tissue to the point of coagulation. To gain increased function and vitality they heated the tissue gently. Not only did the cutaneous glands secrete sweat more freely during this treatment, but the liver secreted a larger amount of bile. They might even precipitate an attack of gallstone colic in persons not previously suspected of having gallstones. If the stones were small, the greater flow of bile might suffice to expel them. The activity of the function of the stomach, pancreas, genital organs, bladder, and kidneys might all be stimulated. In applications to the thorax, deepening of the respiratory excursions might be noted. In asthma the noisy respiration would cease, the expectoration become freer and less sticky, sleep would become easier, the appetite would return, and the bowels become normal. The attacks became fewer and finally ceased. In heart disease, where digitalis had failed to exert its physiological action, the heart responded and the dropsy was seen to disappear with profuse diuresis. In gonorrheal arthritis they heated the joint to the limit of safety. Gonococci died at a temperature of 40° C. and they observed marked relief from pain and swelling. In gout the bipolar method relaxed arterial spasm in the joint, produced an arterial hyperemia, and enabled the phagocytes to attack the urate of sodium needles, which Van Noorden told them were eaten with avidity by the

phagocytes. Dr. de Kraft showed the beneficial results of this treatment in acute alcoholism, the early stages of arteriosclerosis, the healing of old ulcers (even diabetic ulcers sometimes disappearing), in intestinal autotoxemia, and he alluded to the action of sparks and effleuves on bacteria. The healing of abscesses might be hastened by applying the effleuve. Prolonged application might lead to the formation of blisters. A more or less general application of the effleuve might raise the blood pressure several centimeters. The short hot spark, which had been used in destroying papilloma of the bladder, burned like a cautery and formed an eschar similar to a burn from a hot iron. The short spark of lower amperage, as used by William Clark of Philadelphia, fell short of producing an actual incineration of tissue; they simply deprived that part of its moisture. A careless technique, unsuitable apparatus, improper conception of the action of the high frequency currents, and ignorance of the indications to be met would result in failure to obtain the physiological effects described and failure to relieve the patient of his sufferings.

Some Applications of Phototherapy.—Dr. E. C. Titus presented this paper, confining his remarks to the practical therapeutical aspects of the subject based upon his own observations. The remedial action of sunlight was well known, and progress in electricity had placed at their disposal various means of obtaining light which closely approached that of the sun in its remedial action. The general application of phototherapy consisted practically in the use of the electric light bath. Dr. Titus then described the cabinet which he employed which had the advantages that it provided a large volume of light with a minimum amount of heat, that the emanations of noxious gases and odors from the human body were quickly carried off, that the degree of cutaneous hyperemia and diaphoresis was much more intense, and that the usual depression and other unpleasant symptoms were entirely obviated. Among the conditions in which the electric light bath would be found to be most serviceable were arteriosclerosis, gouty and rheumatic conditions, Bright's disease, diabetes, obesity, and acute catarrhal affections of the respiratory tract. The effects of the baths were to induce intense hyperemia of the skin and thus to reduce deep visceral congestion and to increase elimination by way of the lungs and skin. It had been found that during and following the bath the elimination of carbondioxide was practically doubled, while the profuse perspiration carried away much toxic material, thus relieving the overtaxed kidneys. In the local application of light the following means were available: 1. The arc light which was best employed by means of an ordinary searchlight, with its glass front window removed, was what he used. It consumed 25 to 35 amperes of direct current at 40 volts, and projected the light in parallel rays by a twelve-inch parabolic reflector and had a light power of about 5000 candle power. 2. The high power incandescent lamp fitted in a suitable dome reflector with a carbon or tungsten filament and of 500 candle power might be employed. The carbon filament used 12 amperes at 110 volts, while the tungsten lamp consumed only amperes at 110 volts. The former gave much more heat with the radiations, while the latter produced the greater degree of white light with a minimum amount of heat. The sum total of the combined effects of the thermal and actinic rays was an increased local activity as manifested by a pronounced hyperemia and an augmented tissue oxidation and elimination. The effects of the radiant energy were not confined to the site of application, but were so diffused that remote effects were produced in distant organs and nerve centers as a result of peripheral stimulation. It had likewise been shown by physiological investigators that the heat production in the tissues increased phagocytosis and thus enhanced the vital resistance. The rapid relief of pain and local spasm experienced from light therapy was due in a great measure to the reduction of congestion and to tissue relaxation. These decided effects were brought about with the least risks to the patient, a statement not applicable to other methods of treatment. The conditions in which the local application of phototherapy in his experience had yielded the most satisfactory results were many forms of spinal congestion, the acute stages of bronchitis or pulmonary congestion from any cause, pleurisy with effusion, acute and subacute inflammation of the gall bladder, congestion of the liver and other abdominal viscera from alcoholism, and persistent intestinal autointoxication, myalgias, acute otitis media, frontal or orbital headache accompanying acute coryza and especially involvement of the frontal sinus and ethmoid cells, acute appendicitis, various types of septic conditions such as phlebitis following labor or intrapelvic operations, infected wounds of the extremities. From his experience thus far there seemed to be a brilliant future for this measure in hastening repair in cases of delayed union of fractures. Subsequent experience had verified his observations made some time ago that the deleterious effects of the *x*-ray might be prevented by following its application with the rays from a marine searchlight.

Physical Therapeutics from the Modern Point of View.—Dr. William Benham Snow read this paper, in which he expressed the opinion that there was no department of medicine which was more neglected by most physicians than the use of electricity and other physical measures in therapeutics. Until recent years electrotherapeutics had been limited to the use of the constant and induced currents and a generally indiscriminate use of the static currents. Under the empiric régime of Erb and his followers the employment of electricity fell into disrepute, except with a few physicians who used it scientifically with a knowledge which enabled them to meet indications. These men had developed electrotherapeutics into a science which rivaled surgery or any other recognized medical procedure. There were three specific effects of electric currents which met distinctly different indications. These were: (1) Mechanical, (2) therapeutic, (3) electrolytic effects. It was generally desirable that currents be employed which practically produced but one of these effects in order to meet definite indications. In the static, the high frequency, and the constant currents they had three distinctly different classes of currents, which were peculiarly well adapted to meet the different indications respectively. Electrical currents which produced mechanical effects induced contraction of muscular tissue alternating with release when the rate of interruption was less than 600 per minute; above this rate contractions became tonic. For these effects the static methods excelled all others and were practically devoid of thermic and electrolytic effects. Such currents applied to infiltrated tissue forced out through the lymphatic channels the products of inflammation retained in swollen and indurated tissue. A part or organ which might have suffered a local trauma or sprain or was the site of local congestion was thus softened and the swelling reduced with a restored metabolism. In addition, the static current materially improved general metabolism and relaxed local muscular spasm by a selective action on the muscle cells and prevented its recurrence by having removed the causes of the spasm. The thermoelectric high frequency current, or the d'Arsonval high frequency current, produced an effect which was purely thermal without mechanical or electrolytic action. Its value from a therapeutic point of view was of comparatively recent recognition. When a tissue was irritated or heated it became promptly hyperemic, which result in either case arose from reflex stimulation of the vasomotor centers. The extent and degree of the hyperemia produced would depend upon the size of the electrodes and the volume of the current passing. The current would pass through and heat all of the tissues which were in the interval immediately between the electrodes and nowhere else. Electrolysis, with or without ionization, was the third property of electric currents which served a distinctly different purpose from the others in that it was a destructive process by which the tissues were disorganized. Salt solutions and organic bodies might be acted upon and separated into their ultimate elements and ionized into the tissues. The opposite poles were, therefore, distinctly different in their actions and indications, and a knowledge of these effects and an intimate familiarity with dosage and technique was imperative; for no current in the hands of a novice was so dangerous as the constant current. Radiant light and heat were important therapeutic agents, the value of which depended upon the effects of transformation of radiant energy into heat units and other vibratory effects when applied to the tissues. The effects of the higher frequencies were antiseptic or actinic and from the lower frequencies stimulating or inhibitory. The luminous effects undoubtedly increased the oxidizing powers of the blood with an increase in the hemoglobin. The heat effects arising from the absorption or transformation of radiant energy into heat vibration, locally increased metabolism, nutrition, and phagocytosis by the induction of hyperemia. This latter was the most important effect of radiant energy. After considering the *x*-ray with regard to its power of penetration and its inhibitory effects, Dr. Snow spoke of

convective heat, which, he said, was not capable of producing hyperemia beneath the skin. When employing high temperatures with the dry hot air apparatus, however, with the parts protected by Turkish toweling for the purpose of absorbing the perspiration, thereby preventing blistering, it was capable of producing an intense hyperemia in the deeper structures. By means of the depressing effects of the heat and the hyperemia thus induced, this method was valuable and uniformly successful in from two to four days in the treatment of pyogenic infections in an arm or leg. Mechanical vibration and concussion were important therapeutical measures which rendered the processes of massage much easier and more practical and were capable of producing deep penetrating vibration with stimulation or inhibition of the spinal centers and of the various organs in the abdominal and thoracic cavities. Dilated arterial trunks might be contracted and the stomach, kidneys, or other organs, relaxed or contracted at the will of the operator. Wherever inflammation was present without the presence of germs or malignancy in the inflammatory zone, the static modalities—the static wave current—the static sparks, brush discharge, and all other static modalities were preeminently the most effective means known to medical science for promptly restoring swollen and infiltrated tissues to normal. In nearly all conditions, except where fracture or rupture of bone or ligament or muscle was present, the results were remarkable. Noninfected cases, including a large number of conditions such as neuritis, sciatica, brachial, facial, or herpes zoster, noninfected synovitis, and the toxemias affecting the joints, were all relieved. Synovitis arising from intestinal toxemia demanded removal of the source of toxemia together with the electrical treatment. Gonorrheal arthritis in the male was promptly relieved by the application of the static wave current, preceded by the vacuum tube current, applied to the vesicles and prostate gland in the rectum. Dr. Snow said he had succeeded in relieving over two hundred such cases to date. Subinvolution and dysmenorrhea also yielded in 90 per cent. of the cases to the static wave current applied with a metal electrode in the rectum. The treatment of varicose ulcers, phlebitis, chronic eczema, and numerous other superficial skin conditions might be added to these. For efficiency in relieving these conditions the static machine holds this field preeminent. The mechanical effects were feebly produced by currents from other apparatus, but they did not compare in efficiency with the effects of the static current. The treatment of inflammation due to local infection by the combined effects of the *x*-ray, radiant light, and heat, and the high frequency currents, was one of the most satisfactory of modern therapeutic methods. Tuberculous infections, superficial and deep seated, might be effectively relieved in the first stages by these three potent agents used in proper combination. In tuberculous adenitis and the two types of lupus they seemed to be specifics. In pulmonary tuberculosis they undoubtedly filled an important place. In tuberculous peritonitis they comprised the rational treatment and there were many records of success from their employment. They were no less successful in the treatment of pyogenic infections, and had been effective in early and chronic appendicitis and in gonorrheal vesiculitis and epididymitis. These statements might seem too optimistic, but they would bear critical investigation. He also spoke of the effect of the d'Arsonval current upon hypertension and stated that it was possible to control the blood pressure in all except the most advanced cases of arteriosclerosis, to prevent apoplexy, and often to defer nephritis. In inflammatory processes with developing hyperplasia and adhesions it was always possible to arrest the process and promote absorption of such lowly vitalized tissue. Among other conditions which might be favorably affected by electrotherapeutics were pelvic hemorrhages arising from fibroids, menorrhagia arising from atonic conditions of the uterus, profuse menstruation, and all conditions of hypersecretion of the ductless or other glands, and also in cancer.

Dr. Emil Heuel asked Dr. de Kraft what he really meant by the term "high frequency current," and what Dr. Titus meant about the various color lights he used in his work. He could not agree with Dr. Snow in all that he said in his paper. He was still using drugs and was not depending entirely upon the use of physical therapeutics in spite of the fact that he had been interested in this sort of work for more than thirty years. In attacks of appendicitis and some other conditions the action of the light was very similar to, in fact, simply the same as that of Wertheim.

Dr. John H. Brandth limited his remarks chiefly to Dr. de Kraft's paper, and said that the paper was to him the more interesting because for many years he could not understand why high tension currents of electricity should pass along the surface and not directly through a body, for rapid moving forces were not easily deflected from their course. Electricity could be deflected to a degree by obstructions if the pressure was relatively small. X-rays could be slightly deflected by a magnet. Sunlight could be deflected to a degree by refraction of the conductor, which was glass or any translucent substance. Heat penetrated slowly, but directly. Still Houston and Maxwell made this claim regarding high tension currents. Some years ago Dr. Brandth demonstrated this error by sending a high tension current through rubber, glass, and water. He quoted a paragraph which he read at that time. Now, while he proved that these currents passed through the body in a straight line, acting consequently on the organs in this line, and as a result proved that this remedial action was of value, Dr. de Kraft, above all others, showed that the vascular motion induced by the electric vibrations evolved heat on the line of current passage. This heat was greatest in the middle between the two poles. The cooking of a potato or of a piece of liver showed this, and it showed, above all, that the current did not travel on the surface. To make use of this remedial agent, it should not be placed in the hands of a tyro, for one should know how to apply this remedy. In untrained and unskilled hands electricity was a dangerous weapon like a keen edged surgical knife. He had used the high frequency and high tension currents in cirrhosis of the liver with success. In one case which he reported the abdomen had been tapped every eight or ten days with the removal of from twenty-four to twenty-eight pints of fluid; this collection was caused by portal vein obstruction induced by the cirrhotic liver. This patient was now well. He also reported another case of atrophy of the liver, where the tappings obtained anywhere from sixteen to twenty-four pints of fluid every eight to fourteen days. This patient, too, was relieved and to-day was well. Dr. Brandth expressed his admiration of Dr. de Kraft's work along these lines. His achievements broadened their field of action in combating disease, in the establishment of orderly and healthy metabolism in place of pathological metabolism (which meant illness). They should not forget, however, that electricity was by no means a cure-all; it was only one remedy and must be applied only by those who were skilled and experienced in its use. He had found that static electricity promoted healthy metabolism, as, for instance, in chlorotic girls. To some of these patients one might give iron in any quantity, but assimilation was so defective that all the iron passed off by the stools and did not help the patient. But, in many cases, when static electricity was added the following healthy metabolism would invite the absorption of the iron and then only small doses need be given; then the stools would have a natural color. This assertion held good in nearly all forms of medication, perhaps even more so in the administration of mercurials.

MEDICAL ASSOCIATION OF THE GREATER CITY OF NEW YORK.

Stated Meeting, Held October 21, 1912.

The President, Dr. Reynold Webb Wilcox, in the Chair.

A New Method for the Direct Transfusion of Blood and Its Possibilities; Theoretically Considered.—Dr. Alfred Kahn said that the object of this paper was to consider theoretically a new method of transfusion, or a further development of methods now in vogue and discuss its possibilities. For want of a better name he would call it continuous transfusion, or transfusion between two or more subjects. This transfusion might take place between two subjects or between several subjects, and continue as long as the blood was kept in continuous circulation between the giver, or givers, and the receiver.

He spoke first of transfusion between two people, or cross transfusion. Vessels were to be connected in the following way: artery of donor to artery of donee and artery of donee to artery of donor; so that the blood would flow, for instance, from subject A to subject B, and back from B to A; making a crossed and complete

continuous circulation. Instead of making an artery-to-vein or vein-to-vein connection, as was now done, and ligating the two ends of vessels not entering into the transfusion, all ends of vessels were to be used; so that the blood would flow from the upper end of the artery of the donor to the lower end of the artery of the donee, while the blood from the upper end of the artery of the donee would flow to the lower end of the artery of the donor. The veins could possibly be utilized in the same way, but it was doubtful whether the transfusion could be kept up for as long a time as where the arteries were employed. He next spoke of transfusion between more than two subjects. Here a connection was to be made, say, between the left arm of A and the right arm of B, another connection between the left leg of C and the left leg of A, and still another between the right leg of C and the right leg of B; making a complete circulation. The connection in each instance was artery to vein; the blood flowing from B to A, to C, to B, and so on. The idea was to allow healthy blood to flow from the donor to the recipient, and after it had remained in the latter's body for a longer or shorter period, according to the object of the transfusion, the condition of the patient, etc., the return vessel was to be unclamped and the blood allowed to flow back to the donor. This would enable the donor to retain his strength and at the same time permit the patient's diseased or weakened blood to pass through a healthy body, where it received fresh sustenance, and then return to the diseased body. This method would secure an unlimited supply of fresh blood and for an indeterminate length of time. It had all the advantages of the present method, with the additional advantage that all the organs of the healthy subject participated in the act. The therapeutic possibilities of direct blood transfusion had been clearly set forth by other writers, especially Hartwell, and Cole and Winthrop had reported a series of cases of pellagra, in which this was employed with excellent results. As to the additional possibilities of continuous transfusion, if our laws of immunity, as now recognized, were correct, the possibility of curing most of the infectious diseases through this method could well be imagined. In this connection he had in mind the transfusion of blood, from a person immune (through a natural or acquired immunity) to a certain disease, to a person suffering from such disease, especially where the transfusion could be continued, back and forth, from one to the other; thus allowing the blood to be acted upon by healthy immune organs. Again, continuous transfusion might be employed as a means of nutrition. Of course, this would be an extreme measure, but the method possibly had a future before it in cases where a patient was unable to take food, as after gastrointestinal operations, or where patient was unable to digest his food. Third, there was the possibility of administering by this means a general anesthetic to a patient to be operated upon, through the medium of a healthy individual. This applied particularly to operations on the upper air-passages and the thoracic organs. Fourth, in cases where the respiration or circulation failed during a general anesthesia, continuous transfusion might be tried as a last resort. Fifth, it might be employed (after other means had failed) for the purpose of exciting circulation and respiration in the new-born. Among the disadvantages of continuous transfusion were the possible necessity of having the blood of three subjects (instead of two) hemolytic, and the number of connections required. In this method, as would have been seen, the blood of the donor was not entirely sacrificed, as was the case in transfusion as now performed. There was in reality an exchange of blood, so to speak; the patient receiving healthy blood and having his own blood flow into the system of the healthy subject.

Transfusion of Blood with Technique Recently Much Improved and Simplified.—Dr. ALEXIS CARREL, of the Rockefeller Institute, made an address, illustrated with lantern slides, on this subject. He said that transfusion by Crile's methods was simplified by employing the saphenous vein of the recipient, by making only a small incision in the arm of the donor, and by anastomosing the vessels with a thin-walled tube. The advantages and main points of this improved technique were the following: (1) It was very much easier to unite the radial artery to the saphenous vein than to the basilic or cephalic. The lower part of the internal saphenous could be extensively dissected very readily. (2) If a long segment of the saphenous were used it was not necessary to make an extensive dissection of the radial artery of the donor. A short incision in the skin and a dissection of the radial which would permit a lateral opening would be sufficient. (3) The gold-plated silver tubes employed, which were three or four centimeters long, were made by M. Gentile in accordance with the suggestions of Dr. Tuffier and Mme. de la Marine, and were similar to those used by Dr. Brewer. Before being used the tubes were paraffined. The radial artery was cut laterally and the tube introduced through a three-branched dilater made by M. Collin, as proposed by Dr. Dehelly. These improvements in the technique, the speaker said, would doubtless contribute to the method of blood transfusion originated by Dr. Crile.

Dr. GEORGE EMERSON BREWER said that for the idea of the method of transfusion which had been referred to by Dr. Carrel as the "Brewer method" he was in reality indebted to Dr. Carrel himself. It seemed very desirable to have a plan of procedure simpler than that of Crile, and with this end in view a series of experiments on animals was undertaken. With two or three others he had made some thirty or forty such experiments, paraffining the tube which was employed. In only one instance did coagulation of the blood occur, and in that case it was found that the paraffin coating had become loosened. Altogether, the results obtained seemed very satisfactory and convincing; but when they came to employ the procedure in the human subject they found that it was impossible to make use of the same large cannula as in the case of dogs. It therefore became necessary to use smaller tubes. The method was simpler and easier than that of Crile, but in one instance it failed absolutely. This was because the radial artery of the donor was so small that only an ounce or two of blood could be secured. Since then, consequently, he had been afraid to try this plan, and in the last four or five cases he had had he had resorted to the Elsberg method. Now, however, with the improvement devised by Dr. Carrel we could employ an ordinary tube with a very much larger caliber than we had before; one in which the lumen was practically of the same size as the external diameter. Within forty-eight hours after Dr. Carrel had shown him this improved tube he tried it in a case, but he had to confess that it failed, on account of the small size of the artery. He had, however, no dilator, such as Dr. Carrel had described this evening, and he was confident that if he could have had the assistance of this dilator the operation would have been successful. It seemed to him that if we could have a tube a little longer than that advised by Dr. Carrel it would be an advantage, as it would be considerably easier to handle. Dr. Carrel certainly deserved great credit for his improved technique, and he agreed with him that with the use of the large-caliber cannula this was now the simplest and easiest of all methods. Dr. Brewer went on to say that in one case he had made use of the ulnar instead of the radial artery, and he believed that it had certain advantages over the radial. Thus, it was usually rather larger, and there was not so much dissection required as in the case of the radial arterioles. He would like to inquire of Dr. Carrel as to the quantity of blood advisable.

Dr. JOHN DOUGLAS said that everyone who had done transfusion by the ordinary suture method, with cannulæ of various sorts, had sometimes failed. Most of his own operations had been done with the Crile or Elsberg cannulas. In one or two instances he had tried tubes such as Dr. Brewer had employed, but he had not found their lumen large enough, as they became clotted. He therefore believed the silver tube employed by Dr. Carrel a great improvement in simplifying the method of transfusion; as was also the anastomosing of the radial artery to the saphenous vein instead of the median basilic or median cephalic vein, the employment of the saphenous vein not only being easier for the surgeon but also making the positions of both the donor and recipient more comfortable.

Dr. FRANZ TOREK said that his experience included the use of the external jugular vein in the case of the recipient. He had employed this only a few days before, and was induced to do so by the consideration that a free flow of blood depends not only upon the size of the donor's artery but also upon the resistance to the flow in the body of the recipient. That resistance would be less in the jugular than elsewhere; in fact, the pressure at the jugular was negative. The position of the donor (radial to jugular) was somewhat uncomfortable, but the flow was satisfactory. In the case mentioned he used the Soresi apparatus for transfusion. Dr. Carrel's new method, he said, impressed him very favorably as being a simplification of former methods.

Dr. ALFRED KAHN said he did not see the great importance of having the limbs of the donor and recipient in close contact if an intermediate body such as a tube were used. He then stated that Dr. Fauntleroy, a surgeon in the United States Navy, had successfully employed

glass tubes, which were of some length, in the performance of direct transfusion. He also mentioned the fact that Dr. Frank of New York had been successful in making a direct transfusion experimentally, using the carotid artery of a dog. It was Dr. Kahn's opinion that if an intermediate body were to be employed a tube composed of animal matter, like the carotid artery of a dog, would make the best intermediate connection. He went on to say that some difficulty might arise as to the possibility of being able to distinguish when bubbles or obstructions formed in the tubes mentioned by Dr. Carrel, where paraffin was used. He thought that these tubes must be of such small caliber that it would probably be impossible to see through them and be able to discern the obstructions.

Dr. CARREL, in closing, said that as to the length of the tube he felt sure that we could make use of one four or five centimeters long without danger. In his experiments with animals he had once employed a glass tube one foot long. The tubes which he had given Dr. Brewer he did not hesitate to say, were too large. In regard to the use of the external jugular vein he had had no experience whatever. He was sure that the blood would flow freely into this vein, but it would appear that the procedure was more complicated than when the saphenous was employed. In reply to a question by Dr. Lindeman, in regard to the difficulty of ligating the arterioles, Dr. Carrel said if we made a dissection of the vein it was not necessary to ligate the radial arterioles. As to the amount of blood, this was impossible to say. Dr. Kahn had expressed the opinion that the tubes described were of such small calibre that it would probably be impossible to see through them and discover when bubbles or obstructions had formed in them, but Dr. Carrel had never had any trouble in seeing through these tubes and discovering the bubbles made by paraffin.

The Effect of Drainage on the Prevention of So-Called Typhoid Perforation.—Dr. FORBES HAWKES, in this paper, said that it too frequently happened that the surgeon was called upon to operate on a patient suffering from typhoid fever complicated with a diffuse purulent peritonitis arising from one of the ulcers, which later on had given way, allowing the fecal material to be scattered broadcast in the general peritoneal cavity. The mortality records of such cases, even in the hands of the most skilful and experienced operators, was deplorable. In a general way, the longer the time that had elapsed between the production of the pus in the peritoneal cavity and the operation, the less was the chance of recovery. From the time that the condition first came to be recognized as a surgical one special attention had been devoted to the early recognition of this so-called perforation. It was soon found, however, that in many cases there was no symptomatic line of demarcation between a purulent peritonitis arising from the ulcer and the giving way of the ulcer, with the escape of fecal material into the peritoneal cavity. But a so-called preperforative stage of the disease was conceived of, and attempts were made to recognize such a stage as a sharply defined one. While the term was a loose one, which did not give any indication of the pathological changes which had occurred, he was not in favor of discarding it at the present time, because it might help to draw the attention of physicians generally to the conditions existing about the ulcers as soon as they had invaded the muscular coat of the bowel—suggesting, on the one hand, an early process which was not without distinct hope of recovery if properly influenced, and, on the other, overwhelmingly rapid changes, soon passing to a fatal issue, if the conditions were unrecognized. What, then, was this so-called preperforative stage? It was simply that of the peritonitis which began about the site of the ulcer and progressed with it. Its symptoms, therefore, would be simply those of this peritonitis, and the peritonitis would assume either the dry or the wet form, with adhesic or fluid exudate according, apparently, to the nature of the infection. One, then, might say: "This sounds very simple. If all that I have to do is to recognize peritonitis, I will have my patient operated on as soon as I find it, and thus give him the best chance of recovery." Dr. Hawkes said this was certainly true, and that he firmly believed that anyone having his patients operated upon as soon as signs of peritonitis appeared would have an admirable line of recoveries to report. Unfortunately, however, we did not see such lines of recoveries reported. They were not to be found in the literature on the subject, and for a very good reason. This early peritonitis was not being recognized as it should be by medical men in general. It seemed to be recognized only by men who had devoted much time to this special matter and who had the opportunity of constantly handling a large general abdominal service. He would venture the remark, based on his observations in teaching the subject of abdominal surgery to medical students, that there was no one thing of greater importance in abdominal surgery than the recognition of the earliest signs of commencing peritonitis. He then quoted from an article which he had published in the *Annals of Surgery for* May, 1911, in which he described the early diagnosis and stated that many cases had now been reported where operations were done early in the process, before the peritonitis had become purulent and before the ulcers had broken through, and that almost all these patients had recovered. Having cited an illustrative case the details of which were given in the article referred to, he went on to say that a sufficient number of early cases had been reported to justify the statement that an early exploratory operation, with the establishment of proper drainage, seemed to exert a beneficial influence in several ways: (1) If the fluid exudative type of peritonitis be found, the drainage will either arrest it or convert it into the dry, exudative type. (2) The relief of tension will favorably affect the peritoneal inflammation here, as it does elsewhere; stopping it entirely in the mild cases, hindering the development of pus in others, and localizing the pus in or near the drainage tract in the more severe cases. (3) The ulcers themselves seem to be favorably influenced by the peritoneal drainage. Local anesthesia seemed best for some cases. The shock of simple opening of the peritoneal cavity, and introducing a drain into the right iliac fossa or into the pelvis, ought not to be a marked one. If we waited until pus was produced in the peritoneal cavity our patient's chances of recovery would probably be diminished by at least 50 per cent. The cases with free feces in the peritoneal cavity almost all died.

Dr. VICTOR A. ROBERTSON said it seemed to him that this diagnosis of the preperforative stage offered many difficulties, and personally he was free to confess, he had never been able to recognize it. We should look for its occurrence at the end of the third week, when the sloughs from the intestinal ulcers were beginning to separate, but it was possible later on in the disease, and even when convalescence had begun. There might be a local inflammation of the serosa, with slight adhesions, which would give the symptoms of which Dr. Hawkes had spoken. The important matter was not so much to decide positively on perforation, or even impending perforation, but that some abnormal abdominal condition was developing which required operative interference. If exploration were undertaken, any intraabdominal condition could be properly dealt with, irrespective of its location. It was interesting to note that as far back as 1884 Mieulicz had operated for typhoid perforation, and he then stated that, if suspicious of perforation, one should not wait for an exact diagnosis, and allow peritonitis to reach a pronounced degree, but at once institute an exploratory operation; which in many instances was free from danger. He (Dr. Robertson) could readily understand that in hospital cases, where the patient could be kept constantly under observation, when every feature of the patient's condition had been carefully scrutinized, any change in his condition, however vague, could be noted, and even a slight change might serve to arouse the suspicion of an impending perforation and lead to a physical examination which would indicate this. In private practice these circumstances were not present, and slight, though important, symptoms of impending trouble might be overlooked. The value of an early diagnosis and early operation could not be overrated. He could not agree with the reader of the paper that in the case cited a beginning purulent peritonitis was converted into a general adhesive inflammation of the peritoneum, with agglutination of coils of the intestines and a prevention of perforation in this way. It seemed to him that the relief afforded was the relief of tension by drainage and the setting up of adhesions in the intestines in immediate contact with the drain. At autopsies he had often remarked the rarity of adhesions in typhoid, as compared with those in perforation from gastric or duodenal ulcers or perforation of the gall-bladder. In most of the cases of perforation in typhoid seen by him diarrhea was a marked symptom, and he thought this was apt to come from the overfeeding which was now commonly practised in the treatment of this disease. Dietetic errors, with secondary gastrointestinal irritation and abnormally increased peristalsis and meteorism, were responsible at times for perforation; while some types of infection might be more violent, and lead to more ulceration of Peyer's patches. In some of the diets employed there was given too large an amount of proteids, which were prone to cause putrefactive changes with tympanites and diarrhea. More carbohydrate foods, such as cereals and gruels, added to milk, were preferable. He realized that

one could not by antiseptics destroy the intestinal flora, but believed that their overgrowth could in some degree be inhibited by intestinal antiputrefactives. A routine use of a mild laxative, such as castor oil, he had frequently prescribed, and it seemed to him that the mechanical unloading of a distended bowel, with the consequent evacuation of large amounts of bacteria, materially lessened the toxemia and tympanites.

Dr. HENRY ROTH said that some years ago the mortality statistics of intestinal perforation were collected, and these showed that no less than 25,000 persons died in the United States from typhoid perforation alone. Since then the results had not improved very much, because in most of the cases the condition was not discovered until too late for surgery to be of much service. The mortality in the operated cases was about 75 per cent. The only way of improving this state of affairs was by an early recognition of the condition; if possible, in the preperforative stage. This could be done only, he thought, by devoting day by day as much care and attention to the discovery of abdominal rigidity and tenderness in typhoid fever patients as was now commonly done in examining for enlarged spleen, a much less important matter. Just as soon as either of these two signs was disclosed an operation should be performed, provided that other conditions capable of causing them could be excluded. He feared, however, that surgeons would not be very successful in getting the cases at this early period, because physicians as a rule were not willing to consent to have an operation done unless actual perforation was shown to have taken place.

Dr. A. ERNEST GALLANT said that the late Dr. Van Arsdale, under whom he used to work, had always laid stress on the value of delicate manipulation in the examination of the cases. With a light touch segments of abdominal resistance could often be made out where this would be impossible under rougher handling. He could not quite agree with Dr. Hawkes that the fingers should be flexed in making the examination. Better results could be obtained, he thought, with the fingers laid flat on the abdomen, or even with their ends slightly tilted up. It was also advisable that the examiner should be as much as possible on a level with the patient, instead of bending over him. With the high hospital beds commonly in use the physician might make the examination standing, but in private practice, where the beds were low, he could examine most successfully while in a sitting posture. The use of the term rigidity in this connection seemed to him a mistake, and he preferred, especially in teaching, to call the condition localized resistance. It would be interesting and valuable, he went on to say, to know just what kinds of infection resulted in adhesions. The pure typhoid infection, he believed, was not one of the type which caused adhesions. When he had a case of non-adhesive peritonitis, he always felt that he had a death certificate to sign.

Dr. EDWARD WALLACE LEE said that adhesions did result from typhoid, and in some instances he had observed quite extensive ones. Adhesions following peritonitis from typhoid fever he believed, however, were not as deadly as had been supposed.

Dr. HAWKES, in closing, said that if in any case there was distinct rigidity we should operate at once, just as we would in a case of appendicitis. The value of the treatment he had advised lay, he believed, in the production of a distinct adhesive peritoneal tract; so that perforation was either prevented or delayed. If it occurred, the fecal matter was thereby prevented from flowing into the general abdominal cavity. In typhoid fever we had toxic and non-toxic cases, and the toxic cases almost all proved fatal, whatever treatment might be employed. In the non-toxic there was the best chance for drainage, and if perforation did occur, the intestinal contents came out into the adhesive tract of which he had spoken. The great point for successful treatment was the recognition of the rigidity. As to the method of digital examination for rigidity (which might be termed localized resistance if one preferred), some examiners would no doubt find one position of the fingers of most service, and some another position. As to the advisability of the examiner being on a level with the patient, he thought Dr. Gallant's suggestion a good one.

In reply to a question by Dr. Lee as to whether the drainage referred to acted as a prophylactic for the prevention of continued ulcerations, Dr. Hawkes said that further ulceration might occur at other points. He had not seen this, however.

CLINICS, DEPARTMENT OF PUBLIC CHARITIES

Calendar, December, 1912

MONDAYS

City Hospital	Ophthalmology	Dr. Strouse	2.00 P.M.
	Gynecology	Dr. Child	2.00 P.M.
	Surgery	Dr. Dawbarn	2:30 P.M.
Neurological Hospital	Neurology	Dr. McPhee	2.00 P.M.
Cumberland Street Hospital (Brooklyn)	Surgery	Dr. Walmsley	2:30 P.M.
	Laryngology and Rhinology	Dr. Stewart	4.00 P.M.
	Oral Surgery	Dr. Shea	4.30 P.M.
Kings County Hospital	Gynecology	Dr. McNaughton	9.00 A.M.

TUESDAYS

City Hospital	Surgery	Dr. Collins	10:30 A.M.
	Dermatology	Dr. Bronson	2.30 P.M.
	Medicine	Dr. French	3:00 P.M.
Cumberland Street Hospital (Brooklyn)	Gynecology	Dr. Burnham	3:00 P.M.
	Surgery	Dr. Iler	3.00 P.M.
Kings County Hospital (Brooklyn)	Surgery	Dr. Bristow	2.00 P.M.
	Genito-urinary Surgery	Drs. Norton and Fraser	2.00 P.M.
Coney Island Hospital	Surgery	Drs. Fisk and Bogert	10.30 A.M.
	Medicine	Drs. Hall, Nash, Hegeman and Byington	3.30 P.M.

WEDNESDAYS

City Hospital	Surgery	Dr. Dawbarn	9:00 A.M.
	Genito-urinary Surgery	Dr. Fuller	2:00 P.M.
	Obstetrics	Dr. Dorman	2:30 P.M.
Metropolitan Hospital	Surgery	Drs. Ostram and Harrington	2.30 P.M.
	Genito-urinary Surgery, Dec. 4	Dr. Carleton	2:30 P.M.
	Dermatology, Dec. 4	Dr. Dearborn	2:30 P.M.
	Dermatology, Dec. 11	Dr. Dearborn	2.30 P.M.
	Ophthalmology Dec. 11	Dr. Boyle	
	Medicine, Dec. 18	Drs. Klots and Laidlaw	
	Genito-urinary Surgery, Dec 18	Dr. Carleton	
	Pediatrics, Dec. 18	Dr. Wallin	
Neurological Hospital	Neurology	Dr. Maloney	9.00 A.M.
Cumberland Street Hospital (Brooklyn)	Ophthalmology and Otology	Dr. Schmuck	4:00 P.M.
Kings County Hospital (Brooklyn)	Orthopedics	Dr. Truslow	9:00 A.M.
	Dermatology	Dr. Winfield	1:00 P.M.
	Orthopedics	Dr. Napier	2:00 P.M.
Coney Island Hospital	Pediatrics	Drs. Beck, McQuillan, Pendelton and Van Wart	3:30 P.M.

THURSDAYS

City Hospital	Medicine	Dr. Evans	9.00 P.M.
	Surgery	Dr. Collins	10:30 A.M.
	Gynecology	Dr. Child	2:00 P.M.
	Medicine	Dr. Brooks	2:30 P.M.
Cumberland Street Hospital (Brooklyn)	Gynecology	Dr. Burham	1.00 P.M.
	Surgery	Dr. Walmsleep.	3:30 P.M.
Kings County Hospital (Brooklyn)	Obstetrics	Dr. Judd	10.00 A.M.
	Otology	Dr. Alderton	1.00 P.M.
	Surgery	Dr. Bristow	2:00 P.M.
	Pediatrics	Dr. Parrish	4.00 P.M.
Coney Island Hospital	Gynecology	Drs. Mayne and Rankin	10:30 A.M.
	Rhinology and Laryngology	Dr. Tucker	1.30 P.M.
	Gynecology	Drs. McEvitt and Mills	3.00 P.M.
	Surgery	Drs. Murphy and Lack	3.00 P.M.

FRIDAYS

City Hospital	Dermatology	Dr. Bronson	2.30 P.M.
	Obstetrics	Dr. Dorman	2:30 P.M.
	Surgery	Dr. Dawbarn	2.30 P.M.
	Laryngology and Rhinology	Dr. Dougherty	2:30 P.M.
Neurological Hospital	Neurology	Dr. Abrahamson	9:00 A.M.
Cumberland Street Hospital (Brooklyn)	Surgery	Dr. Iler	3:00 P.M.
	Surgery (Oral)	Dr. Shea	4:30 P.M.
Kings County Hospital	Gynecology	Dr. McNaughton	9:00 A.M.

SATURDAYS

City Hospital	Genito-urinary Surgery	Dr. Fuller	2.00 P.M.
	Pathology, demonstrations and lantern exhibitions	Dr. Larkin	2.00 P.M.
	Medicine	Dr. French	4:00 P.M.
Neurological Hospital	Neurology	Dr. Jelleffe	2:00 P.M.
Kings County Hospital (Brooklyn)	Obstetrics	Dr. Commiskey	10:00 A.M.
	Surgery	Dr. Bristow	2.00 P.M.
	Medicine	Dr. Stivens	3:30 P.M.

A Specific Immune Lipase.—J. W. Jobling and C. G. Bull conclude that erythrocytes have definite lipoidal constituents and lipoidal combinations peculiar to the species. Certain lipoids and lipoidal combinations act as specific antigens. The increase in serum lipase which occurs upon immunization of animals to foreign red cells is, at least in part, specific. This specific lipase plays, no doubt, an important part in specific serum hemolyses.—*Journal of Experimental Medicine.*

Miscellany.

The Alienists as Caricatured by Molière.—B. M. Randolph presents the following extract from Molière's comedy ballet, M. de Pourceaugnac, in which the father of the French drama indulged freely in his usual raillery against physicians. M. Pourceaugnac is a wealthy, fat, middle-aged bourgeois from a provincial village, whom Oronte has selected as husband for his daughter. The latter being in love with Eraste, her lover plots to have M. Pourceaugnac attainted in the estimation of Oronte. To do this he engages two physicians to declare M. Pourceaugnac insane. Their method of procedure is as follows:

First Physician. "Come, sir, take a seat."
(The two doctors make M. P. sit between them.)
Pourc. "Your very humble servant." (They each take a hand to feel his pulse.) "What does this mean?"
First Phys. "Do you eat well?"
Pourc. "Yes, and drink still better."
First Phys. "So much the worse; this great appetite for cold and moisture is an indication of the heat and dryness that is within. Do you sleep soundly?"
Pourc. "Yes, when I have supped well."
First Phys. "Do you have dreams?"
Pourc. "Sometimes."
First Phys. "Of what nature are they?"
Pourc. "Why, of the nature of dreams. What the devil is this conversation?"
First Phys. "How are your dejections?"
Pourc. "Faith, I understand nothing of all these questions; I would rather take a drink."
First Phys. "A little patience. We are going to reason on your case in your presence, and we will do it in French to be more intelligible."
Pourc. "Why so much reasoning in order to eat a little?"

The first physician enters into a long-winded, learned discourse on the diagnosis of the supposed malady, which he declares to be a hypochondriacal melancholy. The second physician, after a long and complimentary tribute to the one who has just spoken and after congratulating M. Pourceaugnac on having fallen into the latter's hands, proceeds:

" . . . All I should wish is that the bleedings and purgations be of an uneven number—*numero deus impare gaudet*—to take the whey before the bath; to place a salt bandage on the forehead, as salt is the symbol of wisdom; to whitewash the walls of his room, to dispel the dark shadows of his mind, and to give him every hour a small clyster to serve as a prelude and introduction to these judicious remedies, from which, if he is going to get well, he ought to receive relief. Pray heaven, sir, that these remedies that are yours, may conquer the disease according to our intent."
M. Pourc. "Gentlemen, I have been listening to you an hour; is this a play?"
First Phys. "No, sir; we are not playing."
Pourc. "What is all this, and what do you mean by this bosh?"
First Phys. "Good. Abusive. That is a diagnostic sign that was lacking to establish the disease; this may easily turn into mania."
Pourc. "Where have they placed me?" (He spits two or three times.)
First Phys. "Another diagnostic sign—frequent spitting."
Pourc. "Let's stop this and get out of here."
First Phys. "Still another sign—restlessness."
Pourc. "What is all this business? What do you wish with me?"
First Phys. "To cure you acccording to our orders."
Pourc. "Cure me?"
First Phys. "Yes."
Pourc. "Zounds, I am not ill!"
First Phys. "A bad sign when the patient is not conscious of his malady."
Pourc. "I tell you I am well."
First Phys. "We know better than you how you are; we are physicians, who can see clearly into your constitution."
Pourc. "If you are physicians, I will have nothing to do with you; I mock at medicine."
First Phys. "Hm. Hm. This man is crazier than we thought."
Pourc. "My father and mother never wanted any remedies; they both died without the assistance of physicians."
First Phys. "I am not surprised that they have given birth to a son who is insane. (To the second physician.) Come, let us proceed to the cure: and by the exhilarating sweetness of harmony let us assuage, soften and calm the spitefulness of his spirits, which I see are ready to burst into flame." —*Old Dominion Journal of Medicine and Surgery*, October, 1912.

The Army Medical Officer in Ancient Times.—Sir Henry Morris notes that in times as remote as that of the siege of Troy army doctors were held in the highest esteem. The two sons of Æsculapius, Machaon and Podalirius, were, according to Homer, very important persons in the Greek army. A stir was made in the third great Trojan battle, when Paris, "the spouse of Helen, dealing darts around," struck Machaon in the right shoulder. The wounded surgeon was carried off the battlefield by Nestor in the old warrior king's own chariot; and Achilles, sulking in his ship, having watched the progress of the battle, sent Patroclus to inquire what had happened. It was when describing these events that the poet exclaimed:

> A wise physician skilled our wounds to heal
> Is more than armies to the public weal.

Amidst all the greatest heroes of the Greek army —Agamemnon, Ajax, Ulysses, Achilles, and many others—Machaon was always spoken of as "the great Machaon," as in the following lines from Pope's translation of the *Iliad:*

> Of two famed surgeons, Podalirius stands
> This hour surrounded by the Trojan bands;
> And great Machaon wounded in his tent
> Now wants that succor which so oft he lent.

In the sixth and fifth centuries, during the wars of Persia with the Asiatic States, Darius I (521-485 B.C.), the "King of the whole civilized world," and "the King of Kings," as he called himself, as well as his successors, had Greek physicians and surgeons in their suites. In the accounts of the wars of the Persians against the Greeks we read of the physician Ctesias of Cnidus as being for seventeen years (414-398 B.C.) in the service of the kings of Persia. Ctesias is specially remembered, not as constantly accompanying Artaxerxes II (404-359 B.C.), but as being a great historian, like Herodotus and Xenophon, of the Persian wars. The Persians, to their honor, conducted their wars with great humanity, and treated their prisoners with kindness, and in many instances even with liberality and favor.

Philip, an Acarnanian, was physician and surgeon to Alexander the Great, and accompanied him through his Asiatic wars. There is an interesting story told of them. When Alexander was lying seriously ill at Tarsus a letter reached him warning him that Philip had been bribed by Darius III to poison him. Having read the letter, Alexander handed it to Philip to read, and after doing so swallowed a potion which Philip had prepared for him. This proof of the unshaken confidence of the king in his physician was soon followed by Alexander's recovery.

In the second century of the Christian era the illustrious Galen was specially summoned by Marcus Aurelius to be with him in his campaign in Northern Italy.—*The British Medical Journal.*

Medical Record

A Weekly Journal of Medicine and Surgery

Vol. 82, No. 23.
Whole No. 2196.

NEW YORK, DECEMBER 7, 1912.

$5.00 Per Annum.
Single Copies, 15c.

Original Articles.

THE SANITARY CONQUEST OF THE PHILIPPINE ISLANDS.*

By COLONEL L. MERVIN MAUS, Medical Corps, U. S. A.

CHIEF SURGEON, EASTERN DIVISION; FIRST COMMISSIONER OF PUBLIC HEALTH, PHILIPPINE ISLANDS.

THE military conquest of Cuba, Porto Rico, and the Philippines by the United States in 1898 cannot be measured by her brilliant triumphs on land and sea, her large extension of productive territory, her increased wealth and added national prestige, but by her priceless victories over tropical diseases and conditions which for centuries had hovered over those favored isles of the southern seas as angels of death, and converted them into a charnel house both for native and foreign born.

When the stars and stripes first floated over Moro Castle, Havana, Santiago, and Manila, the sanitary conditions of those famous tropical capitals resembled that of European cities during medieval times. Pestilential and filth diseases stalked unrestrained through the fair "Pearls of the Antilles and the Orient," sacrificing hundreds of thousands of valuable lives and running up a death rate appalling in its excess over that of other civilized portions of the world.

Besides ignorance, poverty and squalor existed on every side and the benighted population saw no ray of hope or light until America intervened and gave them a progressive form of government, which infused new life and vouchsafed political, educational, and religious liberty.

The splendid triumphs of the Yellow Fever Board in Cuba, which have encircled the globe, have brought more national prestige to the United States than the victorious clash of arms since the creation of our Great Republic. Through the scientific and painstaking work of Read, Carroll, Lazear, and Agramonte, yellow fever has been practically banished from the Western Continent, thousands of valuable lives have been saved annually and untold millions added to the wealth of the world.

In our laudations of those gallant men who risked their lives daily for months to prove that the mosquito was the host of yellow-fever infection, let us not forget Doctor Carlos J. Finlay, the distinguished hygienist of Havana, who had promulgated that remarkable theory almost twenty years before, and indeed was mainly responsible for the governmental investigation.

The watchword of American activity in Cuba and the Philippines was "Cleanliness," and in our fight against diseases and insanitary conditions all rancor of battle and strife was lost. Indeed, such an impression was created in the minds of the simple-minded natives over "limpieza," the Spanish word for cleanliness, that they regarded it as a new tutelary protector added to the long list of saints, before whom they had bowed for centuries.

Advanced sanitary and educational methods were also introduced into Porto Rico and the Panama Zone, with corresponding improvement in health and general prosperity. Through the splendid work of Ashford, hookworm infection, that underlying cause of anemia and poverty in Porto Rico, has been practically eradicated, and the construction of the Panama Canal has been rendered possible through the antimalarial work of Gorgas and his colaborers in the Canal Zone.

Before discussing the great sanitary work accomplished in the Philippine Islands, let us glance at the general conditions of their peoples at the date of American Invasion.

Before the Spanish war few of the natives could read or write, as shown by the American Census of 1903-4. The educational institutions of the islands were practically confined to Manila and two or three of the larger provincial towns. With the exception of the wealthy natives and mestizo classes, few of the inhabitants enjoyed the privileges of education, although Spain had attempted on several occasions to organize a public-school system for the masses, which had been frustrated by the controlling authorities. During the centuries of Spanish domination and misrule, the slogan had ever been, "Amuse the Indian, but keep him ignorant."

Generally speaking the domestic environment of the Filipino was confined to a two or four-room nipa house, elevated on bamboo poles eight or ten feet above the ground. His furniture was primitive and simple and rarely included chairs, tables, or bedsteads, while the illumination was secured through tallow or cocoanut oil dips. Rice and fish formed the staples of his dietary, and a home-made straw hat, cotton shirt, and trousers, his wardrobe.

Drinking water was taken from an infected well within a few feet of the kitchen door, surrounded by a setting of garbage, filth, and human excreta. The family caraboa, hog, dog, and domestic fowls were domiciled under the house, and the adjoining fences were overgrown with woods and dank vegetation. The sanitary conditions and habits of the people at that time might very aptly have been compared with those of the Pueblo Indians of Arizona and Mexico.

Practically all of the country people lived in small, poorly lighted towns and villages with wretched streets, and it will take no stretch of the imagination to realize the dreariness and monotony of their surroundings. There were few social distractions or amusements to make life pleasant; besides, they were deprived of the elevating and entertaining influences of education, books, magazines, and newspapers, and it was no wonder that they had become tired of their old masters and were

* Address delivered before the Lake Mohonk Conference of Friends of the Indian, and other dependent peoples, October 24, 1912.

willing to accept any other government fate chanced to send.

Much that is contradictory has been said and written of the characteristics of the Filipino as a race. He has been charged with intelligence and incapacity, virtue and vice, veracity and mendacity, honesty and roguery, fidelity and treachery, industry and laziness. In this connection it must be remembered that for over three hundred years the Filipino had been a vassal of Spain and the monastic orders, and what he was at the time of American intervention can be safely laid at the door of his exemplars and masters.

Naturally light hearted and with a love of home, family, and music they may be regarded as a happy people upon whom the responsibilities of life sit lightly. While not fond of work, one never finds the able-bodied Filipino a beggar. For centuries he staggered under the exacting labor of rice paddy, forest, or mine without reward or compensation save the brutal oaths and lashes received from his task masters, the Spanish encomenderos.

Should he by chance have acquired education, independence of thought, and wealth, he was not left long to enjoy it. Swiftly and surely he would awaken some morning to find himself under the ban of filibusterismo, his property confiscated, and a sentence of banishment awaiting him to some distant penal colony from whence he never returned.

With no incentive to acquire property he preferred the sports of the gaming table and cock-pit, the entertainment of church processions and fiestas, and the relaxation afforded by the numerous saint's day holidays. During the lapse of these cruel centuries of ill treatment the Filipino has ever maintained strong racial qualities of pride, ambition, and independence, and it is through these characteristics that he is destined at no late date to become a great factor in molding the progress and civilization of the Orient.

The Philippine Board of Health was organized in 1901 under the administration of President William H. Taft, the first civil governor, who appointed the speaker the first commissioner of Public Health. The provisions of the bill creating the Insular Board were extremely liberal and it was due to this fact that the Board was enabled to frame health laws and create a department which practically revolutionized the sanitation of the islands and reduced the annual death rate of Manila 50 per cent. within the year. The death rate per 1,000 in Manila in 1900 was 60 to 70, while in 1902 it was reduced to less than 30 per 1,000.

Among the many vital questions with which the Philippine Board had to deal, may be mentioned the epidemic of bubonic plague in Manila in 1901-2, the public vaccination of over 3,000,000 of natives and the control of a widespread epidemic of smallpox, the segregation and colonization of over 4,000 lepers on the island of Culion, combating the great epidemic of Asiatic cholera in 1902, which carried off hundreds of thousands of the ignorant natives, the control of tropical dysentery and malaria, creation of health laws for the practice of medicine, dentistry, pharmacy, and veterinary medicine, the organization of provincial and municipal health boards, besides the care of the insane, public sick, and the domestic animals of the archipelago which were suffering from surra and rinderpest at the time.

The laws pertaining to medicine and allied professions in the Philippines stand to-day as models of their kind, and it was due to their speedy enactment that the flood of quacks and imposters were barred from the islands and the ignorant and poverty stricken natives saved from their merciless deception and importunity.

The Philippines have never been popular with the American people and consequently little has been said or written of our sanitary and colonial successes in the Far East, while the public has been kept in close touch with the work in Cuba, Porto Rico, and the Panama Canal by every newspaper, magazine, and penny-a-liner in the land.

When one considers the many millions spent on the malarial crusade in the sparsely settled strip occupied by the Canal Zone, with the comparative pittance disbursed on the complicated and colossal sanitary problems of the Philippine Islands, a territory as large as Great Britain with a population as great as Holland, Belgium, and Switzerland combined, it will be seen that the sanitary successes in the Philippines outweigh by far those of the Panama Canal. It will be remembered that the Canal Zone contains a population of only 70,000 with an area of 380 square miles, while the Philippines have a population of 8,000,000 and an area of 127,000 square miles.

Besides, the sanitary work in the Canal Zone has been practically confined to the suppression of malaria, and the well beaten paths of drainage, oiling, and screening, and is elementary in character in comparison with the constructive work of the many complicated sanitary and economic problems encountered in the Philippines.

The successful campaign against bubonic plague in Manila in 1901, which involved the destruction of the rodents of the city through traps and rat bane, was the first practical demonstration in the history of that disease, of the theory that infected rat fleas served as the host of the plague bacillus. A low estimate of the rats destroyed during the crusade places the number at 800,000 and the number examined microscopically to detect the presence of infection among them at 30,000. Time forbids the details of house inspection, remodeling, immunization of the natives through serum vaccination, and other sanitary measures employed during the campaign. Within six months after its commencement the disease was eradicated from Manila, and with the exception of a few sporadic cases, attributed to reinfection from China, the city has remained immune ever since.

Smallpox, which had been in evidence in the Philippines for a century or more, was one of the most serious sanitary problems the Americans had to contend against during the days of early occupation. The disease was general throughout the archipelago and was encountered in its most infectious form on the streets of every pueblo and even in Manila, the capital itself. Indeed it became such a serious menace to the health and lives of our troops, that many of them contracted the disease and died. In justice to the protection afforded by vaccination against smallpox, it is only necessary to add that those men who contracted the disease had not been properly vaccinated.

Few of the natives were protected and the disease was not only very fatal among them, but was regarded as inevitable through their belief in fatalism, a creed common to the Malay race. The funerals were conducted publicly, and the community litter coffin in common use among them, was returned to its niche in the church without disinfection

after conveying the corpse to the Campo Santo.

In 1901 a compulsory vaccination law was enacted and put in operation, and within a few years over 3,000,000 of the natives were vaccinated. Virus was prepared by the Board of Health from caraboa heifers, and the vaccinations were made by instructed natives. As a result of this benign law against that repulsive and fatal disease thousands of valuable lives are saved annually and smallpox is reduced to a negligible factor among the diseases of the Philippines, even more so than in many sections of the United States.

Oriental leprosy, until recently, has occupied a conspicuous position among the tropical diseases of the Philippines. According to some historians it came from Japan. It is said that a shipload of lepers was transferred to Manila early in the seventeenth century by the Tokugawa Shogun Ieyasu, as a gift to the friars whom he heard were fond of caring for the sick. The afflicted from this terrible plague were numerous throughout the archipelago during Spanish domination, and many of them occupied positions of importance as village presidentes, councilors, treasurers, and notaries-public. No restriction whatever was enjoined against attendance at church, fiestas, cock-pits, bailes, and neighborly visitation.

Under the direction of the Insular Board of Health a census was started in 1901 which disclosed the presence of 4,000 of these unfortunates in the archipelago. A law was passed for their segregation on the island of Culion and funds were appropriated for the construction of suitable hospitals and quarters for their reception. The island of Culion is about the size of the Panama Strip and contains sufficient suitable lands for the cattle industry and agriculture of the colony. Hospitals, churches, schools, and places of amusement have been provided, with competent physicians, teachers, nurses, and administrators.

The law has been in operation since 1907, during which period practically all of the lepers in the archipelago have been collected. The colony at present represents about 2,500 souls, the annual death rate of whom is close to 100 per 1,000. Few new cases have occurred since their segregation on Culion island and it is believed that the disease will disappear from the islands with the present generation.

Asiatic cholera, that twin sister of bubonic plague in its most fearful mortality, had made frequent visits to the Philippines during the nineteenth century, and returned to the islands again in 1902. During its presence in 1884 it is said that over 3,000 deaths occurred in Manila in one day, and hence its return was announced with the gravest apprehension.

Following in the steps of the insurrection among a half famished people, whose primitive habits, wretched sanitary conditions, and surroundings served as an excellent pabulum for infection, the problem appeared almost hopeless, especially as racial and political prejudices ran high and little confidence was felt in the motives of the Americans, many of whom were believed to be agents of the Evil One.

A certain class of Spanish physicians and friars even went so far as to deny the existence of cholera on account of the small number of cases which occurred in Manila as a result of the prompt sanitary measures enforced by the Board of Health. Rather than have their houses quarantined and subjected to fumigation after disposal of the cases, they drove infected members of the family into the street and secretly buried their dead under heaps of old lumber, in the rice paddies, or threw them into the Pasig River. Should my memories of the Philippines fade one by one, the last to leave would be my recollection of the great cholera epidemic which scourged the islands in 1902.

Many radical changes have occurred among the Filipino people along sanitary, educational, and sociological lines since 1898. Local boards of health have been established throughout the towns and villages of the islands, and a campaign of sanitary education introduced which has revolutionized the customs and habits of the people. Artesian wells in many communities have supplanted infected surface wells with perennial amebic dysentery, and the conservancy pail system, the obsolete and insanitary closet arrangements.

Through the beneficence of a public school system the light of American civilization has filtered into the darkest corners of the archipelago, even into the benighted regions of the Igorot and dreaded head hunter. Where one heard the jargon of fifty dialects ten years ago, choice English is now spoken by the rising generation. Illiteracy which claimed 98 per cent. of the population in 1898 has been reduced to less than 50 per cent. among the young people. Athletic sports have been encouraged among both sexes with marked improvement in their physical condition. Tennis and baseball have been accepted as the national games, not only in the Philippines but also in Japan and China, and no one can tell how soon the day may come when the pennant will be wrested from the victorious "Red Sox" by an Oriental team.

Manila, with its modern sewer system, splendid water supply, electric street cars, commodious wharves and harbors, large public buildings, new hospitals, magnificent hotels, beautiful parks and streets, has become the pride of Oriental cities and leads them all in its low death rate. Medical Inspector George A. Lung, U. S. Navy, who passed many years of service in the Far East, claims Manila as one of the healthiest and cleanest cities in the world.

The capital of the archipelago now possesses a great university with colleges of medicine, pharmacy, veterinary medicine, law, engineering, agriculture, forestry, and the liberal arts. A bureau of science has also been established, with well equipped chemical and biological laboratories for the study of diseases affecting both man and animals, as well as for general medical and scientific research. Besides this the government has constructed a modern concrete hospital of 300 beds, which affords ample hospital facilities for employees and families of the civil service, as well as for the general public.

Baguio, on the plains of Benguet, at an altitude of 5,000 feet above the sea, has become the summer capital of the Archipelago, the Simla of the Philippines. There in the cool and refreshing atmosphere of a temperate zone, and under the shade of stately pines, the Executive and Civil Commission conduct their sessions during the hot and sultry season of the year.

Commodious sanitaria for our troops as well as for civil officials and employees have been established in Benguet, and with the commission buildings, army post, hotels, schools, residences, macadam roads, and fine parks, Baguio presents an entirely different appearance when compared with the scattered Igorot village of less than ten years ago. Tele-

graph lines, railroads, and well constructed highways have taken the place of blazed trails and bind in one common brotherhood distant tribes whose very existence was unknown to each other a decade ago.

The acquisition of the Philippine Islands will always be associated with the name of our martyred President William McKinley, and the organization of their model civil government with that of President William Howard Taft, their first civil governor, whose legal and constructive mind is responsible for their splendid laws. Among other prominent Americans who have rendered conspicuous and distinguished service in the upbuilding of the Philippines may be mentioned the Honorable Luke E. Wright, who succeeded Mr. Taft as civil governor, Commissioner Dean C. Worcester, Secretary of Interior and right arm of the Insular Board of Health, the late Colonel E. C. Carter, Doctors Frank A. Meacham and Paul E. Freer, former members of the Board, all of whom died as martyrs at their posts of duty, or from diseases contracted while in that service. The Honorable W. Cameron Forbes, the present Civil Governor, Dr. Victor G. Heiser, who now has charge of the Bureau of Health, and a host of heroes, who sacrificed their lives in behalf of the Filipino people, while courageously fighting against the plague, smallpox, Asiatic cholera, and the insanitary conditions of the islands.

Much has been said and written by opposing parties about the great financial cost and loss of life entailed in the acquisition of the Philippines, the grave strategic and economic mistakes in their retention, and the industrial bondage of the Filipino people in spite of their helpless and universal protest. The Philippine Islands came into our possession as an incident of the recent war with Spain and it became our sacred duty to retain them until they became self-supporting and their peoples qualified to administer the affairs of the new republic, whose star is slowly but surely rising in the Far East. How well we have acquitted ourselves of this national obligation must be left to the unbiased judgment of succeeding generations.

It has been impossible within this brief summary to give more than an outline of the wonderful work achieved in the Philippines during the past ten years through American brains and brawn. No colossal waterway has been constructed over there connecting the two great continents of the world, but a model government has been planted and a new race born, whose progressive and civilizing influences are destined to permeate the darkest corners of the Orient, and make the name of America blessed for centuries to come.

A STUDY OF CHEST AND ABDOMINAL MEASUREMENTS IN RELATION TO BUILD.*

By FANEUIL S. WEISSE, M.D.,

NEW YORK.

MEDICAL DIRECTOR THE MUTUAL LIFE INSURANCE COMPANY OF NEW YORK.

This study is based on the weights and measurements of 3,035 healthy male adults, on whose lives policies were issued by the Mutual Life Insurance Company of New York during the years 1907-1911.

*Read at the twenty-third Annual Meeting of the Association of Life Insurance Medical Directors of America, on October 10, 1912.

These men were examined either at the Home Office of the company or at one of the agencies. In every case the examination was made by one of the home office staff or by one of our referees, all of whom have been trained at the home office.

The weights in every instance were taken by scale, and the measurements made with a steel tape on the bare skin or over one garment—both chest and abdominal measurements being made under the same conditions.

After throwing out all individuals under 25 years, I found the numbers for each inch under 5 feet 3 inches and over 6 feet to be so few that I have not considered them at all in this study.

This left me the group of 3,035 individuals—all over 24 years of age—ranging in height from 5 feet 3 inches to 6 feet inclusive.

I divided each of my largest height groups into three age groups—25 to 29, 30 to 39, and 40 and over—and found that between 10 per cent. below and 15 per cent. above the graded average weights for men as given in Table III—Build—Men in Vol. I of the *Medico-Actuarial Mortality Investigation* gave me the largest and most evenly distributed selection of individuals.

I applied this method of selection to each of my height groups. This gave me ten height groups from 5 feet 3 inches to 6 feet, aggregating 1,869 individuals—all within the same weight limits as regards the average for age. I then obtained an average weight and an average set of measurements—expiration, inspiration, and abdomen—for each height group.

TABLE I.

Average Weights and Measurements For All Ages.

Height	Weight	Expiration	Inspiration	Abdomen	Number
5 ft. 3 in	138	32.43	35.95	31.55	42
5 " 4 "	141	32.68	36.00	31.39	84
5 " 5 "	148	33.16	36.45	32.07	124
5 " 6 "	149	33.17	36.65	32.09	263
5 " 7 "	154	33.43	36.92	32.38	319
5 " 8 "	158	33.49	37.12	32.36	278
5 " 9 "	163	33.93	37.64	32.97	262
5 " 10 "	164	33.84	37.74	32.63	236
5 " 11 "	169	34.10	37.89	33.01	152
6 " 0 "	178	34.92	38.84	33.86	109

For purposes of comparison I have depended principally on the deflated chest measurement as giving the truest index of build. The inflated chest measurement is often increased by muscular effort, while the abdominal measurement depends largely on the posture or the desire of the individual.

After finding the average weight and measurements for my height groups I divided each of them into two classes—one containing all the individuals below, and the other all the individuals above, the average weight. I then obtained an average weight and an average set of measurements for each class for each inch.

The factor of increase or decrease per pound was obtained by dividing the difference in measurement of the two classes by the number of pounds difference in their weights.

Table No. II. shows the averages of the two classes and the factors per pound for each inch.

On comparing these high and low averages it is apparent that each changing pound in weight at a given height causes a definite change in the measurements.

To prove the accuracy of these increases and decreases in measurement per pound weight, I took all the individuals in the three large groups—5 feet

TABLE II.

Height	Weight	Expiration	Factor per Lb.	Inspiration	Factor per Lb.	Abdomen	Factor per Lb.	No.
5 ft. 3 in.	130	31.48	.132	34 91	.129	30.19	.187	26
	149	33.98		37.36		30.75		16
5 ft. 4 in.	133	31.81	.112	35.18	.114	29.89	.195	48
	151	33.83		37.23		33.40		30
5 ft. 5 in.	141	32.28	.133	35.66	.119	30.81	.190	69
	156	34.28		37.44		33.66		55
5 ft. 6 in.	140	31.92	.140	35.48	.131	30.50	.177	139
	159	34.58		37.96		33.87		124
5 ft. 7 in.	144	32.36	.109	35.88	.107	30.74	.168	163
	164	34.54		38.02		34.09		156
5 ft. 8 in.	149	32.57	.104	36.23	.100	30.81	.174	154
	169	34.64		38.22		34.29		124
5 ft. 9 in.	153	32.82	.112	36.52	.114	31.26	.172	144
	175	35.28		39.02		35.05		118
5 ft. 10 in.	154	32.82	.102	36.66	.109	30.91	.173	124
	175	34.97		38.94		34.54		112
5 ft. 11 in.	159	32.90	.120	36.72	.117	31.10	.191	86
	182	35.66		39.41		35.49		66
6 ft. 0 in.	167	33.62	.119	37.60	.113	31.80	.187	63
	193	36.71		40.53		36.67		46

7 inches, 5 feet 8 inches, and 5 feet 9 inches—between 131 pounds and 185 pounds, and found an average set of measurements for each five-pound group, the weight being taken at the mid-point of each group—133, 138, 143, etc. By means of the factor of change in measurements per pound weight I estimated the measurements for each weight. The following table (No. III) shows how closely the average measurements approximate the estimated measurements:

TABLE III.

Weight	EXPIRATION		INSPIRATION		ABDOMEN		Case No.
	Av. Meas.	Est. Meas.	Av. Meas	Est. Meas.	Av. Meas.	Est. Meas.	
			5 Feet 7 Inches				
133	31.14	*31.20*	34.67	*34.75*	28.85	*29.32*	37
138	31.69	*31.69*	35.21	*35.20*	29.69	*29.67*	43
143	32.24	*32.34*	35.75	*35.76*	30.53	*30.39*	46
148	32.79	*32.71*	36.29	*36.47*	31.37	*31.28*	47
153	33.34	*33.36*	36.83	*36.87*	32.21	*32.24*	45
158	33.89	*33.41*	37.37	*36.98*	33.05	*32.77*	43
163	34.44	*34.41*	37.91	*37.84*	33.89	*33.54*	26
168	34.99	*35.05*	38.45	*38.16*	34.73	*34.56*	36
173	35.54	*35.36*	38.99	*39.24*	35.57	*34.49*	21
178	36.09	*36.02*	39.53	*40 13*	36.41	*35 91*	23
183	36.64	*36.78*	40.07	*40.07*	37.25	*36.68*	22
			5 Feet 8 Inches				
133	30.89	*30.96*	34.62	*34.71*	28.03	*28.92*	40
138	31.41	*31.47*	35.12	*35.22*	28.90	*29.37*	37
143	31.93	*32.02*	35.62	*35.75*	29.77	*29.81*	32
148	32.45	*32.44*	36.12	*36.01*	30.64	*30.70*	46
153	32.97	*33.00*	36.62	*36.66*	31.51	*31.36*	49
158	33.49	*33.25*	37.12	*36.85*	32.38	*32.33*	36
163	34.01	*33.69*	37.62	*37.34*	33.25	*32 12*	25
168	34.53	*34.49*	38.12	*38.20*	34.12	*33.57*	34
173	35.05	*35.18*	38.62	*38.97*	34.99	*34.41*	32
178	35.57	*35.76*	39.12	*39.27*	35.86	*35.85*	14
183	36.09	*36.44*	39.62	*40.12*	36.73	*36.56*	18
			5 Feet 9 Inches				
133	30.57	*30.36*	34.22	33.99	27.81	*28.99*	18
138	31.13	*31.04*	34.79	34.65	28.67	*29.13*	27
143	31.69	*32.14*	35.36	35.72	29.53	*30.13*	53
148	32.25	*32.21*	35.93	35.83	30.39	*30.77*	40
153	32.81	*33.23*	36.50	36.69	31.25	*31.33*	54
158	33.37	*33.30*	37.07	37.14	32.11	*32.17*	40
163	33.93	*33.58*	37.64	37.34	32.97	*32.85*	35
168	34.49	*34.70*	38.21	38.34	33.83	*33.57*	21
173	35.05	*35.23*	38.78	39.35	34.69	*34.39*	28
178	35.61	*37.11*	39.35	41.06	35.55	*36.50*	28
183	36.17	*36.42*	39.92	39.91	36.41	*36.84*	20

This shows fairly conclusively that my factor of increase or decrease in measurements is correct—at any rate, in so far as these three height groups are concerned.

The balance of my material—1,166 individuals each weighing less than 10 per cent. below and more than 15 per cent. above the graded average weight for age—I divided into height groups and found an average weight and set of measurements for each class—one under 10 per cent. below and one over 15 per cent. above the average weight.

These classes are used to make a comparison at a higher and a lower point with Tables I and II.

The following table shows the comparison of the estimated and average measurements at four points for each inch—two above and two below. These I will designate as,

Class A—Average of weights under 10 per cent. below average for age.

Class B—Average of weights within 10 per cent. below average for age.

Class C—Average of all weights in classes B and D and average measurements.

Class D—Average of weights within 15 per cent. above average for age.

Class E—Average of weights over 15 per cent. above average for age.

TABLE IV.

Height	Class	Av Wgt.	EXPIRATION		INSPIRATION		ABDOMEN		Case No.
			Estimate	Average	Estimate	Average	Estimate	Average	
Ft. In.									
5 3	A	115	*29.50*	29.55	*32.97*	32.71	*27.38*	27.25	14
	B	130	*31.37*	31.48	*34.82*	34.91	*30.05*	30.19	26
	C	138		32.43		35.85		31.53	42
	D	140	*33.88*	33.98	*37.27*	37.36	*33.01*	33.75	16
	E	167	*36.36*	35.78	*39.68*	38.63	*37.12*	36.13	8
5 4	A	121	*30 47*	30.97	*33.81*	33.68	*27.65*	27.85	26
	B	133	*31.78*	31.81	*35.15*	35.18	*29.83*	29.89	48
	C	141		32.68		36.06		31.39	84
	D	151	*33.80*	33.83	*37.20*	37.23	*33.84*	33.40	36
	E	176	*36 63*	36.77	*40 08*	40.30	*38 25*	38.03	24
5 5	A	123	*29.89*	30 44	*33.52*	33.93	*27.89*	28 38	70
	B	141	*32 25*	32 25	*35.62*	35.66	*30.74*	30.81	69
	C	148		33.16		36.45		32.07	124
	D	156	*34 23*	34.28	*37.40*	37.44	*33.59*	33.66	55
	E	182	*37.74*	37.30	*40.58*	40.76	*38.90*	38.45	38
5 6	A	123	*29.54*	30.39	*33.25*	33.72	*27.49*	27.80	66
	B	140	*31.91*	31.92	*35.07*	35.48	*30.50*	30.50	139
	C	149		33.17		36.65		32.09	263
	D	159	*34.57*	34 58	*37.96*	37.96	*33.86*	33.87	124
	E	188	*38.64*	37 44	*41.76*	40.21	*39 00*	38.28	53
5 7	A	129	*30.72*	30.98	*34 27*	34 48	*28.22*	28 64	90
	B	144	*32.34*	32 36	*35.85*	35 88	*30.70*	30 74	163
	C	154		33 43		36.92		32.38	319
	D	164	*34.52*	34 54	*37.99*	38.02	*34 06*	34 09	156
	E	189	*37.27*	37 25	*40.70*	40.92	*38 29*	38 12	80
5 8	A	132	*30 80*	30.97	*34.53*	34.69	*27.85*	28 76	109
	B	149	*32.55*	32.57	*36 22*	36.23	*30 79*	30.81	154
	C	158		33.49		37.12		32 36	278
	D	169	*34 65*	34.64	*38.22*	38.22	*34 27*	34 29	124
	E	196	*37.45*	37.76	*40 82*	41 49	*38.99*	38 60	95
5 9	A	133	*30.58*	30 53	*34 24*	34.18	*27.82*	28.36	66
	B	153	*32.81*	32.82	*36.50*	36.52	*31.25*	31.26	144
	C	163		33.93		37.64		32.97	262
	D	175	*35.27*	35.28	*39.01*	39.02	*35.03*	35.05	118
	E	206	*38.75*	38.25	*42.55*	42.07	*40.38*	39 75	86
5 10	A	139	*31.29*	31 31	*35.02*	35.05	*28.31*	29 11	82
	B	154	*32 82*	32.82	*36.95*	36.66	*30 90*	30.91	124
	C	164		33.84		37.74		32.63	236
	D	175	*34.96*	34.97	*38.94*	38.94	*34.53*	34.54	112
	E	204	*37.93*	37.65	*42.10*	41.64	*39 56*	38.60	90
5 11	A	142	*30.86*	31.57	*34 75*	35.35	*27.85*	28 94	51
	B	159	*32.90*	32.90	*36.72*	36.72	*31.10*	31.10	86
	C	169		34.10		37.89		33.01	152
	D	182	*35.06*	35.06	*39.41*	39 41	*35.49*	35.49	66
	E	212	*39.26*	38.46	*42 92*	42.72	*41.22*	39.53	52
6 0	A	147	*31 24*	32.13	*35.34*	36.06	*28 07*	29.71	31
	B	167	*33.61*	33.62	*37.60*	37.60	*31.80*	31.80	63
	C	178		34.92		38.84		33 86	109
	D	193	*36 71*	36.71	*40.64*	40.53	*36.67*	36.67	46
	E	220	*39 92*	38.86	*43.58*	42.73	*41.72*	39 63	35

The next and final table gives the average weights and measurements for each inch from which to estimate measurements at any given weight for the same height and the factors per pound to use for finding such measurements.

Take an individual 5 ft. 9 in. tall weighing 148 pounds as an example. The average is 163 pounds—expiration 33.93 inches—factor 112.

TABLE V.

Average Weights and Measurements and Factor of Change Per Pound for all Ages.

Height		Average Weight	Expiration	Factor per Lb.	Inspiration	Factor per Lb.	Abdomen	Factor per Lb.	No.
Ft.	In.			In.		In.		In.	
5	3	138	32.43	.132	35.85	.129	31.55	.187	42
5	4	141	32.68	.112	36.06	.114	31.39	.195	84
5	5	148	33.16	.133	36.45	.119	32.07	.190	124
5	6	149	33.17	.140	36.65	.131	32.09	.177	263
5	7	154	33.43	.109	36.92	.107	32.38	.168	319
5	8	158	33.49	.104	37.12	.100	32.36	.174	278
5	9	163	33.93	.112	37.64	.114	32.97	.172	262
5	10	164	33.84	.102	37.74	.109	32.63	.173	236
5	11	169	34.10	.120	37.89	.117	33.01	.191	152
6	0	178	34.92	.119	38.84	.113	33.86	.187	109

163 pounds — 148 pounds = 15 pounds.

15 × .112 = 1.680 inches.

33.93 inches — 1.68 inches = 32.25 inches.

The inspiration and abdomen measurements can be obtained in the same manner—using, of course, the proper factor in each case.

By using this table one can determine with reasonable accuracy what the measurements should be for a man over 24 years of age of any weight, whose height falls within the limits of the table.

None of the figures in the preceding tables—or in the work done in preparing this article—have been altered or graded in any way.

APPENDICITIS IN INFANCY AND EARLY CHILDHOOD.

By CHARLES GREENE CUMSTON, M.D.,

BOSTON, MASS.

On account of the relative infrequency of cases of appendicitis diagnosed in infancy and young children the report of the following cases may not be out of place:

Case I.—Male, twelve weeks old. Normal birth. Breast-fed, healthy infant. Five days before I saw the patient he developed a severe diarrhea, the stools being very offensive and contained much mucus. Temperature 36.5° C. Some intestinal distention. Various changes in diet were tried by the family physician without any result; the child vomited, the pulse reached 140 and over, but the temperature remained subnormal. On the fifth day after the commencement of the disturbances, the doctor thought he could detect a distinct mass in the right iliac fossa, and the writer was asked to see the child. Examination (May 3, 1902) revealed a very distended abdomen, by percussion, dullness over the right iliac fossa, the rest of the abdomen tympanitic. By palpation a mass was thought to be detected in the cecal region. Heart and lungs normal. Pulse 147, temperature 37.1° C. The diagnosis of probable appendicitis was made and operation performed at once. Incision in the right semilunar line. On opening the peritoneum a little free fluid escaped. The cecum, very greatly distended and injected, bulged into the incision. It was adherent by neoformed thin adhesions to the iliac fossa, but by carefully working these were broken down and the appendix delivered. This was found bent upon itself at the middle, about as large as a lead pencil, and its peritoneum markedly injected. It was bound to the cecum by numerous adhesions After some difficulty it was freed and removed. The incision was closed without drainage. The baby made an uneventful recovery and is at present a very fine boy. Examination of the removed appendix presented several points of interest. On opening down to the acute angle formed by the bend, the mucosa was swollen, grayish-red in color, and covered with numerous gray-colored ulcerations. The lower half of the organ after it had been unbent was found distended with a small amount of thin yellow feces. The mucosa was dark purple and presented several ulcerations, one of which had almost perforated. Total length of appendix, 5.5 centimeters.

Case II.—Female, aged 3 years, 20 months. Seen with Drs. Schofield and Sylvester of Wellesley, Mass., August 15, 1912. Patient had been ill with diarrhea, vomiting and right-sided abdominal pain for several days. Keeps right leg flexed. Temperature remained around normal, pulse varying from 120 to 140; mass formed in right iliac fossa. When the writer saw the child on August 15 in consultation, she was restless and complained of pain when pressure was made over the cecal region. Facial expression good, pulse 120, temperature normal. Under ether a distinctly localized hard mass could be made out in the outer portion of the right iliac fossa. A diagnosis of retrocecal abscess was made. When the peritoneal cavity was opened it was found perfectly free from infection. The cecum was bound down by a mass of rather tough adhesions and, after freeing these carefully to obtain sufficient space to open into the retrocecal abscess, this was done. About 30 cubic centimeters of thick, stinking yellow pus escaped and a large drain was inserted back of the cecum in the abscess cavity. Recovery uneventful, the patient being kept for the first six days in Fowler's position, after which drain was removed.

Case III.—Male, 21 months old, always had been in good health since birth. Bottle-fed. Had been more or less constipated for the past three months. For several days before seeing the child he had been vomiting off and on, was very restless and bowels only moved by suppositories of soap. No blood or mucus in stools, abdomen became distended, and colic was severe. Examination (July 17, 1907): Well-developed infant, pulse 130, temperature 37.9° C. in axilla. Abdomen distended and tympanitic; no area of dullness. Heart and lungs normal. Vomiting continuous, bilious nature. no stools for twenty-four hours. On account of the very serious condition, which pointed to some intraabdominal lesion, the nature of which was doubtful, operation was undertaken at once. The abdomen was opened in the right semilunar line, giving issue to a large amount of thin serum containing flakes of lymph. The distended intestine was greatly injected and there was evidence of high grade general peritonitis. The cecum was delivered and a gangrenous appendix found. There were practically no adhesions and the organ was rapidly removed. Drainage. The child rallied and lived about eight hours after the operation. The appendix measured 4.3 centimeters. It was dark purple, but perforation had not taken place. The mucosa was disorganized and the walls were so thin in places that only the peritoneum prevented the contents from escaping into the peritoneal cavity.

In infants, as with adults, the appendix varies in length. Ribbert gives 3.4 cm. as the average length, while in the newly born Tojts found an average of 5 cm. and in adults 10 cm. Both these figures agree approximately, so that one may conclude that the processus vermiformis is very much longer in relation to the entire intestinal tract in young infants

than in the adult. The very great richness in follicles is also a characteristic of the appendix in young subjects. They are distinctly developed in the infant and increase until about the twentieth year of life, after which they begin to undergo atrophy. In spite of the relatively large size of the appendix in infants and young children fecal concretions are hardly ever found in the lumen of the organ. The strong muscular structures expel the contents, which, on account of the nature of the diet in early life, is fluid. Consequently, conditions for the formation of fecal concretions are wanting, at least until the age of four or five years. I know of only one instance, that reported by Schüle, in a milk-fed child where a fecal concretion was found in the appendix at autopsy. The content is mucus, undigested thin liquid ingesta, or parasitic ovi. Post-mortem examination has shown that there is no general rule that can be applied to the position occupied by the appendix in infants. In some few cases it has been found dipping directly down into the pelvis, occasionally it lay directly on the cecum in the right iliac fossa, or it may point upwards. In one case its tip reached the right lobe of the liver. Therefore, it is evident that there must exist unknown developmental conditions influencing the position of this rudimentary organ. It has been pointed out by Matterstock that in children the appendix is often placed in some abnormal position or may present kinks or bending.

That inflammation of the appendix cannot be so infrequent in early life as is generally assumed, must be evident to all if the large number of follicles be taken into consideration. In all inflammatory processes of the intestine, the lymphatic system becomes involved at first, namely the solitary follicles and Peyer's patches. Now, since the appendix is in reality merely a large Peyer's patch, it seems only logical that it should become involved early in inflammatory lesions of the gut, and when one considers the readiness with which the intestinal track tends to react by an inflammatory process when there is a relatively slight qualitative and quantitative change in diet, it would seem that many opportunities must be offered for the lymphatic system of the appendix to become involved. Attention has been directed to the anatomical similarity between the tonsils and appendix, and with evident good reason. Both organs are composed of lymphatic tissue grouped around a cavity rich in bacteria; both share in the inflammatory processes of the structures with which they are related.

In considering the type of inflammatory changes in the appendix, the simplest for our purpose, although not perfect, is to divide the process into three large groups as follows: (1) appendicitis simplex; (2) perforative appendicitis, and (3) appendicitis gangrænosa. Of these, the second group must be of great infrequency in infants and young children if perforation is due to a fecal concretion, while appendicitis simplex is rather more common, with swollen, congested mucosa, and superficial or deep ulcerations. From cases reported in the literature, it would seem that the gangrenous type is the most frequent in infants and young children. There is a rapidly progressing partial or total necrosis of the organ. It is usually due to thrombosis of the artery of the appendix by direct extension of the inflammatory process in the intestine, thus cutting off the entire nutritive supply to the organ. On the other hand, the bacteria penetrating into the mucosa and muscularis may produce rapid necrosis of the tissue elements, the occurrence of perforation depending upon the virulence of the organism present and to some extent the position of the appendix in which gangrene occurs. In infants and very young children inflammatory processes in the appendix tend to progress rapidly, that is to say, necrosis of the mucosa and muscularis occurs promptly, so that the bacteria reach the serosa quickly before protecting adhesions have had time to be thrown off. For this reason it was found that in 50 per cent. of cases of appendicitis in infants and young children extensive peritonitis developed, this being based on the combined statistics of Schüle, Rotter, Lenander, and Sonnenburg.

The toxemic form of appendicitis is a frequent cause of death in infants. Here there is no peritoneal reaction, or, if there is any, it is very mild. Death occurs rapidly from absorption of the bacterial toxins, the body being actually flooded with the poisons. I am led to assume that many instances of death from enteritis are in reality due to an undiscovered appendicitis giving rise to a rapidly developing intense bacterial toxemia with little or no evidence of intraabdominal trouble. Then a thrombophlebitis of the vessels of the mucosa takes place, the bacteria become attached to the thrombi, liquefy them and thus enter into the general circulation, producing metastatic foci in distant organs, such as the lung, kidney, or myocardium.

I feel so strongly on the subject that I should take it for granted that in all likelihood the appendix is the seat of inflammation in infants and young children who are constantly having intestinal upsets. The process may not cause any alarming symptoms at the time, but undoubtedly paves the way for a future marked attack when the child is older. How frequently does one find, when operating on older children, strictures of the lumen of the organ resulting undoubtedly from former catarrhal ulceration or from contraction of the interstitial tissue caused by a former inflammatory process, resulting in a bend of the appendix. Likewise, the presence of old, thick adhesions can only be accounted for by some previous inflammatory process. As far back as 1867, Willard Parker, in a paper published in the MEDICAL RECORD, stated that perityphlitic abscesses were far less common in children than in adults and that necrosis with rapid perforation was frequent in the former.

In young children from three to five years of age the diagnosis can be made in many cases from abdominal pain, colic, particularly referred to the ileocecal region, occasionally anorexia and vomiting, with temporary constipation or diarrhea. Unfortunately, the real cause of these symptoms is overlooked and the case put down as intestinal indigestion, or what not, and then later in life the subject develops an unmistakable attack of appendicitis.

Considering more in detail the symptomatology of appendicitis in early life, close attention should be paid to the digestive tract. It is true that the symptoms point rather to gastric catarrh, which, in point of fact, may very probably be the introduction to future trouble in the appendix. Vomiting, which is so frequently an early symptom, cannot be considered as of any importance, as it is so common in digestive disturbances in infancy and early childhood. Cyclical vomiting is important, and, as I have pointed out,* is frequently a symptom of chronic

*"The Relation of Cyclical Vomiting in Children to Appendicitis." *American Journal of Obstetrics and Diseases of Women and Children*, Vol. LIX, 1909.

appendicitis. The condition of the stools also varies greatly, all degrees between marked constipation and severe diarrhea have been noted, but it would appear from recorded cases that constipation is more frequent as a real symptom of *appendicitis per se* in children under two years of age.

Pain in the right iliac fossa, such a valuable symptom in adults, is frequently absent or cannot be located on account of the inability of the subject to express this sensation. Undoubtedly, in some young intelligent children the pain on palpation in the right iliac fossa may be made out, but when this cannot be done it is no reason for excluding the diagnosis of appendix trouble. In cases of catarrhal disturbances of the intestinal tract in infants, tenderness can oftentimes be made out in the cecal region by palpation, undoubtedly due to an inflamed appendix participating in the general intestinal process. As localized abscess formation is less frequent than a generalized peritonitis a distinct tumor is not so often found, but it is always suspicious if abdominal distention with abdominal walls more tense on the right side can be made out.

A digital rectal examination may be of use where appendicitis is suspected, when vomiting and diarrhea are marked. A palpable resistance may sometimes be made out in the right pelvis, or, if pus has formed, a tumor surrounding the rectum is discovered. Too much reliance must not be placed on rectal examination as it is most often negative, but should not be neglected in doubtful cases. The temperature curve is by no means reliable because in even the worst septic cases it may remain around the normal. However, if an abscess has formed the chances are that the chart will show septic absorption going on. Evidence of peritoneal involvement is given by a rapid pulse with a low temperature.

As already pointed out, most cases of appendicitis in infants are not diagnosed. Vomiting, constipation, or mild diarrhea, mucus in the stools, restlessness as a result of colicky pains without definite localization are usually so prominent that appendicitis is not thought of and a diagnosis of enteritis is made; vomiting occurs several times, while the stools which at first were loose become normal by proper feeding and medication. But suddenly they become liquid again, the infant rapidly sinks and finally dies without offering a single symptom pointing to the appendix. Had the right iliac fossa been carefully palpated in these cases, some slight resistance or pain might have been elicited which would have led the physician to suspect the true condition of affairs.

The presence of bacteria is of utmost importance in the development of appendicitis. These are found within the first twenty-four hours after birth in the intestinal tract of healthy infants, but when the epithelium of the intestine is normal and lymphatic system active they do not develop their pathological properties. Not until a catarrhal process has caused desquamation of the epithelium do they react on the mucosa and set up deep seated changes. Macaigne* and the writer† were among the first to show that cultures of the *Bacterium coli* obtained from dejections of patients suffering from intestinal disturbances, are much more virulent than those grown from dejections in healthy subjects. The highly virulent bacteria, rendered so by intestinal catarrh, set up pathological processes in those places in the intestine especially predisposed to inflammation, particularly the appendix. This explains why the appendix is so frequently involved in infantile diarrheas. Undoubtedly the streptococcus is the most important because in the milder cases it produces a serous catarrhal process in the small intestine; in severer cases an inflammatory process localized in the large intestine results. The cocci enter the blood stream and may be seen in clusters in the intestinal wall, lung, etc. The *Bacillus coli* is the commonest organism found in appendicitis but not infrequently the streptococcus is also present, causing a mixed infection. As already mentioned, the presence of intestinal bacteria alone is not capable of producing appendicitis and other causative factors must arise. The most important of these in infancy is improper feeding resulting in intestinal disturbances and coprostasis.

The extremely poor prognosis of appendicitis in infants and young children is due to the fact that the true nature of the case is recognized either not at all or too late. The case not being understood treatment is administered which causes the process to rapidly progress. It is hardly necessary to observe that in the gangrenous type there would be a very rapid extension of the inflammation to the serosa, as is well illustrated by the third case reported in this paper.

In concluding let me repeat that in all cases of gastrointestinal disease in infants and young children, as well as in other abdominal conditions whose nature is not clear, the physician should turn his attention to the ileocecal region. If this is done undoubtedly a diseased appendix will be diagnosed and by early operation the baby may be saved.

871 Beacon Street.

*Macaigne: Thèse, Paris, 1892.
†Cumston: Thèse, Geneva, 1893.

THE AFTER TREATMENT OF SYPHILIS.

By EDGAR G. BALLENGER, M.D.,
AND
OMAR F. ELDER, M.D.,
ATLANTA, GA.

As the absence of clinical symptoms does not afford evidence that the syphilitic is cured it becomes necessary for us to utilize all available methods in determining if latent infection is still present and to administer further antisyphilitic remedies before recurrences develop. It is the consensus of opinion among syphilologists that in the past very few patients have been cured absolutely. This view is substantiated by the fact that a very large number of syphilitics develop late lesions or functional diseases that respond to antisyphilitic measures while many also develop parasyphilitic affections. Many, too, probably remain free from evidences of disease, yet may harbor latent foci of spirochetes which only develop when subjected to trauma or when the resistance of the patient is lowered by intercurrent disease or other conditions. Another fact in the support of the view that in the past many patients have remained uncured was the scarcity of reinfections.

If we are to obtain creditable results in the future it must come through a careful study of clinical symptoms and in addition we must secure and maintain a permanently negative Wassermann reaction and a negative luetin test. Careful observers now state that it is impossible to administer satisfactory antisyphilitic treatment without using the Wassermann test, and from our experience during the past two years compared with our ex-

perience antedating this period we are becoming more and more convinced of the correctness of this view.

The recent advances in the treatment of this disease have stimulated active work in answer to a constant question and that question is, what shall we do with the patient who is apparently well? The time test is too slow, and may result in the development of serious affections unless we anticipate and prevent them. The syphilologist must consider the actual administration of antisyphilitic remedies as only part of his obligation—certainly not more than one-half—the other and equally important part being to utilize all approved methods to determine when treatment may be discontinued. One thing has become more and more apparent and that is that hard and fixed rules cannot be made as to the amount of treatment required to cure patients. Each case should be studied individually, both in regulating the size of the dose of salvarsan or neosalvarsan, the frequency of its repetition, the advisability of supplementary remedies, as mercury and potassium iodide, and after all clinical manifestations have disappeared, the application of tests to show the presence of latent infection if such exists.

The potency of neosalvarsan and the mildness of the systematic reaction open the way to a very thorough course of treatment which, if properly administered, disturbs the patient very slightly. It is upon the repetition of the dose of salvarsan or neosalvarsan that permanent results depend. The repeated doses should follow in such a manner as to continue the improvement and then to clinch the cure. We can easily conceive of an indefinite number of treatments resulting in failure, provided a recurrence is allowed to supervene before each subsequent treatment is administered. It is to prevent such occurrences that judgment should be exercised in the administration, care in the spacing of the treatments and careful tests made to determine the probable completeness of the cure before dismissing the patient to return only occasionally until sufficient time has elapsed to prove that a recurrence is unlikely.

We have administered 570 injections of salvarsan and 475 injections of neosalvarsan without a death and with but one neurorecurrence, which was clearly due to insufficient medication. This freedom from ill effects we attribute to the repetition of the remedy, and to the fact that we have given nearly all of it intravenously and started with small doses when in doubt as to the physical condition of the patients. Always, too, the patients were urged to drink freely of water both before and after the injections so as to dilute well the medicine during its elimination by the kidneys.

As regards the administration of mercury simultaneously with salvarsan and neosalvarsan recent reports seem to indicate its advisability, especially if there is reason to fear neurorecurrences, and when much induration exists in the lesions. A disadvantage in its continuation is its masking the symptoms and thus preventing more active dosing with salvarsan and neosalvarsan. Where the patient can receive careful observation, controlled by luetin and Wassermann tests, and appears to have had an adequate course of the latter remedies we have omitted supplementary treatment until its indication became apparent. If the patient cannot be watched doubt must exist and it would be well, therefore, to administer mercury and iodides until tests show the disease to be probably cured.

The Wassermann Reaction.—Gennerich of Keil and Milian of Paris simultaneously reached a conclusion of far reaching importance in their observation that the Wassermann reaction became more positive soon after injections of salvarsan. The practical application of this principle in apparently cured or latent conditions is probably the greatest advance in the scientific management of syphilis since the discovery of salvarsan, unless it be the cultivation of the *Spirochæta pallida* by Noguchi. Undoubtedly this so-called provocative injection of salvarsan or neosalvarsan greatly enhances the value of the Wassermann in that it makes it much more delicate and thus renders it useful at the very time we need it most, that is, in the obscure and latent conditions. It stirs up, as it were, the spirochetes and brings their products into the circulation. In from eighteen to thirty-six hours after the injection of neosalvarsan the specimen of blood should be taken as then, as a rule, it seems to contain the largest amount of "reagin," the substance which is detected by the Wassermann test. McDonagh of London has confirmed these observations and is convinced of their importance. If the patient is nearly cured the strength of the reaction diminishes and within ten days or two weeks it may become negative. Treatment should be continued as long as it remains positive when the provocative test is used. Such a test should also be made about six months and again one year after the patient appears to be cured. Since using the socalled provocative Wassermann tests we have been able to discover latent infections with much greater accuracy than when the usual method was followed, as will be seen from a few brief clinical reports to be given.

Kaplan, in 1910, called attention to the fact that ox-bile added to negative blood serum would render it positive. As an injection of salvarsan or neosalvarsan may at times cause jaundice we should regard a positive provocative Wassermann under such circumstances of doubtful significance and make other tests when the urine is free from bile. Craig has also observed that immoderate drinking of alcohol would render a positive Wassermann temporarily negative. It is also generally admitted that leprosy, yaws, malaria, scarlet fever, and scleroderma will give positive or pseudo-positive reactions.

The Luetin Test.—From a pure culture of the *Treponema pallidum*, Noguchi has prepared a substance (like tuberculin) which is specific in the detection of the condition of allergy or hypersensitiveness produced by occasional systemic invasion of syphilitic products. Through the kindness of Dr. Noguchi we were furnished a supply of luetin several months ago and are much pleased with the results so far obtained in 75 tests with it. It seems of special value when latent foci exist and especially if it is made about ten days after a provocative or sensitizing injection of neosalvarsan has been administered. It seems more delicate at times than the Wassermann reaction, and we use the tests together hoping thus to eliminate sources of error and to detect very slight infection.

Technique.—The bottles of luetin and the control are first well shaken and the desired amount is taken from the bottle with sterile tuberculin syringe. It is then diluted with an equal quantity of sterile physiologic salt solution; of this .07 c.c. is injected into the skin of the upper arm with a fine needle. It should be carefully placed just beneath the epidermis. With a separate syringe a similar injection

of the control is made in the other arm with another syringe; the same amount and dilution with salt solution being used. The luetin and control should be kept in an ice chest when not being used. The result noted within the first twenty-four hours should be disregarded and observations continued for three or four weeks. The most reliable reactions usually develop five to eight days after the injection. The control preparation is identical with luetin except it does not contain the *Treponema pallidum*. The reaction is regarded positive if the site of the injection of luetin becomes red and hard. A papule about the size of a split pea or larger develops and may be surrounded by an area of redness three or four millimeters in diameter. The pain is slight and there appears to be very little if any systemic reaction. The control usually disappears after two or three days, occasionally it may increase in size and remain the same as the luetin. This seems more likely to occur in untreated syphilitics whose resistance is lowered and in whom any slight injury may be followed by more than the ordinary reaction. Where both remain the same and otherwise seem positive, the condition should be considered as suspicious and the test should be repeated ten days after a provocative injection of neosalvarsan. The luetin test is of chief value in more or less latent conditions when the systemic invasion of syphilitic products is occasional and not constant, as under circumstances the state of allergy or hypersensitiveness develops.

We feel that no patient should be given permission to marry or if married to bear children until these tests are found negative six months and a year after what has seemed an adequate course of treatment.

A few instances will be reported to show wherein the above methods have been of value in deciding whether to continue or discontinue medication.

Case I.—Uncertain history of lues twenty-five years ago, hemiplegia seven years ago, not feeling well recently, nocturnal headache. Wassermann negative, luetin positive. Provocative injection of 0.4 gram neosalvarsan was followed by cessation of headache and improvement in the patient's general health. Blood taken twenty-four hours after the injection was positive (++).

Case II.—Age twenty-five, lues four years ago, mercury and potassium iodide for two years, followed by three injections of salvarsan during past year. Has been clinically free from syphilis for two years, several negative Wassermann reactions during this period. Wassermann now negative and luetin positive (+). Provocation Wassermann positive (++).

Case III.—Lues six years ago, several years of mercury and potassium iodide. Three injectons of salvarsan during past year. Clinically cured and appears in splendid health, Wassermann negative, luetin positive (+). Provocative injection of 0.55 of a gram of neosalvarsan, Wassermann then becomes strongly positive (++++).

Case IV.—Lues nine months ago, five injections of neosalvarsan, no signs of disease except slight glandular enlargement. Wassermann negative. Luetin positive (++). Provocative Wassermann (+).

Case V.—Patient clinically cured, Wassermann positive (+), luetin positive (++), provocative Wassermann positive (+++).

Case VI.—No signs of lues which was contracted ten years ago and has been actively treated with mercury, potassium iodide and salvarsan. Wassermann positive (+), luetin positive (+++); provocative Wassermann positive (++++).

Other more or less similar observations have been made but as a rule the Wassermann and luetin test have been in accord where there was slight, though evident luetic manifestations. About 55 tests have been negative by all methods and we feel that at present we are safe in assuming that the patients incur no risk in waiting until further tests are made in six months and one year or later.

1013-14-15 Atlanta National Bank Building.

LE CHARLATANISME DE L'EXACTITUDE.

By W. B. KONKLE, M.D.,

MONTOURSVILLE, PA.

"Charlatan as much as you please, but where is there not charlatanism?" So, says Saint Beuve, exclaimed Napoleon when he heard somebody spoken of as a charlatan. In truth, there is charlatanry and charlatanry. Over against each other appear the crude, vulgar sort characterizing the uncultured mountebank in the market place, and the refined, casuistic kind that in the person of some polished Cagliostro with its sorcery befogs and befools courts and solons. Then there is the unconscious, well-meaning charlatanry of teeming dogmas and systems and isms which is mere error, the while there drives and thrives the deliberate, premeditated charlatanry of voracious imposture, the vampire that fattens on human blood.

And all these many and many-phased charlatanries have very freely domiciled themselves in the domain of medicine. But what is this strange thing about which speaks the erudite and brilliant Bouchut?—*"le charlatanisme de l'exactitude!"* Yes, the astute Frenchman has unmasked even such a species. He has been making a critique of the so-called iatro-mechanical and iatro-mathematical doctrine originated by Sanctorius, elaborated and specialized by Descartes and practically established by Borelli. After according to the theory full credit as containing a true idea as being a valuable means of research and method of experimentation, and as having *une raison d'être* in the body structures, he then stoutly protests that "it is gravely wrong in that it does not take enough into account organic and vital properties." He further insists that "in order to create an exact and mathematical medicine it does not suffice to estimate or measure forces, to calculate them in figures, or to apply the laws of mechanics to the functions of organs and to the manifestations of sickness; this is often but an illusion; and for many men it is only a means of self-aggrandizement—it is the charlatanry of exactness."

The wont or lot of medicine has been, like a child, to be, using St. Paul's forceful metaphor, "tossed to and fro, and carried about with every wind of doctrine, by the sleight of men, and cunning craftiness." Iatro-mechanicalism is not alone in embodying some principle good and helpful in itself and within proper limits, but misleading and pernicious when vigorously and rigorously pushed to extremes beyond its sphere. So, too, iatro-chemicalism subjugated and enslaved medical practice, changing itself from a scientific instrument into a delusive wand of magic. From Paris was hurled at Sylvius the charge that his method had cost more lives than the thirty-years'

war. *Le charlatanisme de l'exactitude* is again strikingly evident in the doctrine of *"strictum"* and *"laxum"* in all its eventful course and in all its various forms. Given birth by Asclepiades of Prusa, evolved and exploited by Themison and Thessalus of Tralles, coming down to modern times in the garb of the "spasm" and "atony" of Hoffmann and Cullen, the "sthenia" and "asthenia" of Brown, and the "irritability" of Broussais, from first to last it stands as a mournful monument of the ill-advised and futile attempt to find in disease a general, constant and exact unity. There has been a tendency of the school in question to deny the tenet which constitutes the base and soul of the Hippocratic system, and which the great Master so strongly and so grandly maintained—the tenet, namely, of the healing power of nature. Asclepiades bluntly and flatly averred that the physician alone cures. Brown flung out the same black banner under whose sinister folds he won a fame that rapidly dimmed and darkened into half-disfame.

Thus pinning their faith to a single and invariable classification, and holding that nothing goes without the doctor, the votaries of "strictum" and "laxum" dosed enormously and treated heroically. With some it was more "strictum" and less "laxum," with others more "laxum" and less "strictum." Brown and the distillers were close confederates on account of his predilection for stimulation; while during the Broussais régime in one year alone 41,500,000 leeches were imported into France under the spell of the mania for depletion. And the whole scheme was as simple as it was exact—so simple, indeed, that its propogandists might well have published that "the wayfaring men, though fools, shall not err therein." Le Sage's ever-diverting description of how Dr. Sangrado made a physician out of Gil Blas *sur-le-champ*, by fiat as it were, is not such exaggerated imaginative farce as on the surface appears. As a matter of actual medical history, Thessalus boldly boasted that with him six months were long enough for the inculcation of correct and adequate principles of medicine. His numerous disciples Galen contemptuously dubbed, "the asses of Thessalus."

Medicine by reason of its very nature can not be a pure or an exact science. Sprengel holds that the physicians both of ancient and recent times who have sought to so dignify it have gravely misconceived their art. Art preeminently it is, and will ever remain. Sir Dyce Duckworth insists that the great physician is a great artist; and that for one to demand mathematical accuracy in therapeutics is to show one's self devoid of *mens medica*. "The province of the clinic," says Renouard, "is the doctor's battle field, the theater where he unfolds not only all the resources of his art, but more those of his genius, as well as the qualities of his soul."

In his *"Notre-Dame de Paris"* Victor Hugo depicts Archdeacon Claude Frollo as having inscribed on the wall of his cell this legend, purporting to be quoted from Jamblichus, a Neo-Platonist of the fourth century—*"La médecine est fille des songes."* How far true it is that medicine is the daughter of dreams will be apprehended as one surveys the immemorial bent of medicine toward infatuation for, and subserviency to, speculative philosophy. Celsus affirmed that "medicine is a conjectural art." Modifying the idea of Celsus, Cabanis declared that "medicine is a conjectural science." Said Baglivi, "To deify and unduly extol the Moderns is becoming to no reasonable man. Medicine is not a production of human reason, but a daughter of time, originating in long experience." Yet to whatsoever other maternity or paternity it may be referred, medicine at any rate is *not* the daughter of exact science. There are many exact things in it, and this is increasingly true; but still it is not, can not be, all exact. More and more, exactneess marks its procedures; but the ground on which it operates is shifting and unstable. It was the highest wisdom which led Ali Abbas to demand that the physician control the findings and leadings of book knowledge with bedside observation. Without the application of a series of proofs and checks the most exact method may go wrong, and make for us a monster in the moon out of an insect on the lense of our telescope, as happened to Sir Paul Neal, according to the respective satires of Butler and La Fontaine.

As indicated, the constantly and permanently debarring factor in any attempt to pass from rational art to exact science in the practice of medicine is found in the infinite variability of the material operated upon. We have to do with persons, and persons are so many differing and undetermined quantities. All that he came from, all that he is, all that he is related to, forms the complex whole of the person. And how complex! And how endlessly manifold the combination of the component elements! And from this it follows that, outside of differences of type and of malignity in diseases themselves, which add yet another element of variation, every case of sickness has its own individual qualities and requirements. Says Renouard again, "It is unheard of that a practitioner should have met during his life two morbid cases absolutely identical." Condillac cautions us against imagining that there are species and genera in nature because there are species and genera in our manner of conceiving of things. Then, besides, the same thing and the same person are subject to mutation. Old Racan utters the plaint—

"Rien au monde dure
Qu'un éternel changement."

And Börne, echoing the sentiment, writes, *"Nichts ist dauernd als der Weschsel."* So that even with exact methods and instruments of precision exactness of result is precluded in medical practice.

Many of the practical errors attributable to this complication of conditions medicine might avoid, might spare itself the discredit of many a vagary and absurdity, if only the history of the healing art were more closely studied with reference to the commission of such *faux pas* in the past. Certainly more thorough historical study "wad frae monie a blunder free us, and foolish notion." Cicero calls history "the witness of time, the light of truth, the life of memory, the high-priestess of life, the messenger of antiquity." But in spite of, or in ignorance of, the lessons of the past we go on making the same old mistakes—the same, though committed in a new way. *Le charlatanisme de l'exactitude* in particular is especially in evidence to-day. Says a shrewd, clever writer anonomously, "It seems as if the trend of modern pathology was toward the study of disease as a practically unvarying entity and the patient himself becoming more and more a negligible factor." This is but one departure of a movement quite common. Is it not true that in our craze for exactness we have considerably lost our heads?—as lost theirs the Vienna school of the days of Skoda concerning diagnosis.

There is much unintentional charlatanry of exactitude about the purification and refinement and standardization and accuracy of dosage of drugs. Care in this matter is well enough to any extent and essential to a certain extent. But the dose and the effect of medicines must be largely worked out for the person in question. Several of our best medicaments are among those various and varied products indifferently compounded by nature herself. And there was something challenging admiration and respect in the masterful manner of the physician of yore who mentally estimated the features and indications of his case and administered drugs to his patient in doses measured by the combined appliances of penknife and brains.

Inadvertently a large amount of hocus-pocus is palmed off regarding the clinical thermometer. In point of fact, it is the most useful device employed in the practice of medicine. It is, indeed, simply indispensable—it is the right arm of the present-day doctor. But its renderings should not be construed too rigidly—some latitude should be allowed to the meaning of its markings. What can tenths of a degree import where so many elements of disturbance and variation influence its testimony? Why haggle and carp about fine shades as to its index when its evidence must, at any rate, be interpreted from the shifting standpoint of disease caprice, wide age-range and personal idiosyncrasy?

"A novelty useful enough for scientific purposes, but readily dispensed with in practical life," is what Baas says of Marey's sphygmograph. One would hesitate to speak in the same way of the up-to-date instruments for the investigation of the pulse. Frankly, these must have a definite and especial value. But they have their decided limitations and imperfections. And they are subject to the same factors of modification as is the thermometer. In no event can they in practice take the place of the trained finger on the pulse. The touch of the intelligent, skilled physician is worth more than all they can possibly tell. What they are exceedingly liable to do is to promote *le charlatanisme de l'exactitude*. Let the palpation of the pulse receive renewed attention and be granted greater distinction. If Galen in ancient, and the Chinese in later, times did make too much of it, we of the present hour make altogether too little of it.

The examples cited in illustration of charlatanry of exactness are meant as a representative, rather than an exhaustive list. From the whole discussion some morals may be drawn. In frenzied quest of accuracy let there not occur neglect of what is practically important and advantageous. A dire and doleful epitaph for the tomb-stone of a patient would be, He died of an effort upon the part of his doctor to make applied medicine rigorously scientific. Practice must be ever below the ideal. When we look too far we overlook the near. Says our Shakespeare, "Striving to better, oft we mar what's well." Voltaire frames the thought thus—"*Le mieux est l'ennemi du bien.*" And Tennyson expresses the spirit of the sentiment, if not the letter, in these lines:

"Hold thou the good; define it well:
For fear divine Philosophy
Should push beyond her mark, and be
Procuress to the Lords of Hell."

On twin thrones higher even than the throne of science must we set judgment and experience. Science below anything else? Yes, in practice. From Baglivi came the maxim, "He who diagnosticates well cures well." An excellent rule, truly. And, yet, Skoda became so engrossingly devoted to exactness of diagnosis that there was bred in him a feeling toward therapeutics akin to contempt. When asked at a consultation about the medicine proper to the case he replied nonchalantly, "*Ach, das ist ja alles eins!*"

Judgment and experience. Judgment without experience is like talent without training. Judgment strengthens and ripens as experience broadens. On the other hand, experience without judgment is a child choosing coins—size and shine win. Remarks Bouchut, "One ought always distrust the experience of ignoramuses and of fools." And Morgagni insisted that "observations should be weighed, not counted."

No; pure, exact science is not the ranking characteristic of the competent and effective physician. Hufeland maintained that "successful treatment requires only one-third science and two-thirds *savoir faire*." Cold, mechanical, routine method is essential in laboratory investigation, and, also, in the practice of a specialty. But when in general it is a question of restoration to health from ordinary sickness in the particular and individual case of Monsieur A——, or Fräulein B——, or Baby C—— then good sense, sound judgment, enlightened experience, *l'empirisme rationnel ou philosophique* of Renouard, these then are trump forever.

PARALYSIS OF THE RIGHT RECURRENT LARYNGEAL NERVE FROM ACCIDENTAL TRAUMA.*

By D. BRYSON DELAVAN, M.D.,

NEW YORK.

Paralysis of the recurrent laryngeal nerve due to various kinds of injuries of the neck is not very uncommon. Thus, in the course of operations upon the thyroid gland and of other surgical procedures in its vicinity the recurrent has more than once been so injured that its function has been permanently destroyed. From whatever cause such an accident has taken place, however, the victim has usually been a person in adult life and it has not been possible to follow the history of the case for any considerable length of time. With regard to the cases here reported, the injuries were received early in life, before the larynx had matured and in patients whose history subsequent to the injury was easily obtained. In both cases the ultimate effects of the loss of function of the nerve have had abundant time to be completely developed. The histories therefore are not only uncommon, but possessed of unusual interest, and are therefore worthy of being placed on record.

Case I.—Elizabeth X. Aged 23. Patient otherwise healthy; speaks in a hoarse tone of voice of peculiar quality; this is worse in bad weather, when she is fatigued, or when she has a cold. States that when 12 years of age and fairly well grown, she tripped in crossing a railway track and fell, striking her throat upon the inner edge of the opposite rail. The fall was hard and the shock severe. Upon striking the rail she uttered a loud cry, but in attempting to speak immediately thereafter found that she had lost her voice. Subsequently she had been treated at various times and places, but principally at the Masaschusetts General Hospital. Applica-

*Read at the thirty-third annual meeting of the American Laryngological Association, May 30, 1911.

tions had been made to her throat in great variety and the use of electricity employed for considerable lengths of time. No good result had followed any attempt at relieving her.

Eleven years after the accident the patient was examined by the writer. She appeared normally developed, well nourished and healthy. She occupied the position of waitress in a summer hotel and filled her place satisfactorily. Laryngoscopic examination showed the right side of the larynx fixed, with the vocal band drawn a little to one side of the median line. The length of the right vocal band was distinctly shortened, to the extent of about one-third, as compared with its fellow of the opposite side. Fixation was absolute. The cord was slightly hyperemic and the whole of that side of the larynx appeared contracted. The left side of the larynx was in every respect normal, both as to appearance and physiological function, except that it seemed overdeveloped as compared with what might have been expected under normal conditions.

It seemed evident that at the time of the injury to the larynx the right recurrent laryngeal nerve had been completely paralyzed.

The patient was advised of the importance of avoiding laryngitis and it was suggested to her that she report back to the Massachusetts General Hospital for periodical examination of the throat at intervals of not more than a year, so that the history of the case might be kept in mind and that she herself might be under the supervision of some competent specialist.

Case II.—Mr. Y. Age 50, of excellent family history, but of delicate constitution and highly nervous temperament. Voice is somewhat hoarse and its tone feeble. Finds difficulty in phonation, especially when in poor physical condition. His vocal defects are evidently accentuated by highly faulty use of the breath. Has never suffered from any marked indications of dyspnea.

Patient states that he has been hoarse and has had difficulty in speaking since childhood, and attributes this to one of three possible causes, namely: An attack of diphtheria, one of whooping cough and a possible traumatism. The latter was acquired in the following way:

When a small child he attempted to climb a tree, but part way up lost his hold and fell in such a way that his neck was pinioned in the crotch between two limbs, where he hung for a few moments before being rescued. No accurate observations or examinations were made at that time, but following the accident changes in the voice occurred, as mentioned above.

At the present time examination reveals a complete paralysis of abduction on the right side of the larnyx. The vocal band on this side is shorter than its fellow and in every respect less well developed. Immobility seems complete, the vocal band resting a little to the right of the median line, but apparently not quite as far outward as in the so-called cadaveric position. The movements of the left side of the larynx in adduction are exaggerated to the extent of allowing the free margin of the band to pass the median line and meet its fellow of the opposite side. The left vocal band is apparently somewhat overdeveloped. It is not likely that this condition could have resulted either from diphtheria or whooping cough. On the other hand, such a traumatism as that described might easily be supposed to have inflicted an injury upon the right recurrent laryngeal nerve so severe as to cause complete loss of its function. The fact that it was the right recurrent which suffered may have been purely accidental. Nevertheless, it is possible to suppose that with equal opportunity for injury on both sides the position of the right would render it more liable to injury from external violence than the left. Instruction in the proper use of the voice, especially with regard to breathing, has resulted in distinct improvement in tone quality and control.

The prognosis in these cases as to recovery is absolutely bad. There is no reason, however, why the patient should not enter upon any of the ordinary avocations of life with success, the great point being to avoid all sources of irritation to the larynx, and in case of the occurrence of a laryngitis of the simplest type to resort to proper measures for its relief at the earliest moment, as a laryngitis from any cause might so reduce the lumen of the glottis as to produce dyspnea. Physiologically, the overdevelopment of the healthy side of the larynx in its effort to perform its own function and to supplement that of the paralyzed side suggests the value of systematic vocal exercise for all.

40 East Forty-first Street.

REPORT UPON A CASE OF ACUTE BULBAR PALSY, WITH AUTOPSY AND HISTOLOGICAL FINDINGS; TYPE: ANTERIOR POLIOMYELITIS.*

By ALFRED WIENER, M.D.,

NEW YORK.

The thorough investigations which have been going on recently in connection with anterior poliomyelitis have made us all very keen in its recognition. The odd types which we formerly failed to recognize and considered as obscure cases we now have no hesitation in classing as rare forms. Most authors are now willing to believe that an acute infectious malady may attack the grey matter of the brain as well as that of the spinal cord. Such a condition, known as encephalitis or polioencephalitis, was first described by Strümpel. When it attacks the brain it bears such a close resemblance to anterior poliomyelitis of the cord that it seems there should be no doubt in our minds that if they are not one and the same disease they are at least very closely allied. The acute onset with fever associated with drowsiness, stupor, coma, and convulsions, pronounced irritability, nausea, and headache, attended by paralysis, are all characteristic of the onset of anterior poliomyelitis. What seems most convincing is that a clinical picture which might be entirely representative of a brain lesion in some cases is in other cases closely associated with the characteristic picture of anterior poliomyelitis of the cord.

The evidence both clinical and pathological has demonstrated the fact that, whether the malady attacks the brain or cord, it is one and the same disease and probably toxic in nature. It occurs in epidemic form and it has also been shown that when several members of a family are attacked one may present the cerebral type, and another the spinal type. A purely bulbar type is rare. As it has been my privilege to observe such a case and at the same time to report upon the autopsy with macro- and microscopic findings, I feel warranted in placing the case upon record.

C. D. P., Female, 21 years of age, unmarried.

*Read before the American Neurological Association, May, 1912.

Born February 20, 1888. Died August 15, 1909. Family history: Mother and father living and well, one brother, aged 19 years, died of peritonitis following appendicitis; two sisters living and well. One brother died in infancy. Patient is youngest child of family. Personal history: Patient had measles when about ten years of age. She had always had trouble with her hearing. This trouble increased rather than diminished in recent years. Otherwise she had been well, yet never was robust. Present illness began in August, 1909. The patient had not been feeling well for two or three weeks and had been at work indexing in Boston. She came to New York on a visit in the latter part of July; she did not feel as well as usual, but was up and about. On Saturday, August 6, she complained of headache in the evening. On Sunday she felt rather poorly, but was well enough to go to the seashore and to go in bathing. When she attempted to drink at lunch she found she could not swallow, and from that time on she was barely able to swallow anything, the fluid regurgitating through the nostrils. On reaching home she went to bed and had a slight rise in temperature with headache. She was nauseated, and vomited, but was able to take calomel. The following day she felt no better. On Tuesday, August 9, she was seen by her physician. Her throat was examined several times and the possibility of a laryngeal infection, probably diphtheritic, was considered. Antidiphtheritic serum was given August 11, at 7 P.M. Although the possibility of typhoid was in mind, the peculiar throat condition was not explained. On August 14 she was seen by another physician, who thought there was cerebral trouble, and the possibility of a brain abscess was discussed. On the following day I was asked to see the patient with the possibility that an examination of the eyes, ears, nose, and throat might assist us in arriving at a diagnosis.

To me the patient presented all the symptoms of an acute bulbar palsy. There was present dysphagia with paresis of the soft palate and laryngeal muscles, allowing fluids to regurgitate through the nostrils. The speech was indistinct and the voice nasal. The tongue as yet was not paralyzed but was tremulous. A decided increase in the pulse rate and respiratory movements was noticed at times without any lung involvement to account for it. With the exception of the emphasized disturbance in hearing, the ear was normal. An examination of the fundus of both eyes showed a beginning optic neuritis. There was no involvement of any of the other cranial nerves. Considering the clinical facts in this case, *viz.*, distinct prodromal symptoms with a rise of temperature, followed by a sudden onset of bulbar symptoms, not the slightest evidence of diphtheritic infection, and in view of the fact that all previous examinations had proven negative to the various diagnoses in question, a lesion in the medulla, of the type "polioencephalitis inferior" appealed most strongly to me. The diagnosis of polioencephalitis inferior was accordingly made. The patient was experiencing great difficulty in breathing, due to a great extent to the large accumulation of mucus which was mechanically obstructing the larynx. As she could neither swallow nor expectorate this mucus, and as it was wiped away only with difficulty, I advised a tracheotomy. In addition, antiphlogistic and tonic measures were suggested. A surgeon called in did not wish to operate on account of the danger of pneumonia but left an intubation set in readiness. He thought that the whole group of symptoms might be accounted for by some severe metabolic disturbance, and advised the use of thyroglobulin. The patient gradually passed into a comatose condition and was unconscious for several hours until her death early Sunday morning.

Blood examinations were made at various intervals during the illness. August 11 the leucocytes were 16,000 and the polymorphonuclears 84 per cent. August 13 the leucocytes were 12,000, the polymorphonuclears were 84 per cent., and the red blood cells were 4,624,000. Urine examination on August 11 showed a trace of albumin, no sugar, an increase of indican, and the presence of acetone. The Diazo reaction was negative. On August 14 the specific gravity was 1,020, there was a marked trace of albumin, no sugar was present, indican was increased, and acetone and diacetic acid were present. On August 11 a culture taken from the throat was negative for diphtheria bacilli.

Report of the autopsy by Dr. Pappenheimer: The body is that of a rather poorly nourished, slenderly built young woman of small stature. Rigor mortis is well marked. The abdomen is scantily covered with adipose. The thorax is long and unusually narrow, the costal angle being very acute. The diaphragm is at the level of the third interspace on the right side, and at the fourth rib on the left. Both pleural cavities are free from fluid and adhesions. The pericardial sac contains a few cubic centimeters of clear fluid. The thymus gland is small and fleshy. The heart is of normal size; the cavities contain cruor and chicken fat clot. The tricuspid, pulmonary, and aortic valves are normal. The mitral segments are delicate; on their auricular surface there is a row of very minute translucent, pinhead-sized vegetations. The myocardium is firm, of good color, and shows no hypertrophy. The aorta is of rather small caliber, delicate, and elastic. Just above the sinuses there are a few small areas of intimal degeneration. The lungs, apart from marked hypostatic congestion and edema limited to the right lower lobe, are everywhere well aerated. There are no pneumonic or tuberculous lesions. The bronchi, bronchial lymph nodes, and pulmonary vessels are normal. The liver is normal in size and consistency. On section, the parenchyma is slightly paler than normal, the lobular outlines being rather indistinct. The spleen is small, the capsule wrinkled, the pulp firm, the trabeculæ on section distinct, and the follicles are not enlarged. The pancreas is pale and firm. The left adrenal is normal. The kidneys are of normal size, the capsule strips readily leaving a smooth surface. The cortex is of normal relative width, the color is somewhat pale, and the markings are not distinct. The pelves are normal and the glomeruli are not unduly prominent. The bladder, genitalia, and organs of the neck were not examined. The gastrointestinal tract was not examined. The dura mater is not adherent, and the longitudinal sinus is free from antemortem clot. The pia mater is neither thickened nor edematous, the cerebrospinal fluid at the base being apparently not excessive. The basilar vessels are free from atheroma. The cortical veins are moderately congested and on section the brain tissue is somewhat hyperemic. On cross-sections through the medulla after preliminary hardening there are found a few small irregularly distributed reddish areas. Otherwise the brain tissue appears normal. The ventricles are not distended and the ependyma is smooth. The middle ears and sphenoidal sinuses

are normal. Anatomical diagnosis: Acute verrucous endocarditis. Parenchymatous degeneration of the kidneys. Acute bulbar encephalitis?

The lesions found on histological examination were limited to the medulla and pons. Sections taken from various parts of the cortex showed nothing of interest. The lesions in the medulla and pons consisted of the following: (1) Perivascular round-celled infiltration. Many of the capillaries and smaller arteries are enclosed in a thick mantle of small round cells. The endothelium is frequently swollen. (2) Areas of recent softening, some of which attain a size of several millimeters, and are readily visible on gross inspection of the section. These areas consist chiefly of accumulations of fatty granule cells (Fett-Kornchenzellen), among which are scattered polymorphonuclears and lymphocytes, and in addition some hemorrhagic extravasations. (3) Various stages of degeneration in the ganglion cells. The leptomeninges show the same hyperemia and perivascular infiltration around the blood vessels as mentioned above. There are no thrombi in the vessels and no hemorrhagic extravasations. The lesions are distributed irregularly through the gray and white matter and are present in all sections taken from different levels of the pons and medulla. Thionin preparations show no bacteria. The liver shows numerous areas of focal necrosis, infiltrated with polymorphonuclear leucocytes. The spleen, pancreas, adrenals, and kidneys show nothing of interest. Bacterial examination: Cultures were made from the spleen at the autopsy, and a pure culture of a Gram-positive bacillus, subsequently identified as a pseudodiphtheria bacillus, was obtained. Histological diagnosis: Acute polioencephalitis inferior, or rather an acute bulbar palsy of the type "anterior poliomyelitis."

PSORIASIS—A NEUROSIS.

By WILLIAM P. CUNNINGHAM, M.D.,

NEW YORK.

CLINICAL LECTURER ON DERMATOLOGY AT FORDHAM UNIVERSITY; CLINICAL ASSISTANT AT THE NEW YORK SKIN AND CANCER HOSPITAL; ASSISTANT PHYSICIAN, DERMATOLOGICAL DEPARTMENT, HARLEM HOSPITAL.

"Put your case of psoriasis to bed, give him hypodermics of arsenic, get him cleaned up as quickly as possible—and collect your bill before he relapses." This advice, given to a post-graduate class by a very eminent dermatologist, sums up our knowledge of the disease under discussion. It means that we cannot cure psoriasis; that all we can do is to produce a retrogression of the lesions, more or less protracted.

The plain unvarnished truth is, we have been in utter ignorance of the cause of psoriasis and have been unable to proceed intelligently to control its manifestations. Its parasitic origin has been urged with much fervor by its advocates on the ground that parasiticides have the most deterrent effect upon the lesions. Chrysarobin, tar, and ammoniated mercury will do more to plane down the thickened scaly eruption than anything else used externally. But this treatment does not cure. It is palliative only, and clearly does not get to the root of the difficulty, namely, the etiology. There are others who believe with Dr. Bulkley that the ingestion of nitrogenized food is provocative of psoriasis. This contention is valiantly disputed by many eminent men, and it certainly would appear to be true only in part, because many cases of psoriasis go blithely on their way in spite of the most radical modifications in diet. I will admit most cheerfully that the best method hitherto devised, of holding back the eruption in those predisposed, is by omitting animal foods, but this does not cure, and therefore does not indicate the etiology.

Any observer who has seen much of psoriasis cannot fail to be struck by certain definite and constant characteristics in its manifestations, whether these be sparse or profuse.

First he will find sites of election pretty constantly affected. Again, he will find a rough symmetry of distribution. Again, he will find a constantly identical configuration of unit lesions. Again, he will find a simultaneous outbreak at many different and distant points. These peculiarities associated with the occurrence of the disease in persons often of a robust, hardy type, in whom no discernible vice of metabolism exists, point pretty clearly to a central controlling agency—in other words, to the nervous system. It is not possible to say (in the obscurity of our present ignorance) just what vitiated impulses are coming along the nerves to the affected areas in the skin, but it is rational to suppose that they exist and that they are the etiological factor in psoriasis. Something happens to a patient's nervous system and he gets a perforating ulcer of the foot. Something else happens and he breaks out with herpes zoster. Something else happens, and he develops leucoderma or angioneurotic edema, or dermatitis herpetiformis. A little thought will call up many other conditions where the nervous system is admittedly at fault in the production of cutaneous diseases. Why may not psoriasis be reasonably included in the same category? The helpful effect of arsenic can be explained by its well-known tonic action on the nervous system. The helpful effect of a non-nitrogenized diet can be explained by the greater placidity of the nervous system under such a diet. The improvement often noted after a change of climate can be explained by the improved condition of the nervous system. There is a bracing of the nervous system due to a renewed interest in one's surroundings. The well-known effect of surf bathing is explicable through its action on the nervous system. Salt water baths taken at home would never bring about the same improvement as the same number of baths in the surf with the impact of the waves on the body, the sunshine, and exhilaration of the exercise. And truth to tell, the effect of all those agencies cannot be explained in any other way.

So it would appeal to me that instead of plastering the patients with repulsive ointments we should devote our minds to discovering what is amiss with their nervous systems and seeking to put them in as normal a condition as possible by whatever means, medicinal, hygienic, climatic, and moral we may be able to employ. We will probably come sooner by this method to the discovery of the cause and the remedy for psoriasis. All this about treatment may be sufficiently vague, but I am only seeking to indicate a road, not to elaborate an exhaustive plan of treatment. All the methods hitherto employed have been sorry enough in their results, and any change in our way of handling these cases promises at least as much as they.

It is quite impossible in dispensary practise to resort to measures calculated to improve the nervous tone. But in private practice much can often be done along that line. I have only three cases to

offer, but I am sure they are sufficiently suggestive to be worth describing.

Case I.—Woman of 40, not particularly robust, but strong-fibered and self-reliant, burdened with much responsibility. Had had psoriasis for twenty years. It yielded and relapsed, yielded and relapsed, after the manner of psoriasis always, but it never got entirely well. Finally it got to her face, encroaching from the hair line. Her business position was at once in peril. Hitherto she had borne her affliction stoically because it could be hidden, but when it appeared on her face her morale collapsed; she became peevish and fretful and her eruption grew apace. All the remedies that had helped her before failed her now. Arsenic was pushed; she ate only things that grew in the ground, and drank only milk; all the heretofore effective external applications were employed, and the only noticeable result was a steady invasion of previously unaffected territory. I finally persuaded the patient that if she would quit worrying, forsake her accustomed surroundings for a time, and take a trip into the country she would get well. This assurance was given in desperation, because I was at the end of my resources and no other avenue of escape was open. She took me at my word. She went into the woods, took to roughing it, paid absolutely no attention to her diet or her eruption, and in eight weeks her skin had entirely cleared. Is the result permanent? I do not know, but it established clearly enough that the cause of her outbreak was located in her nervous system and the care-free life she had led in the open had restored her nervous equilibrium. She had been several months entirely well when I saw her last, which was in the early winter.

Case II.—Young man with an enormous patch of psoriasis on his arm. It was a fixture—never disappearing—yielding a little once in a while, but as often returning with encroachment. The one peculiarity about it was that it always improved when his hopes were high and relapsed when he was despondent. All the remedies with a reputation proved ineffective here except for a short time. He bade fair to become a chronic, hopeless case (as most of them settle down to be) when he received news of an inheritance that relieved him of all financial responsibility and enabled him to take a trip through Europe. The end of that trip saw the end of his lesions. He used no treatment of any kind while he was away. He had time only for sightseeing and pleasure. Is the result permanent? I do not know, but here, again, the etiology would seem to be established.

Case III.—Girl, aged 12. Psoriasis for two years. Eruption in all the classical situations. Face not involved. Lesions heavily scaled. One of the cases that itched. Child appeared to be well enough, although she had large tonsils and adenoids. She lived with her stepmother and was not a very happy child, being very sensitive about her condition. Usual results of usual treatment. Recession, relapse, recession, relapse, under all forms of therapeutics. I advised removal of tonsils and adenoids. This was done, but the child did not get well, though her disposition improved. Finally her stepmother died. The child was removed to the care of a paternal relative in the country. Here she ran wild and became a perfect hoyden. Her mental condition rapidly changed; she grew cheerful and hopeful. After six months under these distinctly different conditions with no treatment at all devoted to the eruption it cleared off entirely. Is the cure permanent? Again, I do not know, but it confirms my opinion of the etiology of psoriasis. It may be excepted that I am attributing to nervous influence what was caused by improved metabolism. The point I contend for is that none of these cases showed the slightest disposition to do well until the nervous system received a vigorous uplift, and the one pronounced symptom attending their convalescence was the heightened hope and brightened view. Of course, it is not practicable to apply such treatment to very many cases because of financial limitations, but the seeking of the cause in the direction of nervous derangement may bring to light, sooner or later, a method of treatment within the reach of all. This idea is not new, nor is it widely accepted, but I am convinced that we shall hear more of it before very long. With a disease of this sort offering absolutely no hope of permanent results along the old lines of endeavor, it will be perfectly justifiable to experiment on any new lines suggested, and the road once indicated our enterprising physicians will follow it quickly to a definite conclusion.

315 West Fourteenth Street.

Epinephrin in the Circulation.—T. C. Janeway and F. A. Park state that the modified Meyer method of parallel tests upon segments of surviving carotid and coronary arteries from the ox, is a satisfactory means for detecting epinephrin in complex body fluids like blood. At the present time there is no evidence that epinephrin, in amounts sufficient to produce its physiological effects upon any hitherto used test objects, exists in the circulating blood, with the exception of blood from the suprarenal vein. The examination of uncoagulated blood from six persons with high blood pressure has failed to show the presence of epinephrin or other constricting substances. The constrictor substance in defibrinated blood and serum is not an epinephrin-like substance. In its point of action and its effects it is similar to barium chloride. It is a direct stimulant to smooth muscle and seems to have no relation to the sympathetic innervation of muscle.—*Journal of Experimental Medicine.*

Sarcoma of the Thyroid Perforating the Trachea.—D. R. Paterson reports the case of a woman, aged 46, who was admitted to the hospital complaining of difficulty of breathing with a swelling in front of the neck for about six weeks. There was a considerable degree of dyspnea with cyanosis. There was a flat, hard, painless swelling over the thyroid, and involving that organ. In the larynx the cords moved not very freely, and in the subglottic region a greyish irregular mass was seen filling up the greater part of the tracheal lumen. Tracheotomy was performed under a local anesthetic. The incision went through soft friable tissue, the trachea being found deeply placed, having been pushed towards the spine by the growth. A portion of tissue removed showed it to be a small round-celled sarcoma. Its complete removal was considered impossible. At the end of a fortnight the growth had invaded the skin wound, and pieces of growth were coughed up from time to time. The opening was kept patent by a rubber tube. The patient died suddenly in the night about a month after her admission to hospital. The growth involved the thyroid gland and the neighboring parts. The upper part of the trachea above the opening was filled with round masses of growth which had apparently perforated the anterior wall. Death had taken place by hemorrhage escaping into the lungs from one of the intratracheal growths.—*Proceedings of the Royal Society of Medicine.*

MEDICAL RECORD.

A Weekly Journal of Medicine and Surgery.

THOMAS L. STEDMAN, A.M., M.D., EDITOR.

PUBLISHERS

WM. WOOD & CO., 51 FIFTH AVENUE.

See fourth page following reading matter for Rates of Subscription information for Contributors and Subscribers.

New York, December 7, 1912.

RECENT ADVANCES IN THE INTERPRETATION AND TREATMENT OF PRURITUS ANI.

IN studying the more serious diseases of humanity it is possible to overlook the importance of the minor ailments which, although not life-threatening, are, nevertheless, responsible for a great amount of suffering and disability. In this field of work the general practitioner who is not adept in the refined methods of laboratory research may by close observation and careful study of his cases accomplish useful and unexpected results. The so-called functional disorders are the ones that furnish a vast and unexplored territory for the enterprising physician.

As an example of an ailment that ranks among the commonest that afflict mankind may be mentioned pruritus ani. Apart from the cases in which this condition is merely a symptom of easily recognizable structural changes in and about the lower end of the alimentary canal, such as hemorrhoids, fissures, fistulæ, and eczema, or is the result of the presence of intestinal or other parasites or of such metabolic derangements as diabetes and gout, there remain a large group of cases of anal pruritus which have been regarded as of purely functional or neurotic origin. It is these cases that have remained the despair of patient and physician alike.

Recently there have been a number of important contributions to this subject that bid fair to restrict the boundaries of the last group of cases. One of the most valuable of these contributions is the work that has been done by James P. Tuttle of New York, who has recognized and described practically a new morbid entity of which pruritus ani is the main symptom. The paper in which his interesting results are reported was read at the last meeting of the American Gastroenterological Association and was published in the *American Journal of Surgery*, June, 1912. This disease, which is termed "cryptitis," consists of an exaggeration and inflammation of the crypts that dip down from the sinuses of Morgagni beneath the mucocutaneous margin of the anal outlet. These crypts are irritated by the presence of retained fecal matter, and present all the phenomena of blind internal fistulæ. The hypertrophied anal folds and the skin tabs that are present in so many cases of what has been regarded as idiopathic pruritus, are not as has been erroneously supposed the result of scratching or of the excessive moisture of the parts, but are the external manifestations of the inflammation of these crypts. The detection of these exaggerations of normal anatomical structures is exceedingly difficult because of their peculiar topography. The use of a shepherd's-crook probe enables one to determine the presence of these crypts. The effective treatment of this condition requires a dilatation of the sphincter ani under general anesthesia, a careful search for the pathological crypts, and their complete obliteration as in the case of blind internal fistulæ.

In the new edition of his book on diseases of the rectum the late Sir Frederick Wallis,* who died just after he had corrected the proof sheets, stated that in 90 per cent. of his inveterate cases of pruritus ani there was a small ulcer, abrasion, or submucous tract which was found usually between the two sphincters, more often in the posterior half than in the anterior, and generally near the dorsal midline. These lesions rarely heal of their own accord and become chronic ulcers covered by granulation tissue which exudes an irritating secretion causing pruritus ani.

One of the most valuable features of Wallis's work is the emphasis which it places upon the pathological importance of the ano-proctodeal line or junction between the proctodeum and the lower bowel. "This lining membrane is not skin," states Wallis, "and it is not mucous membrane, and consequently it has not the tough resisting power of the one nor the vascular supply, which is a great power, in the other." It is a matter of importance to recognize that some lesion of the ano-rectal junction is the starting point of the majority of rectal troubles. Effective removal of this danger zone produces the greatest benefit.

There is another phase of this subject that merits attention. In a letter in the *Lancet*, September 28, 1912, D. H. Murray of Syracuse, N. Y., states that as the result of his second year's study of the question, he has been able to confirm his previous opinion, namely, that a streptococcic skin infection is the predominating element in pruritus ani. Cultures made from the site of the lesions in thirty-two cases of pruritus ani showed colonies of streptococci, usually of the fecalis variety. The use of autogenous vaccines made from these organisms caused a relief in the itching and a concomitant disappearance of the streptococci from about the anus.

This brief review of the modern status of the knowledge of pruritus ani indicates at least that there are many subjects in medical science, particularly relating to common ailments, in which new and important discoveries are to be expected as the result of careful observation, and as the result of casting aside the blind adherence to traditional teaching.

*"The Surgery of the Rectum for Practitioners." By Sir Frederick Wallis, M.B., B.C., Cantab., F.R.C.S., Surgeon Charing Cross Hospital, St. Mark's Hospital, and the Grosvenor Hospital for Women and Children. London: Henry Frowde, Oxford University Press; Hodder & Stoughton, 1912.

THE UNIVERSITIES AND MEDICAL RESEARCH.

Recently President Pritchett of the Carnegie Foundation for the Advancement of Teaching has addressed the public on the necessity of universities controlling hospitals as a means for medical education. No one can take issue with him on the necessity of bedside instruction and experience for undergraduates in medicine. It is where he advocates scientists, in contradistinction to practitioners, as teachers of medicine, surgery, and obstetrics that his opinions become open to criticism, especially his objection to the present faculties as being "with a few notable exceptions only incidentally and secondarily interested in medical education and less interested in medical research." The modern movement in medical education, of which President Pritchett is an advocate, aims for research work and investigation in the medical sciences. This is well and proper, but it must not be lost sight of that the fundamental aim of medical education is to teach the student how to practise medicine. If a university sets forth on the basis that the practitioner knows nothing worth teaching, it values as nothing a profession for which it promises to prepare the student.

This confusion of medical education with research work could be corrected by reviewing the progress of medical science. There it can be seen how the great advances came. The first came with the teachings of Redi, the naturalist, who revealed the animal parasites and upset the cherished theories of medical authorities. The next also was not initiated by a medical authority but by a chemist, Pasteur. Both of these great scientists were great teachers, but they could not have prepared the student for the practice of medicine. On the other hand, the physician and surgeon were able to at once use the results of their discoveries and to teach them.

The present desire for greater progress in the treatment of disease brings the problem of how this can best be accomplished. Considered in an abstract way it might seem to be readily solved by putting all hospital patients in the hands of the proposed investigators; but in reality the variety of diseases and conditions presented would make very busy practitioners of them, and it is doubtful if much time would be left for research, especially if they are also required to teach students. Without disturbing the present methods of medical education the universities could obtain some of the desired investigation by limiting the activities of each investigator to a definite problem and by drawing on the talent of the entire university for help. The possibilities of the combined helpfulness of the different departments in a university have never been placed at the disposal of the researcher. To-day any one problem may for its solution require some help from the bacteriological department, the zoological department, the department of physical chemistry, etc. There is no way provided by the university whereby the researcher may have proper assistance from these strictly separate departments, except, perhaps, in a very small way and then as a personal favor of the department to the researcher. These possibilities could be developed by having a director of medical research who should have authority to request conferences, material, and help from the different departments as the several researchers might require them. To show that such a plan is not fanciful and would not be barren in results it is only necessary to refer to one of many instances of very efficient research work accomplished by such cooperation. We refer to the work of Hoffmann, the medical investigator of the disease syphilis, and his brilliant collaborator, Schaudinn, the protozoologist.

UNNECESSARY NOISE IN CITIES.

Among the matters dealt with at the recent International Congress on Hygiene at Washington was that of unnecessary noise in cities. Dr. Clarence John Blake of the Harvard Medical School read a paper in which he stated that the bad effect of unnecessary noise is evidenced not only in the changes occurring in the organ of hearing as the result of continued exposure to loud noise, but also in the fatigue showing itself generally and evidenced by various forms of disturbance of function of the nervous system. Blake further said that a great part of the noise incidental to the mechanical operation of modern life, especially in community centers, is avoidable. The suppression of unnecessary noise is therefore advisable for economic reasons, both in the safeguarding of the human machine and in the saving of wasted mechanical energy, of which noise is an evidence—a saving of waste in both directions.

No phase of modern civilization impresses the Oriental more unpleasantly than the ceaseless din and clamor of our crowded streets. The philosophic and perhaps wise visitor from the Far East asks himself if the undignified, ceaseless scurrying to and fro of men and women, the blare of discordant bands, the metallic nerve-racking rattling of street cars and elevated trains, the weird and ear-splitting sounds emitted from rushing, smoking automobiles, and the various other disagreeable noises that go to make up the bedlam of a modern Western city are the outward and visible signs of an inward and spiritual grace or are merely significant of the vulgar materialism and mad rush for wealth which distinguish modern civilization. The Eastern philosopher craves the brooding peace of the old Orient. Of course, it will be asserted that the dweller in the lotos-eating East is no fitting judge of what is meet for the strenuous striver after money and notoriety, but at the same time it may be said that the latter can strive as strenuously, more pleasantly and with less injurious effect on himself and fellow citizens if he does not make so much noise about it. Moreover, it is not only the supposedly lethargic and apathetic Oriental who decries the modern methods of noisy bustle. There is a large body of men and women even in America firmly of the opinion that most of the noise accompanying modern life is both unnecessary and in a high degree harmful. In the *Canadian Journal of Medicine and Surgery* for November, 1912, is an editorial note discussing the noise in cities, and drawing attention to the fact that an eminent Australian visitor to Toronto was

distracted by the noises which assailed his ears by night and day. It would be bad enough if unnecessary street noises were restricted to the daytime, but unfortunately night is often made hideous by various insistently rest-breaking sounds. Clocks, cats, street cars, bells on the engines of trains, milk carts, and so on all add their quota to the disturbances which by night often render sleep difficult to the healthy and impossible to the sick.

The Society for the Suppression of Unnecessary Noise has done good work in the city, but there still remains much to be done. When the public is educated to the fact that noise is not synonymous with progress, but, on the contrary, impedes useful effort and is hurtful to health, then radical reforms in this direction may be looked for. In the meantime the campaign against unnecessary noise should be conducted persistently.

MALIGNANT PUSTULE THROUGH THE AGES.

Many good clinicians upon reading ancient and medieval descriptions of disease have straightway expressed their final conviction that attempts to connect these with diseases as we know them to-day represent a mere waste of time. The chief blame is naturally placed on crudeness of description, and it is not difficult to show that since a given episode may be reduced to an absurdity, the subject is not one for research. The plague of Athens, for example, agrees with none of the great epidemics of to-day, although it has been identified with a dozen of these by irresponsible writers. But there is evidently room here for a school of higher criticism if a set of men can be interested in this work who possess certain qualifications. The value of all criticism depends upon the sum of the actual attainments of the critics, duly tempered of course with good judgment and scientific use of deduction.

These requirements appear in part in a paper recently read by Richter before the Section for History of Medicine of the German Society of Naturalists and Physicians (*Münchener medizinische Wochenschrift*, October 22). The subject was "the significance of malignant pustule for the history of epidemics." The author makes full use of both induction and deduction. Nothing can be more certain, from analogy, than the former wholesale prevalence of malignant pustule—a severe constitutional polymorphous affection epidemic in both mankind and animals, and transmissible from one to the other in various ways. But unimaginative historians have ignored this almost self-evident probability. In such impressive epidemic affections as "sacred fire," "Persian fire," etc., etc., they have seen nothing beyond such everyday conditions as simple carbuncle and erysipelas.

One year ago before the same body Richter announced that malignant pustule was of great significance for the history of epidemiology, and now he adduces fact upon fact in support of this view. If it once be admitted that this affection prevailed as a scourge in ancient times its phenomena are readily recognized in several episodes of classic and sacred writings, to say nothing of technical works. It is moreover not difficult to show that after the earliest observers had given good accounts of this condition, their successors in translating from one language to another allowed those errors to creep in which persist to the present day.

In our own era epidemics of malignant pustule have sprung up in out of the way localities, attacking man and animals, and have received gruesome names from the public to whom the disease had been unknown. A Swiss poet once wrote a lay tribute to the "black spider," as he termed the malady. The disease in its general aspect has often been confounded with another gangrenous folk plague, to wit, ergotism.

Sporadic Plague in Hamburg.

The occurrence of exotic diseases in great centers of civilization is always of extreme interest to the clinician because the maladies when submitted to all the technical resources of a metropolis often appear quite unlike the textbook descriptions which are naturally based on facts obtained under widely different circumstances. Thus for a long period cases of socalled yaws which drifted to the great medical centers were nothing but examples of syphilis to the metropolitan experts. Sannemann at a recent session of the Medical Society of Hamburg (*Münchener medizinische Wochenschrift*, November 5) stated that four cases of bubonic plague had appeared in that city since 1900, all from the River Plata ships (South America). Three of the four patients died. The onset was obscure and unlike that set down in textbooks. Early diagnosis was almost out of the question. Clinically the most striking facts were high temperatures and profound disturbance of the general economy. As for death, that was pyemic throughout, from secondary infection. Such cases could, therefore, simulate a pyemia from lymphadenitis. Rumpel, who had studied the plague at Oporto, laid great stress on the personal history. Given the case of a seaman or passenger just come from a plague country, with very high temperature, he must at once be regarded as a suspect. One should not make a diagnostic opening into a bubo until assured that pus is present.

News of the Week.

A Discussion on Vertigo will take place at the meeting of the Otological Section of the New York Academy of Medicine on December 13. Mr. Richard Lake, F.R.C.S., of London will read a paper entitled "Vertigo, a Clinical and Therapeutic Study," and the paper will be discussed by Drs. James F. McKernon, Charles L. Dana, E. B. Dench, Philip Hammond of Boston, Nathaniel Bowditch Potter, Percy Fridenberg, and others. The Chairman of the Section extends a cordial invitation to all who are interested in this subject.

Decrease in Death Rate.—The mortality in New York City for the week ending November 24 was 1,354 deaths, with a death rate of 13.65 per thousand of population, while in the same period of 1911 the deaths amounted to 1,378 and the rate was 14.43. The decrease occurred entirely in the number of adult deaths, and those of children under five years of age were slightly increased

The death rate for the city during the third quarter of the year, that is the months of July, August, and September, is given as 12.94, a decrease of 1.44 from the rate of the same months last year, or an absolute decrease of 1,187 deaths.

Requirements for Medical Licenses.—It is announced that after January 1, 1914, an applicant for license to practise medicine in the State of Pennsylvania must show that he has served as interne in a hospital for a period of at least one year after a four years' course of instruction in a medical school.

To Fight Cancer.—Carrying on the policy outlined at the Clinical Congress of Surgeons of North America in New York recently, the Chicago Medical Society has named a committee to further the campaign of publicity in the fight against cancer. The committee is composed of Dr. Franklin H. Martin, Chairman; Dr. C. Volini, Dr. C. C. O'Byrne, and Dr. Jacob Frank.

Licenses Granted.—The Missouri State Board of Health has issued licenses to practise to thirty-one medical graduates who successfully passed the examination given by the Board last October.

Railroad Casualties.—During the month of October, 1912, 3,771 persons were injured in accidents on the subway, elevated, and street railways of New York City, or 565 more than during the same month of last year. Twenty-five persons were killed and there were 208 cases of serious injury.

Earthquake and Pestilence.—Thousands of persons are said to have been killed in the rural districts of Mexico by the earthquake on November 22, and the survivors are threatened with serious epidemics of disease. Smallpox and typhoid fever have already appeared, and as the only water available is that in stagnant pools the infection is likely to spread with ease.

Personals.—Dr. J. J. O'Connell, Health Officer of the Port of New York, sailed on November 30 for Panama, where he will make a tour of inspection.

Dr. Ross H. Skillern has been appointed clinical professor of laryngology in the Medico-Chirurgical College of Philadelphia, in succession to Dr. Arthur H. Cleveland, resigned.

Dr. William Seaman Bainbridge of New York has been appointed consulting surgeon to the Tarrytown Hospital, Tarrytown, N. Y.

Dr. W. H. Luckett has removed to 18 West 87th street, New York.

Gifts to Charities.—By the will of the late Barbara McClure of Philadelphia, the sum of $100 is bequeathed to the Home for Consumptives at Chestnut Hill, Philadelphia.

The Stumpf Memorial Hospital Association of West Hudson, N. J., has received a gift of a house and land from Mr. Jacob Stumpf of Harrison. The house will be rebuilt into a modern hospital and the institution will be supported by the residents of West Hudson.

By the will of the late Dr. Richard H. Cleeman of Philadelphia, the sum of $50,000 is left to the University of Pennsylvania to be used for the erection of two dormitories which are to be known as Cleeman Halls.

University of Maryland.—At the celebration of Academic Day on November 12, the provost, Judge Henry Stockbridge, announced that checks and securities to the amount of $10,000 had been placed in his hands for the purpose of beginning the endowment of the chair for experimental physiology. This sum was the gift of Prof. John C. Hemmeter, who at present holds the chair of physiology at the University.

Nurses Graduate.—The graduating exercises of the German Hospital Training School for Nurses, New York, were held on November 28, when the president of the school handed diplomas to twenty-two young women who had completed the three years' course.

Surgical Clinics.—Dr. Parker Syms will hold a series of surgical clinics at the Lebanon Hospital, New York, on Wednesday afternoons at 3 o'clock, until March 1. The Lebanon Hospital is most conveniently reached by the West Farms Subway to the Jackson Avenue Station.

Tuberculosis Hospital.—The Supervisors of Westchester County, New York, whose request for permission to build a county tuberculosis hospital at Yorkville was recently denied by the State Commissioner of Health, are now considering the purchase of a farm of seventy-seven acres in the Pocantico Hills and adjoining the estate of Mr. John D. Rockefeller, near Tarrytown.

Hygiene and Public Health at McGill University.—Mr. John W. Scane, registrar of McGill University, writes: "I notice an article in the MEDICAL RECORD of November 16th, in which the statement is made that the University of Kansas School of Medicine announces a course of Public Health and Preventive Medicine which will be required for the degree of M.D., and that this is the first time that such a course has been made obligatory in a medical school. I should like to correct this statement and to say that the Medical Faculty of McGill University has required a course in Hygiene and Public Health for the degree since 1877 and that this course was first given in medicine in 1871 and in 1877 was made compulsory."

The German Medical Society of New York at a meeting held December 2, elected the following officers for 1913: *President*, Dr. G. Seeligmann; *Vice-President*, Dr. H. Fischer; *Secretary*, Dr. M. Rehling; *Treasurer*, Dr. S. Breitenfeld.

Associated Physicians of Montclair.—Dr. Joseph Collins, physician to the Neurological Institute, New York, will speak before the Associated Physicians of Montclair and vicinity on December 23, taking as his subject: "The Early Interpretation and Treatment of the Commoner Psychoses." Other lectures will be delivered before the Society by physicians of New York and Philadelphia each month until spring.

Rush Medical Society.—The Rush Medical Society of the University of Pennsylvania was organized in Philadelphia on November 24 for purposes similar to those of the Harvey Society of New York. Arrangements will be made for the delivery of public lectures for the diffusion of knowledge of the medical sciences.. The following officers have been elected: *President*, Dr. Richard M. Pearce; *Vice-President*, Dr. Alfred Stengel; *Secretary-Treasurer*, Dr. William Pepper; *Executive Committee*, Dr. H. Taylor, Dr. A. C. Abbott, and Dr. H. H. Donaldson.

For the Study of Alcoholism.—The forty-second annual meeting of the American Society for the Study of Alcohol and Other Narcotics will be held at the Hotel Raleigh, Washington, D. C., on December 10 and 11, 1912. The purpose of the meeting is the presentation and discussion of the latest and most authoritative studies on alcoholism,

inebriety, and drug taking. Particulars may be obtained from the secretary, Dr. T. D. Crothers of Hartford, Conn.

Third District (S. C.) Medical Association.—The following officers were elected at the annual meeting held in Greenwood on November 21: *President,* Dr. Thomas L. W. Bailey, Clinton; *Vice-President,* Dr. R. B. Epting, Greenwood; *Secretary-Treasurer,* Dr. G. P. Neel, Greenwood.

Crawford County (O.) Medical Society.—At the annual meeting held in Galion on November 21, the following officers were chosen for the ensuing year: *President,* Dr. William H. Guiss, Tiro; *Vice-President,* Dr. E. R. Schoolfield, Bucyrus; *Secretary-Treasurer,* Dr. Lucia Kemp, Bucyrus.

Eighth District (Cal.) Medical Society.—The annual convention was held at Chico on November 19, when the following officers were elected: *President,* Dr. Dan H. Moulton, Chico; *Vice-Presidents,* Dr. G. H. Fay, East Auburn; Dr. Charles B. Jones, Sacramento, and Dr. T. P. Peery, Yuba City; *Secretary,* Dr. Frederick F. Gundrum, Sacramento; *Treasurer,* Dr. Oscar Stansbury, Chico.

New York County Medical Society.—At the 107th annual meeting held on November 25 the following officers were elected: *President,* Dr. Brooks H. Wells; *Secretary,* Dr. John Van Doren Young; *Treasurer,* Dr. Charles H. Richardson; *Councillors,* Dr. David Bovaird, Jr., Dr. Joseph B. Russell, and Dr. John J. MacPhee.

The Late Dr. von Ramdohr.—The following resolution was passed at a recent meeting of the Medical Board of the Peoples Hospital: *Whereas,* Dr. Cæsar A. von Ramdohr had served the People's Hospital as Consulting Obstetrician since the foundation; and, *Whereas,* In his life he had acted to his professional brethren with rare kindness, courtesy, and consideration; and, *Whereas,* The members of the Medical Board and lay boards of the People's Hospital deeply deplore the loss of his knowledge, skill, and kindly aid; RESOLVED, That a copy of these resolutions be sent to the family of the late Dr. Cæsar A. von Ramdohr and to the medical journals, and that they be spread in full on the minutes of the Medical Board.

Obituary Notes.—Dr. ELIZABETH C. KELLER of Boston, Mass., one of the first women in the country to practise surgery, died at her home in Jamaica Plain on November 28, aged 75 years. She was graduated from the Women's Medical College of Pennsylvania, Philadelphia, in 1871, and soon after opened a free dispensary and hospital in that city. In 1875 she became resident physician at the New England Hospital for Women, and later established herself in private practise.

Dr. JOHN DALE MCGILL of Jersey City, N. J., for twenty-six years Surgeon-General of the New Jersey National Guard, died at his home on November 28, aged 65 years. Dr. McGill was graduated from Princeton University in 1867 and from the Medical Department of the University of Pennsylvania in 1870. He was for forty-one years a member of the staff of St. Francis Hospital, Jersey City, and of the consulting staff of the Jersey City Hospital, and had also served as police commissioner of Jersey City, president of the Board of Education, and president of the Board of Finance. He was a member of the American Medical Association and of the New Jersey State and Hudson County Medical Societies, and a former president of the last.

Dr. MARKAR G. DADIRRIAN of New York, a graduate of the New York University Medical College in 1871, a member of the New York State and County Medical Societies, the Physicians' Mutual Aid Association, and the Imperial American Society of Constantinople, died at his summer home in Hastings, N. Y., on November 24, aged 73 years.

Dr. JOHN E. BRUERE of New York, formerly of St. Charles, Mo., a graduate of the Medical Department of Washington University, St. Louis, in 1858, and a surgeon in the United States Army during the Civil War, died at his home on November 22, aged 76 years.

Dr. JAMES B. GASTON of Cripple Creek, Col., a graduate of the Rush Medical College, Chicago, in 1888, died suddenly of apoplexy on November 16, aged 61 years.

Dr. WILLIAM CAMPBELL of Equality, Ill., a member of the Illinois State and Gallatin County Medical Societies, died suddenly on November 21, aged 70 years.

Dr. JACOB HETRICK of Fort Wayne, Ind., a graduate of the Fort Wayne College of Medicine in 1881, and a member of the Indiana State and Allen County Medical Societies, died at his home after a long illness on November 19, aged 66 years.

Dr. SAMUEL DAWES BOWKER of Charlemont, Mass., a graduate of the University of Vermont College of Medicine, was struck and instantly killed by a railroad train near the Hoosac Tunnel, on November 15, in the 50th year of his age.

Dr. GEORGE EBENEZER FRANCIS of Worcester, Mass., a graduate of the Harvard University Medical College in 1863, surgeon in the United States Army during the Civil War, consulting surgeon to the Worcester City Hospital, the Memorial Hospital, and St. Vincent Hospital, a member of the Massachusetts State Medical Society, of which he was president from 1902 to 1004, and of the Worcester County Medical Society, died at his home from cystitis on November 20, aged 74 years.

Dr. PARKS REX of Wellsville, O., a graduate of Western Reserve University, Medical Department, in 1878, died at his home from Bright's disease on November 18, aged 64 years.

Dr. ROBERT E. LEE of Darlington, S. C., a graduate of the Medical College of the State of South Carolina, Charleston, in 1885, died at his home after a long illness on November 19.

Dr. NATHAN G. RIEFF of Albion, Ind., a graduate of the Hahnemann Medical College and Hospital, Philadelphia, in 1883, died at his home on November 27, aged 53 years.

Dr. THOMAS A. BOGGAN of Tupelo, Miss., a graduate of the Memphis Hospital Medical College, Tenn., in 1896, and a member of the Mississippi State and Lee County Medical Societies, died suddenly in Mooresville on November 20, aged 65 years.

Dr. ERNEST DUVAL of Rochester, N. H., a graduate of Laval University, Medical Department, Quebec, in 1884, died at his home on November 23, aged 52 years.

Dr. EDWARD PERRY BOWLES of Wolfville, N. S., a graduate of the College of Physicians and Surgeons, New York, in 1874, died suddenly on November 19.

The Rev. JONATHAN WINGATE WINKLEY of Boston, Mass., a graduate of the Harvard Divinity School and of the College of Physicians and Surgeons, Boston, in 1894, died at his home on November 19, aged 79 years.

Dr. EDWIN F. WARD of New York, a graduate

of the College of Physicians and Surgeons, New York, in 1861, a veteran of the Civil War, having served during the latter part as surgeon on the staff of General Phil Sheridan, and a member of the New York Academy of Medicine, the New York State and County Medical Societies, and the Greater New York Medical Association, died at his home on November 23, aged 76 years.

Dr. WALTER HENRY TOBEY of Boston, Mass., a graduate of the New York Homeopathic Medical College and Hospital in 1874, a former president of the Massachusetts Surgical and Gynecological Association, and a member of the Massachusetts Homeopathic Medical Society, died suddenly in his automobile on November 23, aged 65 years.

Dr. DANIEL MCDONALD of Glace Bay, N. S., a graduate of the Dalhousie Medical College, Halifax, in 1898, died in St. Joseph's Hospital, Glace Bay, after an operation for appendicitis, on November 16, aged 45 years.

Obituary.

EDWARD CURTIS, M.D.,

NEW YORK.

Dr. EDWARD CURTIS of New York, emeritus professor of materia medica and therapeutics in the College of Physicians and Surgeons, died at his home on November 28. Dr. Curtis was born in Providence, R. I., in 1838, and was graduated from Harvard College in 1859. He then began his medical studies at the College of Physicians and Surgeons, forsaking them to enlist in the United States Army on the outbreak of the war. He was finally graduated from the Medical Department of the University of Pennsylvania in 1864, and was appointed to the Army Medical Museum, where he developed the art of photomicrography. In 1870 he returned to New York and in 1878 was made professor of materia medica in the College of Physicians and Surgeons, an office which he relinquished in 1886 when he was made emeritus professor. From 1878 to 1904 he served as medical director of the Equitable Assurance Society of New York. He was the author of many scientific treatises and a member of the American Association for the Advancement of Science, and the New York State and County Medical Societies. Together with Dr. Woodward of the Surgeon-General's staff he performed the autopsy on President Lincoln in 1865.

Correspondence.

THE FUTURE OF THE DOCTOR.

TO THE EDITOR OF THE MEDICAL RECORD:

SIR:—The article by Dr. Dixon in a recent issue of the MEDICAL RECORD, and the prophetic address of Dr. Dana at the New York Academy of Medicine upon a kindred subject, are both timely reminders that the outlook of medicine as an agreeable and sufficient means of support is not inviting, and the writer is prompted to refer to what he thinks most medical men will accept as an explanation of the present demoralized condition of our calling. Most of this change in prosperity, it must be admitted, is due to ourselves alone, and the decline began at least two or three decades ago, for it has kept pace with the abuse of hospital and dispensary work, and the grinding out of a host of young medical men without much heed of the kind or extent of their education by second rate colleges. The profession, here as elsewhere, therefore, is overcrowded, and commercialism has resulted from this to a large extent.

As matters now stand, with the exception of those of us who are engaged in research work, teaching, or operative surgery and do not ordinarily practice, the rest are treated with scant courtesy or consideration by a half educated or credulous public who have gotten to prescribe for themselves, easily finding a panacea in the form of a patent medicine, or convenient tablets upon the shelves of the first accessible druggist. Some of this is due to the complete abandonement of prescription writing by the doctor of to-day and some to the lowering of his dignity and undue familiarity and unwise confidences.

Again the widespread paternalism which is closely connected with sensation or muck-raking, leads to the *superficial* education of the mob. More than one quackish individual with the literary style of the man on the end of the cart utters ridiculous warnings to the hypochondriac or interprets pseudoscience for an evidently substantial consideration. Congresses and semi-popular gatherings provide food for the idle curiosity of the morbid and introspective and upon one occasion lately the crowd amused itself by playing with psychological instruments of precision which should have been kept in the laboratory. Truly a little knowledge of a certain kind is worse than none at all.

Again through the abandonment of the family physician, whom Dr. Dana evidently believes to be extinct or about to become a thing of the past, the curious patient through the advice of meddlesome friends often without any medical advice whatever seeks the last new medical or surgical cureall. The writer has even known of a patient suffering from tabetic crises who has had four surgical operations performed by four eminent surgeons within a few years, the first being "for the removal of hemorrhoids;" the second entailing the enucleation of one testicle; the third the division of the sphincter ani and the levator ani muscles; the fourth, a reparative one by a competent and intelligent surgeon, was alone justified. A good family physician would have obviated all this blundering and cruelty. Equally useless and dangerous and expensive operations have been made by others under the same circumstances. In these days of progress and independence, amateur physicians dose each other with poisonous tablets, making their own diagnoses without medical help, and the broker's office, the club, or other places become convenient consulting rooms. There seems to be no trouble in buying tablets by the dozen or thousand, and it is rare that any entry is made in the pharmacists' poison record book.

Under these circumstances it is pleasant to hear the wise and venerable Doctor Jacobi uttering a small word of hope and deploring the existing situation. While the much abused family physician is now neglected, he will exist despite his present unpopularity; and the fight should be made by all of us against the vulgarization and popularization of the art of healing and the superficial propagation of false science. Perhaps the family physician who is so often forgotten by those he has brought into the world and carried through critical periods of suffering, will again take up his work as the valued counsellor and guide when special help is needed, for he certainly has a noble place that can-

not be usurped by quacks or charlatans, and the day of the extreme faddist or dilletanti cannot last forever.

AN OLD DOCTOR.

NEW YORK.

DR. WHITMAN'S REMARKS ON THE ABBOTT METHOD OF TREATING LATERAL CURVATURE OF THE SPINE.

TO THE EDITOR OF THE MEDICAL RECORD:

SIR:—In the discussion of the Abbott treatment before the Clinical Congress of Surgeons, it was my purpose to present a record of actual experience. It was stated that this experience did not support Dr. Abbott's claims that fixed lateral curvature of the spine could be more easily cured than club-foot or bow-leg, nor that the correction of the deformity could be completed in three weeks. Many cases could not be cured, and correction or even improvement usually required months, rather than weeks, of treatment. There were also certain inevitable discomforts, inconveniences, and even dangers in the treatment which should be recognized by the surgeon and patient before the treatment was undertaken. Having enumerated the limitations in the scope and efficiency of the method, its advantages were presented in the following words: "Cases may now be improved or cured that formerly were not susceptible to improvement or cure, indicating not only the greater efficiency of the method, but that the changes incidental to deformity are less resistant than has been believed. It has been proved already, I think, that the underlying principle of the method is correct, namely, that, as lateral curvature is essentially a flexion deformity, rotation may be more easily reduced in flexion than in extension, and that deformity should be corrected before functional activity is permitted. When this principle is generally accepted, corrective treatment will be applied when it may be effective, and gymnastic exercises, now a futile routine, will find their proper place in the prevention of deformity and as a necessary adjunct in the after treatment."

In the report in the MEDICAL RECORD it is stated: "The corset has to be worn too long, and he felt sure that moderate lateral curvature could be reduced more easily by extension and gymnastic exercises." The reporter misunderstood me, for I did not say this, and as I believe that the Abbott method will eventually supersede such ineffective treatment, I should like to correct the misstatement and the impression made by the report, in which I seem to condemn a treatment of which I am heartily in favor.

ROYAL WHITMAN.

NEW YORK.

OUR LONDON LETTER.

(From Our Regular Correspondent.)

MEETINGS ON INSURANCE AT THE ROYAL COLLEGE OF PHYSICIANS AND IN VARIOUS TOWNS—STATEMENTS OF ADVISORY COMMITTEE AND OF NATIONAL MEDICAL UNION—AMBULANCE SERVICE—OBITUARY.

LONDON, November 15, 1912.

ON Wednesday a meeting was held at the Royal College of Physicians of London, of a joint committee of the English qualifying bodies. These are the two royal colleges, the Society of Apothecaries, and the medical faculties of the English universities. Resolutions were passed showing that in the opinion of the meeting (1) the conditions set up by the regulations of the insurance commissioners are of such a nature as to interfere injuriously with the rights and proper independence of the profession and with efficiency in the treatment of insured persons; (2) that practitioners ought not to be tried as to matters concerning professional matters by a non-professional tribunal; (3) that it would be unwise to submit to local committees so long as insured persons are in an overwhelming majority. A meeting of medical men in Dublin unanimously resolved that the latest concessions of the Chancellor are not such as to justify acceptance of service under the act as it now stands. The medical members of the Advisory Committee issued a circular in favor of trying to work the Act for three years after which revision might be sought in the light of the facts and figures accumulated. This appears to propose an easy method for Mr. Lloyd George to give way, but even if he could be trusted he may not be in office after three years. The National Medical Union, which has never wavered in its support of the cardinal points, has sent to every practitioner a criticism of the regulations pointing to the conclusion that they are "intolerable to any self-respecting medical man and would destroy forever the independence of the profession."

Resolutions to reject Mr. Lloyd George's last offer have been passed at meetings in Liverpool, Manchester, Birmingham, Oxford, Cambridge, Bristol, Plymouth, and many other places, every day seeming to bring new reports. Many are directions of divisions of the British Medical Asosciation to delegates how they are to vote at the representative meeting. As this meeting is convened for next Tuesday it is hardly worth while to speculate on what course that vote will direct to be taken.

The County Council have decided to seek parliamentary sanction to a scheme under which the Asylums' Board, the Port of London Authority, the Borough Councils, and the Boards of Guardians will unite to extend the ambulance service and render it more efficient.

The year of office of Sir T. Crosby, M.D., as Lord Mayor of London, has passed. Before retiring he gave a city banquet to a number of leaders of the profession. Sir Thomas and his daughter, Lady Mayoress, carry into their retirement the heartiest good wishes of the citizens, not a few of whom still express surprise that a man of eighty-two should have gone through the year of work with so little apparent fatigue.

The death of the well known ophthalmic surgeon, Arthur Henry Benson of London, took place on the sixth inst. He graduated in arts and medicine at the Dublin University, 1875-6, took F.R.C.S.I. in 1881. He was surgeon to the Eye and Ear Hospital and ophthalmic surgeon to the Royal City of Dublin Hospital. He was a son of the late Professor Benson and a brother of Sir Hawtry Benson. He contributed various papers to societies and was president of the pathological section of the Academy of Medicine, 1909-11.

Brigade Surgeon Frank Pout of the Army Medical Staff died suddenly on the 16th inst, aged 76.

Surgeon-General Alex. M. Dallas, C.I.E., has died in his eighty-third year. He entered the Indian Medical Service in 1856, was appointed superintendent of the central jail in 1859, Inspector-General of Prisons in 1863, and of Civil Hospitals in 1885. He was made a Companion of the Indian Empire in 1886.

OUR PARIS LETTER.

(From Our Regular Correspondent.)

CONGRESS OF UROLOGY—COMPARISON OF DIFFERENT METHODS OF TREATMENT OF RENAL TUBERCULOSIS—PROSTATECTOMY—IODIZED INSUFFLATIONS IN CHRONIC URETHRITIS — GALVANOCAUSTIC TREATMENT OF URETHRITIS—FOREIGN BODIES IN THE BLADDER—LITHOTRITY AND CYSTOSCOPY—NECROLOGY: PAUL LEGOND.

PARIS, October 15, 1912.

THE eighteenth reunion of the French Association of Urology was held in Paris from the ninth to the twelfth of October. The main subject for discussion was the "Comparison of the Different Forms of Treatment of Renal Tuberculosis." The symposium was opened by Léon Bernard and Heitz-Boyer. Following the labors of Albarran the majority of clinicians have resorted to nephrectomy in the treatment of renal tuberculosis. The opinion is almost unanimous that medical, including hygienic and medicinal, treatment is practically useless. Heliotherapy and radiotherapy have not demonstrated their value. There are certain physicians who would substitute for nephrectomy the use of antituberculous agents whose efficacy they extol. But the results of the purely medical or specific treatment are not entirely satisfactory. A few apparent cures are indeed to be noted, but the number of failures is large. Nephrectomy, on the other hand, produces results that are real and that justify the resort to this operation. The mortality of the latter is from one to six per cent. The value of this form of surgical intervention is as remarkable as is its benignity. Nephrectomy rescues from speedy death four-fifths of the individuals suffering from renal tuberculosis. Besides, those that survive remain completely and permanently cured. The conclusion of the speakers was that, excepting in cases in which the performance of nephrectomy is impossible, this becomes the operation of choice as soon as the diagnosis is made.

Opposed to this conclusion were the following: Castaigne of Paris, Le Fur of Paris, de Keersmaecker of Antwerp, Leclerc-Dandoy of Brussels, and Péchère of Brussels, who had obtained by means of medical treatment, chiefly by the use of tuberculin, extremely satisfactory results. But the large majority of urologists who took part in the discussion were in favor of nephrectomy. Léon Bernard, who closed the debate, stated that whereas the use of tuberculin caused an improvement in the tuberculous process in the kidney it did not lead to a complete cure. Proof of this statement was afforded by the observation that in many instances following tuberculin treatment the removal of the affected kidney revealed the presence of the tuberculous process which had never been influenced by the specific treatment.

The subject of prostatectomy gave rise to an interesting discussion. Castaigne and Lavenant have shown that prostatectomy has a beneficial influence upon concomitant chronic lesions of the kidneys. Marion favored the use of tamponade in suprapubic prostatectomy. The advantages of this procedure are first, the prevention of nervous hemorrhage, so that the patient is able to stand the operation better; secondly, it is possible to wait three or four days before dressing the wound, for there is no risk of a clot obstructing the tube. Occasionally the tampon causes an elevation of temperature.

Hamonié of Paris described an interesting procedure, namely, the treatment of chronic urethritis by means of iodized insufflations. The instrument consists of a sound containing a tube which carries the iodized vapors. These escape through windows in the wall of the sound. The return flow for the vapors is through the space between the sound and the inner tube.

The galvanocaustic treatment of chronic urethritis was favored by Georges Luys of Paris. The advantage of this method of treatment consists in the fact that it permits the complete destruction of the chronic foci. In an elaborate paper the speaker discussed the indications and contraindications of this method of treatment, the operative technique, the accidents that may occur, and the results of this procedure.

The subject of foreign bodies of the bladder was studied from the therapeutic viewpoint by Hasse of Liege. He reported the case of a woman forty-eight years of age, who, as the result of sexual perversion, had introduced into the bladder during the course of one year seventy-five foreign bodies, including the following: buttons of all kinds, hairpins, celluloid pins, safety pins, a nickel cross, coins, etc. These objects were removed quite easily through the greatly dilated ureter. Vincent, of Paris, reported the case of a girl, aged nine years, who had introduced into the bladder two hairpins, which, hooked together, were surrounded by a vesical calculus. The entire mass was easily removed by the hypogastric route.

Georges Luys of Paris emphasized the necessity of controlling by means of the cystoscope the complete evacuation of the fragments produced by the lithotrite. He insisted upon the close alliance between lithotrity and cystoscopy. Phosphatic calculi of the bladder may be removed with the aid of Luys' direct vision cystoscope. In fact, phosphatic calculi which give rise to a painful cystitis, are often soft and may be easily removed with the aid of a pair of forceps introduced through the cystoscope.

Paul Legond, clinical professor at the medical school of the University of Paris, has just died suddenly at the age of sixty-one years, in consequence of a severe attack of uremia. He was recognized in France as one of the foremost gynecologists. He had mastered the details of operating by the vaginal route and he had shown to the profession the advantages of Péan's operation. He had perfected the operation of morcellation of fibroid tumors and their complete extirpation by the vaginal route. His work on ectopic gestation is still fresh in the memory of all obstetricians and gynecologists. Paul Legond was one of the most brilliant professors in the medical faculty. Every one admired his countenance, at once energetic and soft, commanding and smiling. His tall stature and his powerful chest impressed one with the power that went hand in hand with the exuberance of his life. He was an eloquent speaker. This quality he demonstrated admirably when he presided last year at the surgical congress in Paris. Above all, he was kind to his pupils and to his patients. All who came in contact with him felt for him a peculiar veneration, for he had a sympathetic heart and knew how to find in the most painful moments the words that console and the smile that brings comfort.

Progress of Medical Science.

The Boston Medical and Surgical Journal.

November 21, 1912.

1. Syphilis: The Story of Its Treatment Old and New. Andrew F. Downing.
2. Difficulties in Interpreting the Significance of Regional Muscle Rigidity and Degeneration about the Thorax: Diagnostic Limitations. J. L. Pomeroy.
3. The Importance of the Early Recognition of Suppurative Otitis Media. Phillip Hammond.
4. Survey of the Tuberculosis Situation in Massachusetts. John B. Hawes.
5. Pellagra in Rhode Island. Arthur H. Harrington.

2. Difficulties in Interpreting the Significance of Regional Muscle Rigidity and Degeneration about the Thorax.—J. L. Pomeroy points out that there is a complex mechanism in the causation of muscle rigidity and degeneration about the thorax, that there is the possibility of neuritis with localized conditions resulting from this lesion, a mechanical influence exerted upon the nerves of the mediastinum, and that segmental symptoms from the lungs are not specific for the lungs alone, but may be brought into play by aortic, cardiac and pericardial changes, and changes in other structures in the thorax. There is no doubt but that bronchial gland enlargement may give the same picture from a reflex standpoint as pulmonary tuberculosis. The conditions which obscure the diagnostic importance of muscle spasm and degeneration may arise from various lesions in the mediastinum, bronchial, adenopathy, aneurysm, pericarditis, new growth, cardiac disease, emphysema, asthma, etc. Again it may be a residual of former inflammatory condition of the pleura or lungs. It may occur from irritation of the pneumogastric, sympathetic, phrenic, or spinal nerves from lesions not in connection with lung tissue at all, but occurring at or near the nerve origin. Differences in development, occupation, posture, habits, deformities, age, nutrition, and certain diseases also obscure the picture. Rheumatic affections of the shoulder joint, particularly in the one known as arthritic neuritis with circumflex disturbance, result in marked changes in the tone and feeling of muscles in this region. Therefore, it must be concluded that muscle spasm and degeneration as a sign of pulmonary tuberculosis is to be interpreted only with extreme care and is of but suggestive value in a case of real doubt. From a diagnostic standpoint as to the presence of intrathoracic disease, muscle spasm and degeneration is as definite a sign of those processes as a similar phenomenon in the abdomen. In the hands of the expert clinician the muscle changes over the thorax give reliable information that inflammatory changes or pathological processes are to be found in the thorax, provided there is nothing in the peculiarities of the individual which could otherwise satisfactorily account for the signs. For accurately localizing the lesion in the lung or thorax these signs are of very variable significance.

New York Medical Journal.

November 23, 1912.

1. Acute Poisoning. Edward C. Hill.
2. The Relation of Pregnancy to Certain Conditions of the Digestive Organs. A. L. Benedict.
3. The Teaching of Pulmonary Diseases. John B. Huber.
4. The Insurability of Women. T. Hewson Bradford.
5. Air Impurities. Charles Baskerville.
6. Ten Sex Talks to Girls. Irving David Steinhardt.
7. The Use of Mixed Infection Vaccines in the Treatment of Myalgia and Arthritis. R. E. Brenneman.
8. Therapy of Syphilis. J. L. Mortimer.
9. The Value of Meteorism or Tympany in Peritonitis. Budd Van Sweringen.

2. The Relation of Pregnancy to Certain Conditions of the Digestive Organs.—A. L. Benedict thinks that the vague digestive disturbance known as morning sickness, in its most typical form, is probably a reflex motor phenomenon, due to the accumulation of saliva and mucus, there being no ischochymia, continuous secretion of true gastric juice containing hydrochloric acid by an empty stomach or evidence of fermentation. True hyperemesis gravidarum is obviously a gastric reflex rather than a genuine digestive disturbance. Yet lavage may be effective just as it sometimes is in obstinate singultus, by inducing local fatigue, mental impression, etc. The author discusses the mechanical features of pregnancy, especially with reference to enteroptosis, and says that none of the ptoses seems to depend materially upon uterine ptoses, including prolapse, procidentia, flexions, and versions. But this admission does not imply a disbelief in the harmful effects of pelvic displacements due to perineal defects or other conditions. The portal circulation is impeded, congestion tends to cause faults of secretion and absorption, hence fermentation and putrefaction tend to occur in excessive degree; colon bacillus virulence plays a large rôle in gallstones and pancreatic disease, while indol has been shown experimentally to cause hepatic sclerosis. While the relation of lacerated perineum to alimentary cancers, ulcers, achylias, etc., is far fetched, it may, nevertheless, be genuine. The author concludes with an appeal for immediate repair of the perineum whenever possible, and for secondary repair as soon as possible, certainly before marked atrophy has taken place.

7. The Use of Mixed Infection Vaccines in the Treatment of Myalgia and Arthritis.—R. E. Brenneman says that the term rheumatism has deservedly fallen into disfavor. The bacterial theory of the etiology of disease has led to a recognition of the true cause or causes of so-called rheumatism. The author emphasizes the desirability of a correct differentiation of the causes and seat of bodily pain, of making a correct diagnosis and then of using a definite and correct onomatology. A muscular pain should be called a myalgia and should be named so as to determine its location. If a joint is affected arthritis is the term to be employed. The term rheumatism is redundant, unnecessary, and unscientific. Schafer's theories appear probable, rational, and scientific. Of the value of serum therapy and vaccine therapy in proper cases there is little dispute. There are many different bacteria concerned in the causation of certain infective diseases and it therefore seems reasonable to use a vaccine composed of various strains of bacteria. He has, therefore, used such a vaccine in 11 cases—9 of arthritis, 1 of puerperal sepsis, and 1 of pneumonia. Great relief followed the vaccine treatment in all the cases of arthritis. The result in the case of puerperal sepsis was marked and very suggestive. In the case of pneumonia, it seemed from a study of the chart that after the first fall in the temperature, the subsequent injections held the disease in check and hastened the crises in the subsequently involved lobes.

The Journal of the American Medical Association.

November 23, 1912.

1. Chemistry of Inhalation Anesthetics. Charles Baskerville.
2. Spinal Anesthesia. Freeman Allen.
3. American Statistics. James T. Gwathmey.
4. Post-Operative Mortality from Anesthetics. Albert H. Miller.
5. The Limitations of Nitrous Oxide with Oxygen as a General Anesthetic. Charles K. Teter.
6. Helps in Surgical Anesthesia. Joseph E. Lumbard.
7. Spinal Analgesia. William Seaman Bainbridge.
8. Anesthesia by Pharyngeal Insufflation. Frank Wilcox Pinneo.
9. Some Reasons for Surgical Failures in Children. Le Grand Kerr.
10. Modification of the Ferguson Open Drop Method Ether-Inhaler, and Mode of Etherization. C. E. Prudden.
11. Nitrous-Oxide Oxygen Anesthesia with Report of a Fatal Case. Moses Salzer.
12. Resuscitation from Drowning: Continued Persistence of Heart Beat; Death from Non-Resuscitation of the Respiratory Centers. Frederick Wade Hitchings.
13. The Ability of Mothers to Nurse Their Children. J. P. Crozer Griffith.
14. Supplemental Breast Feeding in Infants. H. M. McClanahan.
15. Some Cases of Hysteria Presenting Symptoms Usually Only Found in Organic Diseases. Beverly R. Tucker.
16. The Reciprocal Influences of Morbid Conditions of the Mouth, Jaws and General Economy. M. L. Shambers.
17. Temporary Toxic Amaurosis and Paralysis Following Injection of Ethyl Alcohol into a Chronic Empyema Sinus. Louis Friedman.
18. Cystoscope Holder. Henry Dawson Fyrniss.
19. Penetrating Abdominal Wall Wound by Revolver Bullet, Complicated by Twenty-two Intestinal Perforations; Operation and Recovery. A. Belcham Keyes.

7. Spinal Analgesia.—William Seaman Bainbridge

reviews the history of spinal analgesia and enumerates three general classes of solutions employed. First, the so-called "diffusible" solution employed by Babcock, in which alcohol is used to render the fluid lighter than the cerebrospinal fluid. To the second class belong the simple solutions of the analgesic agent with water, with water plus the cerebrospinal fluid, with cerebrospinal fluid alone, or with normal salt solution. To the third class belong the so-called "non-diffusible" solutions, which are rendered heavier than the cerebrospinal fluid by the addition of glucose, dextrine, or gum arabic. In 988 cases solutions of the second class were used, and in 500 of these cocaine was used. He now uses stovain or tropacocaine, but does not hesitate to employ cocaine. In the whole series there was one death probably due to "status lymphaticus." One case of temporary partial paralysis occurred, one of failure due to so-called dry spine, two cases with alypin in which there was considerable respiratory depression, and one where failure was apparently due to idiosyncrasy. The author reports illustrative cases in which the three different solutions were employed, and describes the apparatus, and the technique of administration. From the facts known it may be deduced in a general way that the indications for spinal analgesia are the contraindications for inhalation anasthesia. A person in marked shock or profoundly septic condition should not be subjected to this procedure. The real objections to the method are: (1) The operator is absolutely committed to the dose, whatever it may be. It can be increased by another injection, but it cannot be decreased. With the changes in the position of the patient, and with carefully graded dosage, control can be exercised. (2) In prolonged operations the analgesic effect may pass off before the operation is completed. In some cases, as in laparotomy, it is quite inconvenient to turn the patient over for another injection. This is not a procedure for the surgical novice and must continue to occupy a somewhat limited sphere until we know more of the physiological action of the agents employed and of the dosage required in order to obtain the desired results.

16. **The Reciprocal Influence of Morbid Conditions of the Mouth, Jaws, and General Economy.**—M. L. Shamberg emphasizes the influence of the unhygienic mouth as an etiological factor in systemic disease. The tongue has always served as a barometer of the physical condition of the patient but far too frequently the inspection of the mouth ends with the tongue. It is really unusual for physicians to make careful observations of the mouth as a whole, to determine the presence of lesions on the mucous surface of the cheeks, the floor of the mouth beneath the tongue, the palate, the gingival margins of the gums, or the roof and floor of the vestibule of the mouth. These parts give even greater information at times than do the tongue and lips. The influence of the mouth and jaws on the general economy and likewise the influence of the general economy on the condition of the mouth have not received the attention that they deserve. According to a list prepared by Edward H. Baker, 125 different affections have been traced by scientific men to dental and mouth disorders. The bearing that the mouth has on the general organism is governed by its ability to perform its normal function in preparing the food to be introduced into the system. A failure in any measure to live up to its contract in this particular is accompanied by disturbances further on in the process of digestion. Many reflex disturbances are also due to maxillary or dental abnormalities. The author promises to supplement this communication with one that will be more clinical in its nature.

17. **Temporary Toxic Amaurosis and Paralysis Following Injection of Ethyl Alcohol into a Chronic Empyema Sinus.**—Louis Friedman reports a rather unusual case of temporary paralysis and amaurosis following the injection of ethyl alcohol into an empyema sinus. The patient had received previous injections of 95 per cent. alcohol without untoward symptoms, but suddenly after one of the injections became limp and unconscious for a few seconds, both upper and lower extremities being paralyzed. Loss of vision was complete but cutaneous sensation was present. The patient's mind was clear, speech was normal, there was no cyanosis, the pupil reaction was normal to light, and the knee jerks were exaggerated. Motion slowly returned and the paralysis disappeared entirely in half an hour. The vision slowly improved and was perfect in about three days. Friedman has been unable to find any record of pure ethyl alcohol amaurosis.

The Lancet.

November 16, 1912.

1. Inaugural Lecture. The Modern Combat against Tuberculosis Among Children. Professor Nietner.
2. Post-Graduate Lecture. Motor and Speech Paralysis Due to Cerebral Angiospasm. William Russell.
3. On the Respiratory Neuroses. Samuel West.
4. Remarks on the Treatment of Sarcoma of the Long Bones. Frederick Eve.
5. Results of Complete Removal by Operation of the Transplanted Mouse Cancer. C. E. Walker.
6. On the Duty of the Practitioner in Cases of Ophthalmia Neonatorum. Sydney Stephenson.

2. **Motor and Speech Paralysis Due to Cerebral Angiospasm.**—William Russell calls attention to the fact that this spasm lead to a constriction of the lumen of the blood vessels and may be sufficiently pronounced to practically obliterate the lumen. The degree of spasm therefore determines the measure of the anemia of the affected area, and this again determines the intensity of clinical phenomena, whether it be complete or partial loss of motor power, or of sensibility; while the portion of the brain affected determines the character of the phenomena, whether motor, sensory, or mental. As the spasm tends to be temporary and evanescent so the phenomena resulting tend to be evanescent. It is the anemia which is the cause of the phenomena, not the vessel spasm *ipso facto*. The causes of the spasm may be heat, cold, or nerve influences. In addition there seems to be no doubt clinically that waste substances retained in the blood act thus upon the blood vessel wall, causing paralyzing action on the muscle tissue of the wall. The two factors to be kept in mind in dealing with the individual case are: (1) the probable condition of the blood vessels, and (2) the driving power of the left ventricle. The anemia may be determined by atheroma or obliterative endarteritis associated with a feeble heart. Russell cites an illustrative case and shows how important it is to understand the condition and to treat it by stimulation rather than to regard it as a case of high blood pressure with threatening hemorrhage and to use relaxing and depressant treatment. He calls attention to the association of migraine and temporary paralysis which has been credited to a temporary anemia. The association of motor paralysis and aphasia is the commonest type and forms the largest groups of cases. The group illustrates angiospasm in cerebral vessels affected by either angiospasm or obliterative endarteritis. He then considers transitory hemoparesis, citing several illustrative cases which support his contention that these temporary paralyses have an evanescent cause and that the only reasonable explanation is the one he has offered. The site of the angiospasm is very frequently in the great motor pathway, in or above the internal capsule. A historical sketch of the subject is given which the writer thinks supports his contentions by showing that others offered the same explanation of the phenomena as he has offered. He expresses the hope that the practical importance of the subject will be recognized and that at some future time he may deal with its more speculative aspects.

3. **On the Respiratory Neuroses.**—Samuel West points out the difference between ordinary quiet breathing and deep or forced breathing. When told to take a deep breath the movements are entirely altered, cease to be abdominal, and become entirely costal; in other words, the automatic center is inhibited and the control taken over for the time being by the voluntary centers. The neuroses of the respiratory organs fall into two groups, according as they are, or are not, associated with, or lead to, dyspnea and its consequences, viz., cyanosis and suffocation. In the first group those with dyspnea and cyanosis are found asthma, laryngismus stridulus and other laryngeal spasms, and whooping cough. In the second group, in which there is no interference with the aeration of the blood and consequently no cyanosis or suffocation, are found paroxysmal tachypnea, the air hunger of diabetes mellitus and the allied condition in uremia, and in the third are found grouped respiration and Cheyne-Stokes breathing. A consideration of the respiratory neuroses in each of these conditions leads to the same conclusion, namely, that it is not the respiratory center in the medulla that is at fault, but some higher coördinating centers possibly in close relation with the other centers of volitional action, and therefore, presumably, in the cortex of the brain. In this connection the physiological considerations set forth in the article are of importance. It is obvious that a view of this kind is likely to modify considerably the lines of treatment to be adopted.

British Medical Journal.

November 16, 1912.

1. An Address on the Duties of the State in Regard to Tuberculosis. Arthur Ransome.
2. Tuberculosis in General Practice. J. A. Gibb.
3. Reflections on the Importance of Toxin Saturation of Tissues. Edward E. Prest.

1. **Duties of the State in Regard to Tuberculosis.**—Arthur Ransome does not think that the State should undertake the treatment of disease. It should rather turn its attention in the direction of prevention. The result of other enterprises undertaken by the State do not hold out any promise that State officials could succeed in the treatment of tuberculosis as well as do at present the several voluntary agencies. A report of the Poor Law Commission, which concludes with the statement that "from first to last the outdoor medical service of the Poor Law has no conception of the public health point of view," is evidence of this statement. Much the same conclusions are reached when the indoor treatment of paupers by the State is considered. The case is entirely different with regard to the public health service. No fault can be found with the work of its officials and this is because the State here is attending to its legitimate business, not the cure, but the prevention of disease. He then proceeds to show that the plans set forth under the Insurance Act for the care of tuberculosis are equally destined to fail, and that it is important that the subject be seriously dealt with by medical critics before the funds assigned for the purpose are in the process of being squandered. The duties of the State in regard to prevention are three: 1. It can take practical measures to abolish the bacillus. 2. It can improve the physical condition of the people so as to diminish their susceptibility to the disease. 3. Most important of all, it can so amend the favorite haunts of the disease as to destroy its power for evil. As to the first, many measures have been suggested, such as compulsory notification, penalizing spitting, gratuitous examination of sputum, disinfection of dwellings, clothing, etc. All of these measures may be more or less useful, but at best can only remove some of the sources of infection, leaving others still untouched. The problem of lessening the susceptibility to infection can be solved by solving the third proposition, by abolishing the haunts of the bacillus. This can be done by the provision of healthy homes, by proper drainage and water supply, by better provision for ventilation, doing away with courts and blind alleys, by limiting the height of buildings, by mitigating the pollution of the air as far as possible. Attention must be directed not only to the ventilation of schools, but to that of all public resorts. The State would also be within the scope of its legitimate action, Ransome maintains, if it provided for the dangerous cases of open tuberculosis, if it subsidized homes for the dying and tuberculosis dispensaries, and if it assisted in the formation of herds of cattle free from disease.

3. **Importance of Toxic Saturation of Tissues Considered in Relation to the Treatment of Pulmonary Tuberculosis.**—Edward E. Prest says that where a tuberculous infection shows such a degree of activity, or the body tissues as a whole yield an insufficient amount of antibody, then the healthy tissues arrive at a condition which he calls toxin saturation; no antibody can be produced, and the toxin circulating the system will assist the activity of the bacilli, the disease will spread rapidly, and death speedily follow, unless means are at once taken to counteract this condition, and produce once more a condition of hyposaturation. Such a state of affairs does not occur in tuberculosis attacking relatively immobile tissue. From this it follows that means of determining the condition of the tissues with reference to saturation by toxin will be of enormous importance. The most important method is an accurate record of the temperature taken in the rectum; the patient should be kept in bed for this purpose. If it is found that the temperature taken before rising in the morning is above 97.7° F. the tissues are approaching a condition of toxic saturation; or, if the temperature during the day, when the patient is at rest in bed, rises higher than 99.4° F., the same conclusion may be arrived at. In cases where the disease is only slightly active, where almost all the toxin is neutralized by the tissues at the seat of the disease, although the temperature may almost constantly deviate from the normal, yet the remaining tissues of the body may be considerably removed from saturation by toxin. The symptoms of saturation are the classical symptoms of pulmonary tuberculosis. A temperature such as the above indicates that the balance has been restored, but gives no indication of the capacity of the tissues to deal with the toxin. If a little exercise on the previous day causes a rise in the morning temperature the tissues are nearly saturated; if considerable exercise does not affect the temperature, it follows that there is no approximation to tissue saturation. The degree of saturation may also be determined by the administration of tuberculin. If a small dose causes a rise in temperature in a case where the temperature was previously normal, it may be assumed that tissue saturation is nearly complete. If the patient be near toxin saturation, the activated tuberculin, even if the dose be small, may stir up tuberculous foci. In the treatment of pulmonary tuberculosis by tuberculin, one may begin with small doses if the rectal temperature is as stated above, and exercise does not cause a rise in temperature; in cases commencing with hemoptysis without previous symptoms; in the so-called early cases which are slightly febrile, after rest in bed and sanatorium treatment until the temperatures become normal; in cases of considerable duration where, owing to fibrosis and highly resistant tissues, toxic saturation is not complete; in cases with extensive disease where a considerable degree of toxic tolerance had been produced. In cases exhibiting a large amount of caseous disease small doses may be given and repeated at intervals of at least a week in order to avoid ulceration of large masses of diseased tissue. The prevention of toxic saturation in early cases, Prest says, is of paramount importance.

Berliner klinische Wochenschrift.

November 11, 1912.

The Great Epidemic of Typhus in Napoleon's Russian Campaign.—The outbreak of typhus in the present Balkan-Turkish campaign naturally arouses interest as to the possibility of duplicating some of the great epidemics of past wars. At a recent session of the Berlin Society for Social Medicine, Hygiene and Statistics Prinzing gave a brief retrospect of the epidemic of 1813 in which Napoleon's defeated troops and allies scattered the pestilence through Western Europe. The Russian army alone lost 62,000 men and of the 30,000 or more French prisoners nearly all but ten per cent. died of typhus or exposure. The Jews of Wilna and vicinity lost by death over sixty thousand. The disease soon reached Prussia, destroyed eight thousand in Danzig, and nearly as many in and around the metropolis. As the war continued about Leipzig and Dresden the pestilence followed and the French losses are placed at 80,000 (whether those of the Russian campaign are herein included does not appear). The continuance of the campaign into 1814 was responsible for further ravages of the German states, so that when all was over Prussia alone had lost 200,000 inhabitants in the two years. The malady was at that time but little known, as its autonomy was first recognized in 1810. It was not even known whether isolation would be of service or the reverse. As comment on the preceding one might mention the possible effects of typhus in thwarting the ambitions of Napoleon were it not for the fact that his antagonists suffered equally in this respect. In the Franco-Prussian war the poorly vaccinated French lost 200,000 people from smallpox, while the well-vaccinated Germans largely escaped. The influence of a pestilence in a war will depend entirely on whether one, both or neither army has the ability and willingness to profit by the latest discoveries in sanitary science.

Metastatic Cancer of the Skin.—Askanazy discusses especially the relationship of these growths to the cutaneous nerves. The problem is a new one, for the author knows of no antecedent finds. The primary cancer was seated in the breast and was not highly malignant, being an example clinically of so-called Reclus's disease. Not until affected by some severe constitutional symptoms did patient seek medical aid. The breast was amputated, but patient survived but a few months, dying of cachexia. From the outset she had presented some cutaneous nodules which appeared in crops with disturbance of sensation. These lesions were well disseminated over the entire surface with exception of the extremities. The average size was that of a pea. In certain regions the lesions were grouped and there was no bilateral symmetry. The patient could predict through the sensory disturbances when and where a new nodule was to come, this declaration being frequently corroborated by the author. The diagnosis lay between cancer metastases and a primary cancerous dermatosis. Trial excision left no doubt as to the cancerous nature of the formations. Autopsy showed local recurrence of cancer in the breast and innumerable visceral metastases. The case being therefore one of extreme carcinosis, the other feature of interest was the peculiar implication of the sensory nerves. Elaborate histologic study left no doubt that the skin metatasis was not of the common kind but had actually occurred in the cutaneous nerves.

Severe Cerebral Symptoms in Consumptives Without Anatomical Finds.—Querner describes two such cases. The first was in a male aged 20 without familial taint who had recently begun to cough and emaciate. He was an alcoholic. The chest showed movements of normal excursion limits, but there were evidences of apical and laryngeal disease and tubercle bacilli in the sputum. The other viscera were intact. Temperature rose at times to 39° or 40° C. The cerebral symptoms began with frightful dreams followed by confusion. Kernig's sign appeared and persisted, but all other evidences of meningitis, including results of lumbal punction, were negative. Mental state attended off and on by confusion and hallucinations. Death evidently resulted from exhaustion. Up to the last tuberculous meningitis could be excluded, although a meningeal syndrome had been suggested. Autopsy revealed, in addition to the ordinary local tuberculous finds, degeneration of the myocardium. The author saw another case with meningitic-paralytic symptoms, which upon autopsy presented no serious endocranial lesions. There had been a doubtfully positive Wassermann reaction. The author finds cases parallel to his own in recent French literature, ascribed to the action of tuberculous toxins and termed "encephalopathie tuberculineuse."

Cinchona Alkaloids and Corneal Anesthesia.—Morgenroth and Ginsberg describe the anesthesia of the cornea produced by quinine, hydroquinine, and ethylhydrocuprein. All of these cause total anesthesia of the rabbit's cornea. The solvent was water and also for the last named synthetic olive oil. The salts used were chiefly the chlorides. While quinine is but slightly soluble in water, the other two are so freely soluble that highly concentrated solutions are readily prepared. Twenty per cent. solutions produce an extremely protracted anesthetic effect perceptible for more than a week. But these substances will hardly come into practical use because of the discovery that solutions stronger than 2.5 per cent. have been seen to cause corneal opacities. In some cases this is transitory. High concentration also causes chemosis and in general the irritant action will make these salts so unsafe that they will hardly be thought of seriously as corneal anesthetics.

Münchener medizinische Wochenschrift.

November 12, 1912.

Acute Alcoholic Amblyopia.—Kaiser reports a case of this rare affection which from its very nature must always at first cause a suspicion of accidental wood alcohol poisoning. Patient, who was aged 53, had consumed enough spirits to produce delirium and hallucinations, with tremor. His visual hallucinations were, however, peculiar in that they showed some defect of perception. White, blinding snow appeared dark and dirty, and when looking on plain white paper he saw colors and objects. When he had slept off his cerebral symptoms he developed polyneuritis, while his visual perceptions still remained abnormal. Neuritis optica could readily be excluded. The patient had drunk up nearly four marks' worth of spirits, so that all his symptoms had been acute; however, he contradicted himself several times as to his consumption of liquor and probably did not know himself what he had taken. He remembered than everything had grown dark to his vision save for flashes of light, like fireworks. The visual field was now tested and found to be strongly contracted concentrically without central scotoma. It gradually improved and attained a limit for white, but was still improving for colors. At this juncture for some unexplained reason the delirium and hallucinations returned to some extent, but again subsided. The condition was markedly unlike chronic alcoholic amblyopia in which central scotoma is present. Some of the grain spirits which the patient consumed was tested for wood alcohol with negative result. The author regards the condition as due to sudden damage of the opticus fibers by drinking a very large amount of spirits within a short time. Visual acuity was not permanently affected and the prognosis for ultimate recovery for color perception is good.

Rare Cutaneous Manifestation in Renal Insufficiency.—Portig relates the case of a woman aged 41 who had begun to show a syndrome comprising nausea and vomit-

ing, diarrhea, anorexia, and violent headache with later anxious states and confusion, and eventually apathy. Physical examination revealed very little outside of the vascular system and urine. There was some angiosclerosis and cardiac enlargement and albuminuria with cylinders. The urine was also reduced in bulk. Venesection was practised for impending uremia. The cutaneous phenomenon which bore directly upon the defective excretion of urine consisted of a sort of sudamina on the face associated with hyperidrosis. The skin looked as if sprinkled with snowflakes. This appearance was evidently due to the formation of crystals, a so-called crystalline desquamation. This was found to be urea. There could be no doubt that the latter had actually escaped by means of the perspiration. The case illustrates the wisdom and necessity of stimulating the flow of the latter in threatened uremia.

Deutsche medizinische Wochenschrift.

November 12, 1912.

A Combination Therapy of Pernicious Anemia.—Brieger states that in association with Trebing he had made the discovery that in many cases of cancer, both operated and non-operated, he, by giving pancreatin inwardly, had brought down the previously high antitryptic index to normal, while there was a corresponding improvement in appetite, general condition and weight. But in some cancerous patients pancreatin had the opposite results and increased the index. At that time it was suggested that for tuberculosis one might combine a pancreatin cure with a tuberculin cure. During the past three years the author has also sought to treat pernicious anemia with a combination of pancreatin and arsenic, and A. Pinkuss has recently mentioned Brieger's work in this direction. The arsenic is given as Fowler's solution, two drops thrice daily, to be increased and then diminished in the usual fashion. The pancreatin was given three times daily before meals, as much as could be taken up on a knife blade. The author cites in detail three cases of pernicious anemia thus treated; all improved notably. One patient has been under the treatment three full years and is still alive. Cures for this malignant affection are not claimed, but the lives of the two other patients were undoubtedly prolonged. The author believes that pancreatin is a catalysator which should enjoy a larger field in internal therapeutics.

Döhle's Leucocyte Inclusions in Scarlatina.—Kretschmer publishes the following conclusions concerning these formations: They are present in all recent cases of scarlatina, and are to be found but seldom in other affections with exception of diphtheria and sepsis in which they occur with some frequency. Their presence possesses considerable diagnostic significance in scarlatina because they do not occur to any extent in the conditions which resemble the latter. They are in no sense causes or inciters of the disease, and since they are not specific doubtlass represent only a reaction-product of the leucocytes to the disease toxins.

Dissemination of Diphtheria and Lepra by Means of the Feces.—Delbanco cites a number of recent publications involving the transmissibility of certain diseases. It has recently been stated that the urine in diphtheria usually contains virulent bacteria and should always be disinfected. The author, with Haas, published recently an article on anal diphtheria, which localization, with the known entrance of bacteria from the throat, etc., into the feces, makes it imperative to disinfect these excreta as well. In this connection should be mentioned the numerous finds of lepra bacilli in the feces of lepers and to a less extent in the urine. Arning, Babes, Boeck and other leprologists have seen them in the feces. Boeck thinks the immunity of large cities to lepra may be in part due to the fact that in such centers the feces are practically destroyed. He is not certain that the future will not recognize the fecal route as the principal one in the spread of lepra. If the so-called rat leprosy should prove to be the actual disease it would doubtless be connected with the consumption by these animals of human excrement.

The Blood in Pulmonary Tuberculosis.—P. Masenti and M. Borgogno note that the cellular elements of the blood do not furnish any diagnostic criteria in tuberculosis. On the other hand, from the prognostic viewpoint, one may attach a favorable significance to a relative neutrophile polynucleosis and to a marked diminution in the number of eosinophiles and lymphocytes.—*La Riforma Medica.*

The Irritability of the Sympathetic Nervous System.—F. Boschan states that Loewi has shown that one may obtain an idea of the condition of the sympathetic nervous system in a human being by introducing a drop of a one per cent. solution of adrenalin into the conjunctival sac. In normal individuals there does not result any dilatation of the pupil. This, however, does take place in certain cases of diabetes and Graves' disease. The adrenalin mydriasis occurs only when the irritability of the sympathetic is abnormally raised. Boschan investigated this reaction in 170 cases, including healthy and sick infants. The reaction was negative in the healthy newborn, in healthy infants of various ages, in the premature, in cases of chronic nutritional disturbances, in chronic infection, in acute digestive disturbances that are not accompanied by constitutional symptoms, and in acute infections without toxic symptoms. The reaction was positive in moribund infants, in cases of enteritis accompanied by toxic symptoms, in all acute infections with toxic manifestations, and in a few chronic diseases. There is apparently a close relationship between toxic ailments on the one hand and the presence of Loewi's reaction on the other, and since in these cases there is an increased susceptibility to cocain, it is concluded that the pupillary reaction indicates an increased irritability of the sympathetic nervous system as the result of toxic conditions. The adrenalin mydriasis has no diagnostic significance. Its presence indicates always that a toxic condition is getting worse, while the disappearance of this reaction corresponds to an improvement in the clinical picture.—*Monatsschrift für Kinderheilkunde.*

Physiological Influence of Ovarian Secretion.—A. L. McIlroy states that the ovary controls the nutrition of the uterus and other reproductive organs, since removal of both ovaries causes atrophy of the muscular and glandular elements of the uterus, etc., the degree of atrophy being in direct proportion to the length of time which has elapsed since the operation. There is also a diminution in the uterine blood-vessels, and a tendency to atheroma—a condition very closely allied to fibrosis of the uterus in the human subject. Menstruation and œstrus do not occur after complete removal of both ovaries. In young animals after oöphorectomy the infantile type is maintained. Removal of the uterus, or retention of uterine secretion, does not affect the functional development of the ovaries, seeing that the elements of the ovary are well preserved after hysterectomy and ligation of the uterine horns. Retained uterine fluid does not counteract the atrophy of the uterus which takes place after removal of both ovaries. There is thinning out of the uterine wall at the point of greatest distension, and no compensatory hypertrophy has been observed. Removal of one ovary causes compensatory hypertrophy of the other in the ancestrous state. That the interstitial cells perform the chief rôle in the maintenance of the nutrition of the uterus is evidenced by (*a*) the survival of these cells in grafted ovaries, (*b*) the follicles becoming absorbed or cystic, and (*c*) the fact that no atrophy of the uterus occurs when these cells are present. The interstitial cells become functionally active during pro-œstrum, as shown by their being enlarged and their cytoplasm becoming infiltrated with a lipoid substance (in female dog). That the corpus luteum is the part of the ovary which exerts the most active influence upon the body as a whole is shown by the fact that corpus luteum extract when injected causes rise of the general blood-pressure. From the result of one experiment it was found that the ovaries do not play such an important part in the elimination of calcium as is supposed, since after castration the calcium output was increased, whereas it was diminished as the result of administration of corpus luteum extract. Removal of the ovaries in rabbits causes an increased deposit of fat in the tissues of the body.—*Proceedings of the Royal Society of Medicine.*

Insurance Medicine.

SUGGESTIONS TO MEDICAL EXAMINERS.

BY THE INSURANCE EDITOR.

FRAUDULENT PRACTICES.

The possibility of fraud and deception should be constantly kept in mind, as it is not uncommon to meet with some of the following practices:

Fraud Practised by the Applicant.—The fraudulent practices discussed in the following paragraphs are those usually originating with the applicant:

Age.—The age is understated at times by applicants in order to derive the benefit of a lower premium. Insuring a considerable number of risks for premiums computed for younger ages will involve an unwarranted loss to a life insurance company, as the premium for each life is based on the Experience Table of Mortality. If the examiner doubts the accuracy of the given age he should communicate this fact to the home office. It must not be forgotten, however, that if several men were commissioned to judge the age of a certain individual, there would almost always be a difference of several years between the highest and the lowest estimates. An examiner might, therefore, do an injustice to an applicant were he to report a discrepancy between the given and the apparent ages unless it amounts to at least five years.

Suppression and Distortion of Facts.—Suppression, as well as distortion, of facts constitutes misrepresentation, as every application for life insurance calls for a declaration in some form from the applicant that he has disclosed full and accurate information in regard to his personal and family history. According to law an undue concealment or nondisclosure of facts and circumstances which one party is under legal or equitable obligation to communicate, and which the other party has a right to know, establishes a misrepresentation or breach of warranty and will give sufficient grounds to a company to cancel the policy provided the delinquency is important enough and is discovered within a reasonable length of time after the date of issuance, a period which may be generally stated as two years. When, then, there is the slightest doubt as to the veracity of an applicant, the examiner will do a good deed to him as well as the company by intimating the extent of the possible penalty in diplomatic but unmistakable terms.

Concealment of Physical Defects.—Dishonest applicants, assisted at times by corrupt agents, display considerable inventive skill in preventing the discovery of physical impairments by the examiners. Examples of these attempts are innumerable in the history of life insurance. Space forbids a description of all of them even if it were possible. A few of the instances which have come to the writer's notice may serve as illustrations of the importance of close scrutiny in every examination.

An application was recently received in which the applicant had persisted in remaining in a sitting position during the examination, his excuse being a badly fitting shoe hurting his foot. The suspicions of the home office officials were aroused by a report from another source, and the examiner, being requested to re-investigate, had to admit with chagrin that he had been fooled by a subject with spinal disease. If this examiner had taken the precaution of without exception observing the gait, as he should do in every case, he would have saved himself considerable mortification.

In another recent case, a well-trained examiner had occasion to confess himself tricked by an applicant who vigorously chewed gum to hide the evidence of facial paralysis.

A chronic axillary abscess, which had not been acknowledged during the questioning, nearly escaped detection. The applicant was a clergyman and his statements would have been accepted without hesitation by the majority of examiners. Unfortunately for him, however, the examiner who had charge was a very cautious and inquisitive individual who insisted on making the examination with a completely bared chest, and this led to the discovery of the abscess.

Fraud Practised by the Applicant and Agent.—The agent and applicant have been discovered in league, the former having coached the latter to conceal certain facts or set them forth in a misleading way.

In other cases, the agent succeeds in getting possession of an adverse report from an examiner which should have been sent to the home office. The agent then takes the applicant to another examiner with the hope that he will not discover the defect or will be complacent enough to overlook it. If such a report is surrendered to the agent, notwithstanding the fact that such a procedure is both ill-advised and dangerous, the examiner should at once immediately notify the home office of the name and date of birth of the applicant and the impairment, so that the fraud may be prevented.

Substitution is difficult but is attempted at times. It is especially easy for this practice to be followed among the many undesirable aliens who are swarming into the United States. Two conspiracies of considerable magnitude have come into the writer's experience and both happened among that class of people. The practice of substitution is not, however, always confined to members of this low grade of society. It, therefore, behooves the examiner to keep his eyes open and report any suspicious circumstances to the home office.

Fraud Practised by the Agent.—The agent may attempt to exert an evil influence on the examiner by requesting or even demanding him to modify or omit some adverse statement from the report. At other times, the agent will try to prevent the carrying out a part of or even the entire physical examination. No examiner worthy of the name would submit to such overtures, but it is wise to remember these injunctions, as some of the unscrupulous agents are most plausible and persistent in their arguments.

The agent or any other person should never be permitted to procure the urine from the applicant, no matter how much trust and confidence the examiner has in those individuals.

An agent will sometimes change the report after it has left the hands of the examiner. It is a good rule, even when the agent is trusted and honest, to invariably send the report directly to the local manager or home office.

Fraud Practised by the Examiner.—To the credit of the profession it may be asserted that bribery and collusion are rare occurrences among medical examiners. Such practices have happened, however, sufficiently often to bring about the enactment of laws in some of the states for shielding the companies against fraudulent conduct on the

part of the examining physicians, whereby the wilful making of a fraudulent statement in an application for life insurance is made a misdemeanor punishable by fine or imprisonment.

Fraud Practised by Policyholders.—This does not concern the medical examiner directly, and reference to the crimes perpetrated by policyholders for defrauding life insurance companies is made only as a matter of interest. Suicide by persons who wish to provide for their families at once is practically prevented by the insertion of a clause in the application, which provides that suicide within a certain time after the issuance of the policy shall not make the policy a claim against the company, whether the suicide was sane or insane. Murder of a person insured in favor of the murderer is another means of fraud. Mysterious disappearance, usually arranged to present the probability of suicide, is the most successful and common form of crime adopted for this purpose, but as the companies must be on their guard under suspicious circumstances, such schemes are usually foiled.

The Insurability of Women.—T. Hewson Bradford embodies in this article some of the facts contained in a paper on this subject read before the American Association of Medical Examiners with the addition of the effects of major operations viewed in the light of the experience of some well-known surgeons and gynecologists, as well as of several medical directors of insurance companies. With experience and a more thorough knowledge of statistics many of the objections to insuring women have been modified and others entirely eradicated. Statistics have proved that the majority of sudden deaths from internal or pathological causes occur in men, and the greater tenacity of life in women makes it seem remarkable that companies should ever have refrained from accepting women as risks. Thrift, forethought, economy, and prudence in the management of details have been characteristics of women and the introduction of them as risks in insurance companies conduces to confirm and strengthen these qualities and fosters true motherhood in securing to their progeny the means to avoid care and trials. Environment as a factor in life insurance is for most women more healthful, comfortable, and sanitary than for men; as a class womankind is less exposed to dangers and accidents, is more sheltered, and less exposed to the temptations of life. Should woman be physically affected by a life of dissipation she never has enough money to keep her policy up. Pneumonia is much more prevalent and fatal among men than among women, and the same is true of typhoid fever. It is a fact, especially after the age of fifty years, that nephritic and vesical diseases are more prevalent among men. Pregnancy and parturition are no longer looked upon as pathological conditions, but are recognized as physiological events. One per cent. is the mortality in parturition in cases well cared for. Puberty and the menopause are only serious periods because the fundamental laws of Nature are not strictly observed. Education as to the avoidance of the ills incident to these periods is being rapidly disseminated. In the examination of women for life insurance the interrogations should be most explicit. Great stress should be laid on the possible existence of any pelvic disorder, characterized by pain over the fundus or ovarian regions, the existence of leucorrhea, or tendency to amenorrhea, dysmenorrhea, and metrorrhagia. All clothing which interferes with careful auscultation and percussion of the chest should be removed and a thorough examination of the apices should be made. Likewise over the abdomen the examination must not be made through a gauze undershirt. Many a case of latent appendicitis can be detected by the existence of tenderness and induration over McBurney's point, and by external palpation, the presence of uterine fibroids may be detected. It is absolutely necessary that a vaginal examination be made. In risks when conditions are detected by interrogations, such an examination should be insisted upon, for only thus can a salpingitis, pyosalpinx, fibroids, or a beginning malignant growth be diagnosticated. The day is not far distant when the examination blanks of insurance companies will contain a clause requiring this vaginal examination. A fruitful source of many ills so prevalent in the female sex are the methods and practices employed to prevent conception; these practices may be responsible for melancholia, chronic invalidism, chronic oophoritis, and salpingitis. With a history of miscarriage or abortion a risk should not be accepted until a living child is born at term. A widow whose husband has died of tuberculosis should not be accepted until two years after his death. Cancer as a hereditary factor must be closely investigated in women risks as this disease is far more transmissible in women than in men. Care should be exercised to guard against fraud in the substitution of urine. In the book of instructions issued by the Philadelphia Life Insurance Company it is stated that the company does not desire to insure women recently married, engaged to be married, pregnant, or approaching the change of life. In regard to the major operations on the pelvic organs the experience of prominent surgeons has been asked regarding the prognosis of hysterectomy in cases of fibroids, pyosalpinx, hydrosalpinx, and other causes with the exception of malignancy. Replies had been received from Howard Kelly, Barton Cooke Hirst, John Montgomery Baldy, E. E. Montgomery, W. Esterly Ashton, George M. Boyd, John B. Deaver, John G. Clark, Harry Toulmin, and Charles H. Willitts. These replies are printed and show a unanimity of opinion to the effect that major operations, if there is no history of tuberculosis or suspicion of malignancy, can have no effect upon the assurability, if sufficient time is allowed to elapse after the operation; in cases of appendectomy, salpingectomy, and ovariotomy, six months; for supravaginal hysterectomy, two years. By allowing two years to elapse the artificia menopause has been thoroughly established. If a rigid physical examination and a careful investigation on the line of moral hazard and insurable interest are made in all cases of female applicants, insurance companies cannot err in accepting women as risks.—*New York Medical Journal*, November 23, 1912.

Medical Officers of the State Mutual Life Assurance Company of Worcester.—At a meeting of the Board of Directors held on Tuesday, November 12, 1912, the following officers were unanimously elected: *Medical Director*, Dr. Homer Gage; *Assistant Medical Directors*, Dr. Charles D. Wheeler and Dr. Merrick Lincoln.

Association of Life Insurance Presidents.—The sixth annual meeting of this Association was held on Thursday and Friday of this week at the Hotel Astor, New York City.

Book Reviews.

Gonococcal Infections. By Major C. E. Pollock, Royal Army Medical Corps, and Major L. W. Harrison, Royal Army Medical Corps. London: Henry Frowde, Oxford University Press; Hodder & Stoughton, 1912.

In this compact manual of 222 pages there is given a concise account of the present knowledge of gonococcal infections. The subject is dealt with under the following headings: Introduction; pathology; vaccine and serum therapy; primary infections; treatment of gonorrhea in the male; complications in the male; gonococcal infections in the adult female; gonococcal ophthalmia; gonococcal vulvovaginitis of little girls, and gonococcal septicemia. The authors do not altogether concur in the teaching of the Vienna school that "every attack of gonorrhea is curable except the first." Nevertheless they find that the treatment of gonococcal infections is still far from satisfactory, and that no one knows yet how to cure a chronic gonorrhea. As regards the use of injections they state that these may be employed with benefit, even in acute cases, provided the solutions are not too strong or irritating. A full discussion is given to the subject of the vaccine treatment of gonorrhea. This method is not adapted for the acute stages of the disease but is eminently successful in the treatment of the complications, and particularly of gonorrheal arthritis. The critical valuation and comparison of the various methods of treatment of gonococcal infections serve to make this volume a most valuable addition to the literature of the subject.

Consumption in General Practice. By H. Hyslop Thomson, M.D., D.P.H. Price $5.50. London: Hodder & Stoughton, 1912.

This volume of 335 pages, while not containing anything new, is a fairly complete resumé of our present knowledge of diagnosis, prognosis and treatment of tuberculosis and its complications. The book is written by a man of large experience and intended for the general practitioner. In his chapter on diagnosis, the author takes into consideration the often neglected family and personal history, and the symptoms following acute illness and exposure to infection. In chapter IV entitled "Confirming Diagnosis," he emphasizes the importance of tuberculin tests. It is gratifying, however, to see that he rejects the ophthalmic test which should be replaced by what he calls the safer and more delicate cutireactions. In the same chapter he also recommends the tuberculoopsonic index as a means of diagnosis, which is much more in vogue in England than in this country. Lastly he pleads for the animal inoculation test. Of the *x*-rays he very justly says that, except in the hands of expert observers *x*-ray examination has a limited field in the diagnosis of pulmonary tuberculosis. His chapter on differential diagnosis is perhaps rather deficient. He does not say a word of the bronchial and pulmonary type of influenza which causes even the expert diagnostician so much difficulty to differentiate.

The chapter on prognosis deals with the well-known features. In it the author considers age, nationality, and occupation, but fails to mention the important item of temperament. In speaking of nationalities and their relation to prognosis of tuberculous diseases, he comes to the same conclusion regarding the alleged immunity of the Hebrews at which many American observers have arrived, namely, that there is none, or at least there is none any longer. He says, "The Jews have always been regarded as comparatively immune to tuberculosis, but the racial immunity is certainly becoming less evident among the Jewish population in England."

In the chapter on treatment, which Dr. Thomson divides into preventive, modern sanatorium, tuberculin, and symptomatic treatment, the portion on autoinoculation is perhaps the most interesting and is well worth a careful perusal. Paterson and Inman are quoted as authorities for the value of autoinoculation by manual labor controlled by the opsonic index. The concluding chapter on after-care, home-treatment, and sanatorium construction is also well worth perusing, having important bearings on the social aspect of tuberculosis.

The Therapy of Syphilis, Its Development and Present Position. By Dr. Paul Mulzer, of Berlin, with a preface by Prof. P. Uhlenhuth, Privy Councillor. Translated by A. Newbold. Price net $1.50. New York: Rebman Company, 1912.

After a short, scholarly preface by Prof. Uhlenhuth, the author describes the modern arsenical preparations, Atoxyl, Arsacetin (Ehrlich), Atoxylate of Mercury (Uhlenhuth), Hectine, Soamin, Arsenophenylglycin, and Salvarsan, which have been used in the treatment of spyhilis. The major portion of the book is devoted to Salvarsan, the technique of its preparation and administration, its effect upon the organism in general and upon syphilis in its different stages. His results and experiences are practically the same as those hitherto published by many other writers. With regard to the Wassermann reaction, he believes that its practical value is principally in differential diagnosis and that only repeatedly negative reactions extending over a fairly prolonged period can be accepted as evidence of cure. Poor and awkward translations mar the literary smoothness; for example, the careless translation of "Erreger" into "exciter." On page 111 appears the history of an unfortunate patient who "had to be fed with pharyngeal probes and nutrient enema." In describing a cutaneous eruption on page 175 the infiltrations were described as "varying in size from a crown to a five-crown piece." Forty of the two hundred and forty-eight pages are given over to index and literary references.

Pharmacology and Therapeutics for Students and Practitioners of Medicine. By Horatio C. Wood, Jr., M.D., Professor of Pharmacology and Therapeutics in the Medico-Chirurgical College, Physician to the Medico-Chirurgical Hospital, Second Vice-Chairman of the Committee of Revision of the U. S. Pharmacopeia. Philadelphia and London: J. B. Lippincott Company.

This is a new work. The title Pharmacology is used in place of the old Materia Medica, and includes the study of the physical and chemical properties of drugs, the changes produced in the normal functions by them, and their principal use in the treatment of disease. It is evident that instruction in Materia Medica is the main object of the book; the sections on Therapeutics are much briefer, and, with four exceptions, the various diseases which require treatment are not even mentioned in the index. Hence, as a work on Therapeutics for the busy practitioner the present book is of little or no use. The four conditions which form the exception referred to above are: Acute bronchitis, cough, heart disease, and malaria. Why these four are selected for such exception we do not know. Certainly very few physicians limit their practice to bronchitis, heart disease, and malaria. The chief use of the volume would seem to be that of a class book on Materia Medica for medical students, and it is quite possible that the author's classification will appeal to some teachers. The subjects treated in the volume are: Drugs used to affect secretion (diuretics, diaphoretics, expectorants, and drugs which diminish secretion); Drugs used to affect the nervous system (somnifacients, anesthetics, analgesics, spinal depressants, motor nerve paralyzants, and sensory nerve paralyzants); Drugs used to affect circulation (cardiac stimulants, vasomotor stimulants, and drugs which reduce blood-pressure); Drugs used to affect the alimentary tract (stomachics, emetics, and cathartics); Drugs affecting metabolic processes: Drugs acting on causes of disease (anthelmintics, antimalarials, and disinfectants); Extraneous remedies (digestants, alkalies, demulcents, emollients, counter-irritants, and escharotics); and drugs of minor importance.

Ueber die Behandlung der Gonorrhöe des Mannes. Von Prof. Dr. V. Klingmüller in Kiel. Preis 1 mark. Halle a. s.: Carl Marhold Verlagsbuchhandlung, 1912.

This brochure of six thousand words is replete with sound teaching. He regards internal medication as worthless, relies upon urethral germicides, and emphasizes proofs of cure before giving marriage consent.

Clinical Bacteriology and Hematology for Practitioners. By W. D'Este Emery, M.D., B.Sc., London Director of the Laboratories and Lecturer on Pathology and Bacteriology King's College Hospital, and Lecturer on General Pathology, London School of Medicine for Women; Formerly Hunterian Professor, Royal College of Surgeons. Fourth edition. Philadelphia: P. Blakiston's Son & Co., 1912.

The fourth edition of this well-known book differs but little from its predecessors. The chief point of difference is the addition of a description of the author's modification of the technique for the performance of the Wassermann reaction. The book is prepared especially for the practitioner who has had little or no training in bacteriology and hematology and who has no laboratory near him on which he may rely for aid. To this end it is admirably arranged and the matter well chosen. The fact that the present student receives better training along these lines does not detract from the value of this volume and it is evidently destined for a long and successful life.

Society Reports.

THE NEW YORK ACADEMY OF MEDICINE.

Regular Meeting, Held November 7, 1912.

Dr. L. Emmett Holt, Vice-President, in the Chair.

Dr. Jacobi Resigns as Trustee.—Dr. Jacobi said that he had resigned his trusteeship several times when it had not been accepted because there were a number of good men younger than he who should be broken into the work. He believed that he had done his work and that it was time to select a younger man.

Dr. Arthur M. Jacobus presented the following resolution, which was unanimously carried:

Resolved: That the resignation of Dr. Jacobi as Trustee of the New York Academy of Medicine, an office which he had filled as President of the Academy ex-officio and as trustee by election together since 1885, nearly twenty-eight years, with great ability and fidelity and with invaluable benefit to the Academy, be accepted with sincere regrets and the heartiest wishes for his good health and happiness in the future.

The Prevention of Trachoma in New York School Children.—Dr. Anna W. Williams read this paper. She stated that the investigations of the workers who had been studying trachoma and allied conditions in the Division of Laboratories of the New York Department of Health had been going on for about two years. When they began the work they found a great deal of vagueness in the literature in regard to the whole subject of trachoma. The most that could be said for their knowledge today was that their studies had opened up new and interesting aspects. A great deal of the confusion had arisen from the fact that no large series of cases had been under close observation for a long time. Such a series they had immediately started, keeping continuous charts by the folder system, and they had now under observation somewhere in the neighborhood of 2,000 cases. They soon found a few most interesting facts which were: 1. The finding of hemoglobiniphilic bacilli and the trachoma inclusions coincidently so frequently in their papillary trachoma cases. 2. The morphological similarity between these bacilli and the trachoma inclusions. 3. The inability to differentiate these bacilli from those found in acute conjunctivitis and in many subacute borderline cases. These facts led to the old conclusion that acute contagious conjunctivitis was merely the first stage of the chronic condition of hyperplastic inflammation known as trachoma; that in chronic cases on the one hand the bacilli were altered in virulence and, on the other hand, the patient, through neglect or other causes, had acquired a hypersusceptibility to this altered virulance. When they reached this conclusion they decided that the chief means of preventing trachoma was to treat more carefully than they had the acute cases as well as those diagnosed as trachoma and borderline cases. This they had proceeded to do as well as they could with their limited facilities. They focused their attention on the lower East Side district, where most of these cases were found. Here the children affected had to be reached more directly through the schools and so the consent and assistance of the Board of Education was obtained. Two school clinics were started and special mixed classes were formed for the selected cases. Thus far there were two of these classes, one for the smaller and one for the larger children. A nurse was constantly in attendance at these classes and the children were instructed in general hygiene and in the hygiene of the eye, nose, and mouth. They were made to wash on entrance and just before going home. They were treated twice daily with the special drug needed, leaving boric acid treatment to be given at home. In addition to talks and demonstrations given to the children in the schools, talks were given to mothers in a model flat kindly lent for the purpose. The importance of this instruction in hygiene had always been known, as it was agreed that trachoma on the whole was a dirt disease; it occurred most frequently and intensely among the careless poor. They had found whole families with marked trachoma. By repeated insistance upon personal hygiene, by treating more closely, and by following up their cases of acute as well as of subacute conjunctivitis they had obtained certain results which were shown in tabulated form. Many of the cases which were now considered cured might have to be changed later. This table brought out the following points: 1. The large number of cases. 2. The relation of folliculosis to trachoma. 3. The relation of acute conjunctivitis to trachoma. 4. The number of cases cured. 5. The number of fresh cases of acute papillary conjunctivitis. Whether they helped to bring about the present lack of trachoma by their teaching of hygiene, their treatment and the following up closely of cases of acute conjunctivitis, it was too early to say, but they hoped that by continuous observation of these cases they might have more exact knowledge in another year.

Dr. Stewart L. Craig spoke of the importance of isolating these patients suffering from trachoma, which, he said, was a very difficult thing to do in New York City. This was a condition which was a source of danger to every child. The classes that had been established were a step in the right direction.

Observations on the Clinical Use of Immune and Normal Sera.—Dr. Matthias Nicoll, Jr., presented this communication. He said that the addition of a clinical staff to the force of the Research Laboratory had been a factor in stimulating an interest in the theory and practice of specific therapy among medical men of this city and the surrounding territory. This had been accomplished by the distribution of literature on the subject of serums and vaccines, by consultations with hospital and outside physicians, and by the fact that the laboratory force stood ready, as far as possible, to personally administer specific treatment when requested to do so. Sera had been supplied freely to physicians of this city who asked for them on the sole condition that, at the termination of the case, they should forward to the laboratory a short clinical history of the case with such data as would be valuable in determining the value of the serum. Such records were not for publication except by the permission of the physician and interfered in no way with any use he might wish to make of them. Notwithstanding this request and numerous follow up letters, not more than one-tenth of the physicians and institutions supplied had complied with its requirement. Series of cases had been treated, however, by some of the staff of the laboratory in their own services and in the hospitals of the Department of Health. By this means and by visiting other institutions where they had supplied the sera a certain amount of information had had been accumulated. There could be no doubt but the large dose, 100 to 200 c.c., which was generally regarded as necessary to produce results with the immune sera had militated against their more general use. When such a dose was used subcutaneously an apparatus such as was exhibited was almost essential and was not readily obtainable. An intravenous administration required a certain amount of practice and was unquestionably looked upon with more or less dread by the average physician. Until some means was found of concentrating the active principle it was difficult to see how such drawbacks could be overcome, and the sera would be used as it was now, very largely only in such cases as were regarded as desperate. Of the pneumococcus serum which had been kept in stock only a short time during which there was but little pneumonia, the results obtained in the small number of cases in which it was used had not been sufficiently marked to enable one to draw any definite conclusions as to its value. In some instances it seemed to have shortened the course of the disease and caused a drop in the temperature; in others no effect was produced. It had usually been given intravenously in doses of 100 c.c. It was truly polyvalent, the horse having been immunized with a dozen or more strains, first of pneumococcus killed by heat, later autolysates, and, finally, living virulent pneumococci. Anti-streptococcus serum, as at present supplied, was a polyvalent preparation obtained from horses. It included a dozen or more strains obtained from scarlet fever cases, from cases of puerperal sepsis, empyema, erysipelas, etc. A special serum for use in malignant endocarditis was also made. This serum had until recently been used but little in this country, but they were now gradually getting records at the Research Laboratory of cases which enabled them to draw conclusions as to its value. Its use was increasing very rapidly. Of all the conditions in which it had been used perhaps it had proved most successful in scarlet fever. Abroad it had been given in a large series of cases as a routine measure and at an early stage of the disease. With the lower mortality in this country such a proceeding was scarcely justifiable and its use here had been limited to the so-called septic cases. For this reason it was not possible to compare results. In a series of cases treated at the Willard Parker Hospital the effect on the pulse and temperature was very noticeable and the discharges from the nose and mouth very rapidly subsided together with the swelling of the lymphatic glands about the neck. Dr. Nicoll reported a case in which the serum was given intravenously in doses much larger than they had been accustomed to using and the results were so startling that he felt convinced of the value of the serum. In puerperal sepsis the subcutaneous

and intravenous use of the serum left much to be desired. A number of cases apparently were much benefited and a much larger number were not influenced. It had to be stated, however, that in many instances the patients had been *in extremis* when the treatment was undertaken. In erysipelas, in a number of instances, the temperature had fallen by rapid crisis following the use of the serum and the skin lesion had subsided within two or three days. In other cases the effect of the serum was not distinctly marked. The value of this serum locally as a packing for discharging wounds, cellulitis, etc., was not sufficiently appreciated. Under its use sluggish granulations rapidly became active and healthy, the discharge ceased and the wounds healed with great rapidity. As a local application to throats, especially in scarlet fever, it was extremely valuable. It should be applied freely every two hours. As a packing for an infected uterus it had also proved very valuable. Normal horse serum had proved of decided value in subcutaneous doses of 10 to 20 c.c., repeated if necessary, in intestinal hemorrhage, notably in that of typhoid fever, epistaxis, stubborn purpura hemorrhagica, and to a certain extent hemopytisis and ulcer of the stomach. It had proved of less value in hemorrhage of the newly born, and it would seem that in this condition direct transfusion or the use of human serum was preferable. The serum had been used, principally in England, as an application to chronic ulcers with excellent results. In considering the bad results which might follow the use of the serum, he mentioned, rashes of an urticarial character which might be accompanied by a moderate rise in temperature, and occasionally joint pains, chills which occasionally followed an intravenous injection of a large amount of serum, and in one case he had seen delirium None of these symptoms had lasted more than a short time and added little more than discomfort to the patient. The laboratories were responsible for the bugaboo of anaphylactic shock. This was a phenomena which could be readily produced experimentally in certain lower animals by properly spacing the administration of a foreign protein and with fatal results. Fortunately this rarely occurred in human beings. He had seen anaphylactic shock but once and that was in the case of an almost moribund child. In very asthmatic individuals and those of marked lymphatic diathesis the use of sera should, if possible, be avoided

The Differential Diagnosis and Treatment of Cerebrospinal Meningitis.—Dr. Phebe L. DuBois presented this paper in which she recalled that in 1906 the New York Board of Health had supplied the antimeningitis serum but that it had been found to be of slight avail and its preparation had been discontinued. After its value when administered interspinously had been proved the Rockefeller Institute had given the Health Department two horses immunized against the meningococcus and a generous supply of the serum, so it had been offered, together with the services of a consultant, to every physician reporting a case. In this way they had seen 247 cases, at least half of which were reported as epidemic cerebrospinal meningitis. The essayist showed a table which made it evident that there was a large percentage of errors in the diagnosis and that there were few cases of cerebrospinal meningitis in New York. The streptococcus, pneumococcus and influenzal cases could not have been differentiated except by lumbar puncture. The cases of infantile paralysis that they had seen had been of the encephalitic rather than the myelitic type. Rigidity of the neck often led to other conditions being mistaken for meningitis. The meningisimus coming early, before there were any signs of pneumonia, was the most difficult of all conditions to distinguish from true meningitis. In epidemic cerebrospinal meningitis and infantile paralysis the onset was usually sudden in comparison with a slower onset in tuberculous meningitis. In meningococcus meningitis the patient's mental condition was usually good excepting in the fulminating type. In tuberculous meningitis there was often a history of irritability followed by increasing stupor; in infantile paralysis the patient could be aroused. Cases of epidemic meningitis showed marked rigidity of the neck while in the tuberculous cases this symptom was apt to be slight or only a moderate anterior posterior rigidity. They had found Brudzinski's and Macewen's signs much more marked than Kernig's. The fever was higher in infantile paralysis and epidemic cerebrospinal meningitis than in tuberculous. Convulsions occurred in all three conditions. Projectile vomiting was not uncommon in tuberculous meningitis. The surest means of diagnosis, however, was by examination of the spinal fluid, and that was not always certain. Cerebrospinal meningitis nearly always gave a cloudy fluid while the other conditions yielded a clear fluid under increased pressure. They usually trusted to guinea pig inoculation for the final diagnosis when they did not find the bacilli. In regard to treatment Dr. DuBois said that for prophylaxis they relied on quarantine and looking after carriers. They now made cultures from the throats of those coming in contact with the patient, but thus far had not learned the most effective means of ridding the carriers of bacilli. Dr. Sophian had found that the injection of antimeningococcus vaccine was effective. Hatchel and Hayward had used a spray of antimeningococcic serum effectively. They had found that argyrol in 15 to 20 per cent. strength was the most effective in killing the meningococci *in vitro*. The specific treatment consisted in the interspinal injection of antimeningitis serum. They have injected the serum if they found a cloudy fluid on puncture. The amount of serum injected was usually a little less than that of the fluid withdrawn. Blood pressure was used as the guide for dosage. The number of injections depended upon the condition of the patient. The rigidity of the neck was usually late in disappearing and if the patient was improving in every other way this did not disturb them. They had used the autogenous vaccine in two cases that threatened to become chronic. The cases that developed basic meningitis where communication between the meninges of the brain and cord were cut off had never recovered in their experience. For general treatment they recommended the administration of urotropin because it had been shown that after its ingestion formalin was found in the cerebrospinal fluid. They also advocated the use of sedatives where the patient was restless. The diet should not be too limited as the duration of the disease might be prolonged. Meningococci were sometimes found in the urine and this should be remembered in ordering the hygiene of the sick room. Before using the serum the mortality had averaged 75 per cent.; now it averaged 50 per cent. Dr. Sophian in his experience in Texas had a mortality of 28 per cent. in the hospital. The prognosis was better for children than for adults.

Dr. L. Emmett Holt reported a case in which a very discouraging result followed the injection of the serum. The baby was seven months old and after the third injection stopped breathing for several minutes; artificial respiration had to be used before the baby again breathed maturally. He had seen a similar case in the hospital.

Dr. DuBois said that she had seen six or eight cases of that kind.

The Dosage of Diphtheria and Tetanus Antitoxin as Determined by Animal Experimentation.—Dr. William H. Park said that in Boston they were in the habit of giving large doses of diphtheria antitoxin, while in Philadelphia they gave about one-half as much. Dr. George Patten Biggs had made a series of laboratory experiments in animals in the endeavor to throw some light on this subject. It was to be remembered that the toxins were elaborated in the tissues involved and that a certain quantity was used in attacking the cells and a certain quantity got into the lymph and blood; a smaller quantity went through the capillaries. This liquid passing through the body fluids poisoned the general cells which were almost beyond reach and the question arose, how much poison was there? They tested the blood of patients coming to the hospital before they were injected. Charts were exhibited which showed the comparative amount of antitoxin in the blood at one, six, and twenty-four hours, when 10,000 units were given subcutaneously and intravenously. The time element was an important factor and the subcutaneous injection was a slow method of getting the antitoxin in the blood and general tissues. The antitoxin should be administered intravenously. Two, three, or four doses were not necessary: a single dose should be sufficient. The intravenous injection should be employed in the advanced and malignant cases. The patient would be saved by small amounts of antitoxin if it was given early in the disease. In the very severe cases one should give large doses intravenously for the purpose of hurrying it to the tissues. The time element was also important in tetanus and here the antitoxin should always be given intravenously. Large doses should be employed, such as 20,000, and repeated if necessary.

Parasitic Thyroiditis.—C. Basile states that this is an acute or chronic disease which affects chiefly infants and which manifests itself with fever, enlargement of the thyroid, hyperthyroidism, and phenomena of myxedema. There are certain associated symptoms referable to the nervous, cardiac, and hemopoietic systems. The etiological factor is a trypanosome, the *Schizotripanum cruzi*.—*Il Policlinico.*

SOUTHERN MEDICAL ASSOCIATION.

Sixth Annual Meeting, Held at Jacksonville, Fla., November 12, 13, and 14, 1912.

THE PRESIDENT, DR. J. M. JACKSON, MIAMI, FLORIDA, IN THE CHAIR.

The Diagnosis of Malaria.—Dr. GRAHAM E. E. HENSON, Jacksonville, Florida, stated that examination of the blood in cases of suspected malaria should be rigidly conducted for the detection of the parasites. Care should be taken to so time the taking of the smear as to insure the most likely time to find the parasites in the peripheral circulation. It should be the aim of the physician to make honest efforts to secure laboratory confirmation of the clinical findings before placing the patient on specific treatment, provided there were no symptoms suggesting the more pernicious type of the disease. In the event that quinine had been administered before the patient came under observation, a tentative diagnosis of malaria, even in the absence of the detection of the parasites, was justifiable under the following circumstances: 1. That the clinical history of malaria was obtainable. 2. That the patient had enlarged spleen. 3. That a leucopenia was present. 4. That the red-cell count was below normal. 5. That the hemoglobin was reduced, and that the differential count showed an increased percentage of large mononuclears. If these rules were adhered to, which might within certain limits be elastic, the many incorrect diagnoses of malaria that to-day covered a multiude of sins, and constituted the greatest blot in tropical and subtropical medicine, would be removed, and many of the unfortunates who to-day considered themselves the victims of chronic malaria, might be told what their condition really was, and possibly be relieved from further suffering.

Dr. E. C. THRASH, Atlanta, Georgia, spoke of a case that came under his observation three or four weeks ago in which a diagnosis of tuberculosis had been made by a local physician. For six or eight weeks the diagnosis lay between malaria and typhoid fever. He found the spleen of the patient very much enlarged, ruled out tuberculosis, and told the patient he thought he had either typhoid fever or malaria, and that he would soon decide between the two. He had been taking quinine systematically and regularly in all sorts of ways. He gave him treatment for ten days, watched him, found he ran a temperature continuously, and would occasionally have a chill. At the end of the eighth or ninth day he began to make examinations of the blood every six hours, and in the fourth examination he found estivoautumnal parasites. This man could have been saved a great deal of annoyance and a long attack of illness if the instructions outlined in Dr. Henson's paper had been carried out. He put the patient on four grains of cacodylate of sodium hypodermically daily and on large doses of quinine hypodermically, to which he responded promptly, and had had no trouble since.

Dr. CHARLES F. CRAIG, U. S. Army, mentioned two cases showing the importance of blood examination in malaria. One man became unconscious on the street one day and was picked up and taken to the emergency hospital. He died in a short time. The speaker had the opportunity of examining the brain and spleen in the case and found them both loaded with estivoautumnal parasites. Another case was at the Washington Hospital for a week before a blood examination was made. This patient died, and postmortem examination revealed the spleen filled with these parasites. It was the general impression that pernicious malaria did not occur in the city of Washington, yet within a month two cases occurred which were not recognized.

Dr. JOHN T. HALSEY, New Orleans, said that in the month of October he had two cases of pernicious cerebral malaria at the Charity Hospital, New Orleans, in neither one of which did physical examination give a hint of malaria. These cases would recover if the disease was recognized promptly and quinine given hypodermically in a very energetic manner.

Dr. JAMES H. RANDOLPH, Jacksonville, reported three cases of the cerebral form of malaria which recently came under his observation, and which illustrated in a very striking manner the importance of blood examinations. These cases were characterized by delirium.

Dr. WILLIAM ROSS, Jacksonville, related the case of a child who had six convulsions in five hours, was unconscious, had absolutely all the symptoms of acute epidemic cerebrospinal meningitis, with a temperature of 102°. His diagnosis was cerebrospinal meningitis. He was about to make a lumbar puncture. He took a blood smear, and found malarial parasites of both the estivoautumnal and tertian type. The child was unconscious for six days before it responded to quinine treatment.

Dr. CHARLES T. DRENNAN, Hot Springs, Arkansas, said it was just as imperative to make blood examinations in suspected cases of rheumatism as it was to make uranalyses in conditions which would lead us to suspect interstitial nephritis.

Dr. L. A. GREEN, Jacksonville, stated that the records of the State hospital showed that a number of patients admitted as insane were instances of pernicious malaria. These patients reacted promptly to quinine medication and recovered, but left the institution with the stigma that they had been insane, when, as a matter of fact, they had been suffering from malaria.

Dr. GREEN, New Orleans, said that in the Fall of 1898 a patient was brought into the Charity Hospital with a diagnosis of chronic interstitial nephritis with uremia. An examination of the blood and urine was insisted upon, and disclosed the case to be one of pernicious malaria. The patient was treated promptly with quinine and recovered.

Dr. JOSEPH GOLDBERGER, Washington, D. C., said there could be no doubt that in hospitals in these days a routine examination of the blood was absolutely essential, but the general practitioner did not, as a general rule, avail himself of this means of diagnosis in a great many cases, believing that it was unnecessary.

Dr. C. C. BASS, New Orleans, referred to the time of taking blood from the patient, and said that if we were dealing with the estivoautumnal type, the parasite might not be present in the blood for six or eight hours. It was worth while to direct attention to the fact that the estivoautumnal case in which the clinical course was more or less tertian, with chills and intermittent fever, with perhaps normal temperature, was due to the fact that the parasites segmented almost all together in groups as they did in the tertian and quartan type. In such cases the number of parasites present in the blood after six or eight hours would be smaller than at any other time. There never occurred a time when the parasites in the blood of the patient who was having malarial chills and fever were not numerous enough to be easily found. The proper time to take a blood examination for malaria was whenever one saw the patient.

Preliminary Study of Malaria in Alabama.—Dr. R. H. VON ESDORF, U. S. Public Health Service, Mobile, Alabama, drew the following conclusions: 1. All forms of malarial fevers prevail in the State of Alabama. 2. The types of infection in the order of prevalence are tertian, estivoautumnal, sub-tertian, quotidian and quartan. 3. The colored race is a large factor in the spread of infection, in whom the chronic type of malarial infection is proportionately greater than in the white. 4. To obtain an index of infection in the community, a blood examination should be made of adults as well as children of those who are permanent residents in such locality. 5. Latent or non-chronic cases should be treated vigorously for at least a month, and then with prophylactic doses of quinine for a period of from April to November. 6. Prophylactic doses of quinine should be taken by all persons in Alabama living in the localities known to be infected, between the period of April 1 to November 1. The prophylactic dose advised and used by me is ten grains of quinine sulphate, given in five grain doses, morning and evening. 7. The microscope should be more generally used for making or confirming the diagnosis of malaria, or, if practicable, advantage should be taken of the State laboratory, where examinations of blood will be made.

The Incidence of Malaria in the Puerperium.—Dr. J. V. FREEMAN, Jacksonville, Florida, took the position that when a woman had elevation of temperature in the puerperium, whom the physician confined previously, and during that time she gave a great deal of anxiety and trouble, and he discovered malarial infection, if he delivered her a second time he was justified in giving prophylactic doses of quinine, but he was not justified in giving it to every case he saw.

Dr. GRAHAM E. E. HENSON, Jacksonville, said that owing to the fact that any rise of temperature in the puerperium caused great alarm not only to the attending physician, but also to the members of the family, it had been his custom for the last five years, as soon as a patient was delivered, to put her on ten grains of quinine a day. He did not think there was anyone who practised medicine who would more strongly oppose measures to mask infection than himself; at the same time, owing not only to the anxiety caused by fever in the puerperium, but also to the fact that malarial infection did develop, the mother was put on large doses of quinine to control the infection after it had once manifested itself. By following this

line of procedure, and delivering 100 or more women, he had never seen malarial fever develop in the puerperium, and on that account he would strongly urge that these patients be given ten grain doses of quinine. He generally gave five grains in the morning and five grains at night.

Dr. Stevens T. Harris, Highlands, North Carolina, said with regard to fever returning periodically being classed as malaria, it was not true. It was absolutely erroneous to make a diagnosis of malaria from this standpoint. He had seen fever, chills, sweats, typically malarial in character recur without the presence of malaria. One might also have chills occurring periodically and with regularity in tuberculosis, and possibly in other septic conditions. He would strongly urge that the use of the microscope was the only way to diagnose malaria.

Dr. B. B. Simms, Talladega, Alabama, said we could have chills and fever, and even if we found the plasmodia we could not call the case malaria every time, because we frequently had plasmodia in our blood. In Alabama it had been found that 11 per cent. of the people had malarial parasites in the blood without manifesting symptoms of malaria.

Dr. W. A. Boyd, Columbia, South Carolina, believed that a woman who went through the trials and troubles of childbirth had suffered enough, and the physician should not, as a routine, impose upon her the necessity of caring for ten or fifteen grains of quinine because of a possible malaria. If we had a puerperal woman who showed a febrile condition, and we were not sure of the actual condition present, he did not believe as obstetricians we were justified in putting that woman upon the routine treatment of quinine until we had proven to ourselves and for our patient's benefit, as the result of bacteriological examination, that she was infected with malaria.

The Production of Beriberiform Polyneuritis in Fowls with Substances Other than Rice.—Dr. Creighton Wellman, New Orleans, stated that before he took up the problem experimentally, Prof. Bass, in a series of experiments during 1911, showed that the characteristic polyneuritis of fowls could be produced by feeding them an exclusive diet of milled Louisiana white rice. During Prof. Bass' subsequent absence in Central America, he carried on another series of experiments and observed that not only milled Louisiana rice would produce this condition, but also that a single diet of other carbohydrates would accomplish precisely the same result. For instance, he was able to produce this characteristic condition in fowls more rapidly and completely with cane sugar than with milled rice. Pure corn starch would produce the condition rather more slowly, but fully as completely as milled rice. He also found that a mixed diet plus small doses of oxalic acid would produce a condition indistinguishable from that caused by milled rice. Finally, like other observers, he produced the condition by semi-starvation. These experiments were in each instance checked by controls. The production of a beriberiform neuritis in fowls by other substances than milled rice was a new observation and suggested a revision of the accepted views regarding rice as a sole cause of beriberi in man.

President's Address.—Dr. J. M. Jackson, Miami, Florida, said the Association of Medical Colleges of the South could do much to solve the problem of medical education, as the intimate acquaintance of each with the other would make it possible to deal personally and individually with each school. Great would be the day when the weaker and unequipped schools gave way and we should have centralized upon a few schools whose equipment and advantages in both didactic and clinical instruction would be equal to any school anywhere. He was astonished to learn how few professors entered medical schools with fitness as teachers of obstetrics, and he supposed it was quite so in other branches. When schools were run for the good of the profession and humanity, then would we have this improved condition. The medical profession was a quasi-public profession and it should have in connection with it capable teachers and proper equipment of hospitals in localities of sufficient size to furnish ample clinical material, which was to-day considered so important a part of medical education, and these should be run for the benefit of the well as well as for the sick occupying their beds.

Public health was a nation's greatest asset and the conservation of it the greatest need of the day. This conservation could only be done by an educated people and a highly educated medical profession as directors.

The Thyroid and Hyperthyroidism—Address in Surgery.—Dr. Stuart McGuire, Richmond, Virginia, said that when a patient with exophthalmic goiter came to a surgeon, the case ought to be kept under observation and carefully studied for some days before deciding on the character of the operation best suited to the individual and the safest time to perform it. In the hands of experts the mortality of operations for hyperthyroidism was now from 2 to 5 per cent., and 85 per cent. of those who recovered might be said to be symptomatic cures. It was neither honest nor expedient to make light of the operation or to belittle its difficulties and dangers. The figures quoted were from the statistics of master surgeons and by no means represented the results of the average operator. After a successful operation for hyperthyroidism the improvement in the patient was immediate and marked. No operation in surgery produced such quick and brilliant results. Tremor disappeared, the pulse fell to normal, the eyes became less and less wild, and restlessness and irritability were replaced by quiet and composure. The wound, as a rule, healed rapidly, and the patient was able to leave the hospital in from ten to fourteen days. Because the patient was well from the operation, and because the acute symptoms were relieved, was no ground for immediate return to the ordinary activities of life. Crile very properly stated that it required approximately the same time to recover from exophthalmic goiter as from a nervous breakdown from other causes. A successful operation should be followed by an adequate period of rest.

Vaccine Therapy.—Dr. Irwin E. Colgin, Waco, Texas, said the most uniform results obtained from the use of vaccines were in cases of pyogenic infection, especially those caused by staphylococci, such as furunculosis and carbuncles. This was due to two factors, the chronicity of the infection and the uniformity of the causative organism. Success had also been the rule in treating cases of acne vulgaris. A combined vaccine of staphylococci and bacillus acne of Gilchrist was used, based on the theory that the original nodule was due to bacillus acne, and the pustule to secondary infection of staphylococci. He advised giving fifty million staphylococci and ten million bacillus acne as the initial dose. One should give increasing doses at intervals of from a week to ten days. In vaccine therapy success depended upon 1. choosing cases applicable to the use of bacterial vaccines. 2. Determining the causative factor. One should not depend upon mixed vaccines, as usually if he got rid of the main factor nature could take care of the balance of the infection. 3. Select the dose according to individual patients and do not follow set rules. 4. Make the interval long enough between injections to let the body respond to the stimulation.

Dr. J. B. Elliott, Jr., New Orleans, said that last year he reported several cases of typhoid fever treated by vaccines. Since that time he had had four cases of typhoid fever treated in the same way by the use of typhoid vaccines. The results had been uniformly successful. The cases had all terminated about the 20th or 22d day, and after three doses of vaccine there was generally a fall of the temperature to normal. He had failed to see any harm done in any case by the use of typhoid vaccines.

Dr. E. C. Thrash, Atlanta, had been observing the use of these vaccines during the last few years and had been much chagrined at the profession treating them so indifferently. If we could cure 5 per cent. or 10 per cent. of the cases of specific disease, we had made a long stride in our therapy, because, when we ruled out syphilis and malaria, they were about all the diseases we could cure with drugs. There was nothing more valuable in our therapeutic work than careful studies of the action of these vaccines and administering them intelligently.

Hydrothorax in Its Relation to Cardio-Renal Lesions.—Dr. Frank A. Jones, Memphis, Tennessee, drew the following conclusions: 1. Hydrothorax is often an acute condition instead of a part of a general dropsy. That acute nephritis is often ushered in by an attack of acute edema of the lungs, followed rapidly by acute fulminating hydrothorax. 2. That, in all probability, the attack of edema of the lung followed rapidly by hydrothorax is due to the same toxic agencies which, at the same time, produce the renal changes. 3. That in these cases passive congestion, venous stasis, etc., have nothing to do with the production of the edema; that the large black lung is analogous to the large red kidney. 4. When dyspnea is marked, either in cardiac or renal lesions, examine the patient just as critically for hydrothorax. 5. Hydrothorax, massive in nature, is often latent. 6. Saline cathartics and digitalis, when hydrothorax is present to any appreciable degree, are dangerous. They invite edema of the lungs and paralysis of the heart.

Relation of Gas Embolism to the Production of Artificial Pneumothorax.—Dr. Stevens T. Harris, Highlands, North Carolina, said from all sides came reports

of the employment and success of artificial pneumothorax as a treatment of tuberculosis of the lung. It was safe to say that the results of no other method ever employed could compare with the wonderful results obtained by this procedure. It was the only real curative treatment for phthisis which had ever been devised. Surgical procedure had again scored a victory. Artificial pneumothorax, like other surgical methods, had its dangers, and chief among them, was gas embolism. Nearly all of the deaths due to the treatment had been caused by this condition. The chances for gas embolism were remote after one had definitely proven a free pleura and more or less of an activity had been formed. He had never seen it occur when this was the case, except where there were thickened pleura and some adhesions, and where too high a pressure was suddenly produced.

The Present Status of Our Knowledge Regarding the Parasitic Amebas.—Dr. CHARLES F. CRAIG, U. S. Army, said we were still ignorant regarding the exact method of the transmission of these parasites from host to host, and we knew nothing whatever about the relation the species found in the lower animals bore to those found in man, so that researches along these lines might result in valuable knowledge regarding the epidemiology of amebic dysentery. The point of greatest practical importance to the physician was the demonstration of a harmless entameba in so large a proportion of healthy persons, and those suffering from diseases other than dysentery, and the vital necessity of differentiating between this species and those causing disease, before making the diagnosis of amebic dysentery in patients who did not present typical clinical symptoms of the disease. He would, therefore, urge the greater use of the microscope on the diagnosis of the diseases of the intestinal tract, especially in regions where amebic dysentery and other parasitic infections of the intestine were endemic, believing that this one measure would be of more service in arriving at a correct diagnosis than any other command.

(*To be continued.*)

AMERICAN GASTROENTEROLOGICAL ASSOCIATION.

Fifteenth Annual Meeting, Held at Atlantic City, N. J., June 3 and 4, 1912.

DR. WALTER B. CANNON OF BOSTON, MASS., PRESIDENT, IN THE CHAIR.

Agar Tubes for the Estimation of the Pancreatic Ferments.—Dr. MAX EINHORN of New York City presented a method of testing the ferments with agar tubes, which seemed to him to be simple and worthy of recommendation, although some of the details would have to be worked out further. The agar tubes were mixed with albumin, starch, and fat; and the ferment action was allowed to take place in them by osmois. If the test substances added were colored with indicators, which underwent a change when acted upon, it was easy to ascertain the presence of the ferment and also to estimate their approximate amounts by the volume of tube changed.

Dr. J. C. HEMMETER said that although he had never tried this method, it impressed him very favorably. He asked whether the use of agar complicated the deductions; because, whether testing for fat, for carbohydrate, or for proteid, proteid would be present, since agar itself was a proteid.

Dr. EINHORN replied that the reason he had taken agar was that if produced in some kind of concentration and allowed to pass the digestive tract, it would not disappear. If used in a one per cent. soultion, it would disappear; but if used in a three per cent. solution, it would not do so. He also said that agar was not changed by the ferments, but that the other things added could be acted upon by them.

Some Unsolved Problems in Gastroenterology.—This was the title of the president's address delivered by Dr. WALTER B. CANNON of Boston. Among these unsolved problems he mentioned the reflex of swallowing, the "myenteric" reflex, by which a stimulant at any point in the digestive canal provoked contraction above and relaxation below that point. In connection with this reflex there arose, he said, the question as to the relation between the diastalsis of the ileum and the anastalsis, or reversed waves, in the proximal colon. The relation of the myenteric reflex to defecation had also not yet been studied. Another possible relation of this reflex to the activities of the canal lay in the function of the ileocolic sphincter, the cardiac and pyloric phincters likewise being operated through the myenteric reflex. Another problem on which Dr. Cannon thought that a great deal more work needed to be done was on absorption; but he considered the problem that he had touched upon in his address at the previous annual meeting more significant than any other. In that address he had submitted evidence as to the fundamental importance of tonus in the movements of the alimentary canal. In the intimate connection of the digestive processes with other activities of the body lay the most significant and the most profoundly interesting problems, not only of gastroenterology and of internal medicine as a whole, but also of physiology as a special science. It was because of this interlacing of interests, Dr. Cannon said, that surgeons, and physicians, and specialists, and workers in the medical sciences gathered together each year, in order to focus such light as each of them might be able to throw on these more or less obscure features of the subject.

The Diagnostic Worth of the Glycyltryptophan and the Tryptophan Tests in Diseases of the Stomach.—Dr. FRANK SMITHIES of Rochester, Minn., stated that in this series more than one-third of the proved cases of cancer of the stomach gave positive glycyltryptophan reactions. More than one-fourth were lactic-acid positive, and about one-thirteenth of the number exhibited the tryptophan test. While gastric conditions other than cancer exhibited positive glycyltryptophan reactions, in no single case of disease of the stomach was this test obtained so frequently as in cancer. The work done did not show that the tryptophan test was, as had been claimed, pathognomic of cancer. Low free hydrochloric or total acidity was frequently determined in gastric contents exhibiting positive glycyltryptophan, lactic acid, and tryptophan reactions. Many cases of low acidity were negative to the above-mentioned tests. Approximately one-half of the positive glycyltrptophan and tryptophan reactions were in gastric extracts containing bile and blood elements. Approximately one-fourth of the negative extracts contained blood and bile elements.

Dr. G. A. FRIEDMAN stated that he had been working with the glycyltrytophan test in about twenty cases, and that his experiments had shown that in cancer the reaction was sometimes obtained, although in other conditions he had never obtained a positive reaction. He had never come across a positive case of cancer, as shown by this test, when other symptoms were not present. Usually lactic acid and all the signs of cancer would be found. He believed that the tryptophan test for this disease was of no value whatever.

Dr. JOHN A. LICHTY said that he had given up using that test a year ago. It seemed to him that the points that interfered with the test were those usually present in carcinoma of the stomach.

Dr. JACOB KAUFMANN said that one should make use of every available method that would enable one to make an early diagnosis of carcinoma. A most reliable test was the presence of blood in the stool. In a recent comparison of tests for carcinoma, in 98 per cent., or 104 cases out of 110, blood was found. In the test for blood in the stool, one must eliminate all possibility of error by arranging a careful diet of green vegetables, and by avoiding the putting of instruments into the stomach. The moment one used a tube, there would be the possibility of a lesion.

Dr. SEYMOUR BASCH had also found the test unreliable in gastric carcinoma diagnosis. Another test, which he offered on theory, consisted in the presence of undissolved albumin. The basis of the test was that the gastric contents, if they contained the cancer secretion, would contain more albumin than the ordinary test of gastric secretion. The ferments digested more albumin, and the higher the body of albumin the greater was the amount of pepsin. Dr. Basch considered the test simpler than either of the other two tests, and easier to carry out.

Dr. JAMES TAFT PILCHER said that he had had an opportunity to examine four or five hundred patients with cancer of the stomach on whom operation had been performed and the diagnosis confirmed. In all of these it was fourd that these tests did not give any basis on which to apply diagnosis. The clinical history was much more definite and of much more diagnostic value, he thought, than any of the tests that had been put forth. One procedure that seemed to bear more directly on positive diagnosis was that of giving bismuth and taking a radiograph of the actions of the stomach through the fluoroscope.

Dr. J. C. HEMMETER remarked that it must be remembered that Dr. Smithies was aiming to recognize the disease at a very early stage. The results were not, as yet,

clear cut. He considered Dr. Kaufmann's idea of showing the presence of blood in the feces important.

Dr. SMITHIES stated that in a great many cases carcinoma could be diagnosed accurately by the history, but that in his cases he had proved that the albumin test, the stain test, and the like, were all of vital value in the diagnosis of carcinoma of the stomach.

Indicanuria.—Dr. WILLIAM GERRY MORGAN of Washington, D. C., presented a paper based on the analysis of one hundred and thirty-eight cases treated during 1911. He said that the indicanuria might be accidental (transitory), or might be a definite part of the clinical picture, although still associated with other pathological processes. In a very few cases it was an indication of true intestinal autointoxication. Particular stress should be laid upon loss of nerve-tone as the cause of the underlying putrefaction, it having been found that in Washington the end of the busy season was the time that most cases were seen. The symptoms were those of an intoxication with a poison having especial affinity for the nervous system. The symptom found present in the greatest number of cases was gas-formation in the bowel, indicative of the putrefaction. Others of the most promient symptoms were early fatigue, loss of ambition, malaise, headache, dizziness, and muscle pains. A myriad of other nervous manifestations were present. He thought that the cure must consist in measures preventing the formation of toxins and eliminating those already formed. Other associated conditions must be treated. Treatment of the condition itself should consist in general hygienic measures, diet, exercise, irrigations, and occasional medication. Purgatives had been found to do harm. In the majority of cases cure was easy, but progress in the occasional true autointoxication was slow.

Dr. JACOB KAUFMANN remarked that many conditions were being described as being caused by autointoxication, but that not a single fact had been shown that could prove that there was intestinal autointoxication. The problem remained unsolved, he thought. No substance had been demonstrated as acting as a toxin, indican itself not being considered toxic. In such cases he had sometimes found albumin. A certain amount of intestinal putrefaction was present, producing an output of indican, although increased intestinal putrefaction might be present without the indican. While admitting the possibility that such things as intestinal autointoxication existed, he did not think that the increased amount of indican could be used as an indication of the increased intoxication.

Dr. MAX EINHORN said that these troubles of autointoxication had been greatly exalted by the profession, many patients being told that they had poisoned their systems, being put on a rigid diet, and not allowed to do this or that. The result was that these patients became nervous and frightened. He had had some such patients, and had relieved their condition by allowing them to live like other people, not bothering about constipation, diet, exercise, and so on. He considered the whole idea of autointoxication as still being theoretical, and not practical, and said that the chief thing to teach such patients was that they must live rationally.

Dr. DUDLEY D. ROBERTS, while admitting that indicanuria had been something of a failure, said that the subject pointed out a half hope; although, before its relation to intestinal toxemia could be proved, much work remained to be done on this subject. Although he had one hundred and fifty cases under observation, he did not feel that he knew much more than when he had started.

Dr. JAMES P. TUTTLE had had many cases of so-called autointoxication, and in that type of disease had observed that in the worst cases of chronic constipation it had no relation to indicanuria, many cases loaded with mucus, casts, etc., having no traces of indican. He found that indicanuria was almost always associated with some type of staphylococcus or streptococcus infection, and was inclined to think that in cases with a large amount of indicanuria there was some slight lesion, possibly around the lower end of the cecum. He said that these cases did not need to be washed out with a barrel of water. It was not necessary for a man to have two bowel movements a day. He had seen patients having one movement every two or three days, and they were just as well as though they had more. His advice was not to scare the patients.

Dr. MORGAN, from his experience with indicanuria, thought it unimportant whether the urine was examined for indican or not. He considered it a definite picture, increase of indican being found along with the other conditions. There was an absorption in the canal that he thought rather important, but he did not believe that diet was good for autointoxication, and considered a rational way of living best. A part of the cure should consist in taking the patient away from business, because it was the condition of the nervous system, or lack of nerve-power, which had been exhausted from use in other directions, that did not permit of the patient's functionating properly.

Surgical Measures for the Relief of Abdominal Symptoms Due to Ptosis of the Stomach and Colon.—Dr. JOSEPH C. BLOODGOOD of Baltimore, Md., said that in the twenty cases operated on since January, 1911, the indications for operation were stasis in the stomach or colon, or in both. All the cases had received medical treatment without relief. In formulating the operative procedure, he had been governed by the symptoms, *x*-ray findings, and conditions exposed on opening the abdomen. In most of the cases the *x*-ray findings were least helpful. He believed that he had demonstrated for the first time the relation of chronic dilatation of the duodenum to ptosis of the colon. The dilatation of the duodenum was the end result of ptosis of the colon. The stomach trouble came on later, and the surgeon did not usually see the patients until they were in a very bad condition. The most satisfactory results had been obtained in the group of cases associated either with pyloric kink or with dilatation of the duodenum. The dilatation of the duodenum showed the simplicity of the relief of cases often diagnosed as chronic neurasthenia and many other conditions. The symptoms found by him included pancreatic juice and bile in the stomach. The patients were usually very much depressed. To relieve the condition, one should resect the right half of the colon, and suture the ileum to the transverse colon. The removal of the right half of the colon would not always relieve the patients of constipation and stasis in the colon. He had never resected the entire colon, but he believed that if one wished to restore the patient to a normal condition one must do this. In some cases two operations might be necessary.

Dr. MAX EINHORN said that he had in mind a condition somewhat similar to one that Dr. Bloodgood had mentioned—a group of patients who had slight stagnation of the colon, in combination with bile and pancreatic juice in the stomach. On examining the stomach, he said, one would always find more residue of fat. In his cases there was an obstruction of the duodenum below the papilla of Vater. The main symptoms were severe pain and vomiting. The usual operation for this had formerly been gastroenterostomy below Vater's papilla. No ptosis, as such, he thought, should be attacked by operation. If there were symptoms an operation might be performed for their relief. There might, he thought, be instances in which operations on the colon were of benefit, but he considered it an unnecessary procedure to subject a patient who was simply constipated to an operation for prolapse of the colon, or any point of the intestines. There must be something else present, in order to render such an operation justifiable.

Dr. JAMES TAFT PILCHER said that another method that was applicable in these cases consisted in raising the stomach into the epigastrium and also raising the colon, putting a row of six or eight sutures in the mesentery of the transverse colon, and suturing it across the abdomen, two inches above the umbilicus. At the same time the drag and the stasis that the condition occasioned should be removed. In repeated cases Dr. Pilcher's results from this method of procedure had been satisfactory.

Dr. JACOB KAUFMANN remarked that a very important question was: What is the primary factor that develops these conditions? Dr. Bloodgood's cases had shown none of the conditions mentioned by Dr. Einhorn, and Dr. Kaufmann had seen few cases of the type presented by Dr. Bloodgood. He thought, however, that surgical intervention might be warranted in certain cases. One should consider the cause of the development of such pronounced types of atomy and dilatation.

Dr. WALTER B. CANNON pointed out the fact that most of the structures in the abdominal cavity were readily movable, and said that if they had approximately the specific gravity of water he had some difficutly in seeing how there could be any great drag of one structure on another.

Dr. ALLEN ARTHUR JONES asked whether Dr. Bloodgood had observed relief from symptoms such as he had described in cases operated on for floating kidney. Dr. Jones had seen two cases in which there had been very signal relief from symptoms produced by a nephrorrhaphy, and described a considerable part of their success to the fact that the transverse colon and cecum had been lifted.

Dr. CHARLES G. STOCKTON thought that in these cases the physician should consider the state of the abdominal

walls. If there were marked tire and relaxation, it would be difficult to obtain that standard of intra-abdominal pressure to which Dr. Cannon had referred.

Dr. G. A. FRIEDMANN stated that gastroptosis and enteroptosis were constitutional diseases. Many patients, besides these gastric and intestinal symptoms, had many general symptoms, and most of them were anemic. He could not see, therefore, how an operation could improve such a condition, general treatment for the anemia being necessary. A patient with a gastroptosis might acquire an organic disease, and this might be remedied surgically, but in the pure cases of gastroptosis he did not believe that one should advise surgical interference.

Dr. HENRY W. BETTMANN said that nothing could be clearer than that a merely anatomic relation of the organs could not be a matter of great importance. The point of drag was one that had worried him for a number of years. It was inconceivable to him that the lower abdominal organis could drag on the upper. If that were the cause of the symptoms the placing of the patient on his back for a number of days or weeks would overcome the symptoms. He thought that the idea of the drag was erroneous and would have to be abandoned. None of the patients whom he had seen and who had had the colon raised and attached to the abdominal wall, the pylorus also being raised, had been materially benefited, and some had been made considerably worse by that procedure. He believed that the use of the *x*-ray had led to an increase in the number of operations performed by persons who did not thoroughly understand gastroenterological problems, without a corresponding benefit, and thought that surgeons should go slowly in this department. One patient would be benefited by the operation, while twenty would be either not benefited or made worse.

Dr. A. L. BENEDICT drew attention to the fact that there was a difference between a stomach that was in a state of ptosis and one that was normal in its relations, but dilated. In many case reports, he said, the word ptosis referred merely to a slight dilatation of the stomach and a sagging of its greater curvature.

Dr. LUDWIG W. KAST said that the greater curvature might be five or ten centimeters below the level of the umbilicus and yet the stomach might still perform all its work. It might take a little longer to do this, but the stomach would still be within the physiological limits. A stomach with a less lowered greater curvature might not perform the work required. One should differentiate between the position of the stomach and the function of the stomach. Dr. Kast asked whether Dr. Bloodgood advocated operation for change in position or for change in function.

Dr. BLOODGOOD, in closing, said that when there was an ulcer or a cancer of the colon, one could resect the diseased part and restore continuity. If there existed a volvulus of the signoid one could untwist it and relieve the symptoms. It was a perfectly feasible operation to resect the stomach. In nine of the twenty cases that he had before referred to, there had been definite gastric symptoms. The stomach did not empty itself, and the patients could not eat. After resection of the stomach and after duodenal dilation, the patients were able to eat. In his study of this subject Dr. Bloodgood had tried to find an anatomical basis, so as to relieve the symptoms. So far as the stomach was concerned, it was settled; but so far as the colon was concerned, it was not.

Hyper- and Hypotonicity of the Vagus and Sympathetic Nerves as Causes of Disease of the Digestive Tract.—Dr. J. C. HEMMETER of Baltimore, Md., stated that just as there existed a myogenic and neurogenic tonus, so there was also a secretory tonus, which had not been so thoroughly studied. The latent period of secretion after stimulating the sympathetic or the chora tympani nerve supplying the submaxillary gland was greater after the nerve control over this gland had been abolished for several hours by freezing either nerve or by cutting it. This preparedness for giving a ready secretion upon adequate stimuli might be defined as secretory tonus. The threshold of stimulation also rose in experiments in which the gland had been cut off from the nerve-supply for several hours. The entire neuromuscular apparatus, both voluntary and involuntary, was in a condition of tonic activity. Dr. Hemmeter explained, due to the continual inflow of sensory impulses to the motor neurones of either spinal cord or brain, or both. The doctrine of "vagotonia" and "sympathicotonia" assumes that the disturbances of peristalsis, innervation, and secretion in the digestive tract were due to permanently altered tonicity of the vagus and sympathetic; that is, either an exaggerated, augmented, or a diminished tonicity of these nerves existed.

Dr. JACOB KAUFMANN believed that a study of the physiology of the digestive tract and its disturbances would help a great deal more in understanding stagronitestinal disorders and the treatment of these conditions than would the mere consideration of anatomical or pathologico-anatomical facts. Cases of irregular growth might be attributed, he thought, to an interference with the activity of the liver by lack of thyroid secretion. By studying more specifically the disturbances either of the pneumogastric nerve or the sympathetic nervous system in connection with the internal secretion, one would be helped very much in solving these problems.

Dr. LUDWIG W. KAST remarked that there was an application of the neurological and secretory facts to the clinical problems. The antagonism between the two nervous systems created a condition of equilibrium in different directions in the musculature of the secretory apparatus. One frequently saw conditions in which the patient had increased hyperacidity, and in which the motility was very intense. Without having duodenal ulceration, these patients had hunger-pains, the contraction having reached such a degree as to become painful. After the test-breakfast was evacuated, the secretion still went on without having any stomach-contents to act upon. That was the time when the opportunity was given for the development of duodenal ulceration. Atropin benefited this class of cases very much symptomatically.

Dr. S. J. MELTZER said that in such a vague field as gastroenterology, so long as the investigators had confined themselves to anatomy and chemistry, they had had some facts to go on, but when they commenced to take up the functional aspect of the matter, they were making wild hypotheses. The alleged facts that they had to go on had not been verified.

Dr. WALTER B. CANNON pointed out the possibility that lack of tonus or diminution in it might be due to failure of the vagus to deliver the impulse producing tonus, or to the action of the thoracico-lumbar in delivering the impulse that reduced the tonus.

Dr. HEMMETER, in closing, stated that atropin would relieve cases caused by high tension of the vagus system. It was clear, also, he said, how overstimulation of the vagus could produce gastric ulcer, because if one stimulated around the nucleus of the vagus and kept it up, this would lead to conditions that destroyed the epithelium of the stomach.

The History of Radiology of the Digestive Tract for the Diagnosis of Ulcer and Carcinoma.—Dr. J. C. HEMMETER of Baltimore, Md., said that he had published some experiments of his aiming at photography of the human stomach by means of the Roentgen ray in the *Boston Medical and Surgical Journal* for June 18, 1896. Investigations showing the possibility of photographing conditions accompanying cancer, and ulcer by the *x*-rays have been confirmed in this country and in Europe. Mathematical, or technical, and personal, or functional, errors had to be avoided, he said, in the execution of the method Failures to accomplish results by it had been due to one or other of these errors.

A Few Important Points in X-Ray Examination of the Digestive Tract.—Dr. FRANKLIN W. WHITE of Boston, Mass., treated this subject from the clinician's standpoint. He said that examination of the mechanical factors of digestion was of the greatest importance in diagnosis. He considered the *x*-ray a brilliant method of examination. Comparisons with other methods of testing the motility of the stomach in ptosis, spasm, ulcer, and cancer showed a great variability in the results; and there was need for great caution in interpreting them. There was a great necessity for a standard bismuth meal. A study of peristalsis was possible, he stated, only with the *x*-ray. *X*-ray tests of secretion were of small value. The duodenum was very difficult to examine, and its examination might be assisted by artificial distension. Delayed motility was of great importance. The colon might be successfully examined by giving a bismuth meal and administering an enema; but great care must be exercised, or the value of the results would be impaired by various sources of error. The *x*-ray should be combined with other methods of examination in making the diagnosis.

Dr. JOHN A. LICHTY asked how much and what kind of bismuth should be used for the meal. He had not been able to get an entire filling up of the stomach. In his opinion, the *x*-ray would never replace the stomach tube, even though it gave more definite outlines, because he considered the stomach-tube superior in some respects. He had had a case that appeared from the *x*-ray to be cancer of the stomach, but that turned out to be cancer of the colon. He wondered whether the bismuth itself did not interfere with the normal emptying of the stomach by

neutralizing the hyperacidity that existed in many cases.

Dr. JOHN C. HEMMETER said that quite a number of cases of bismuth poisoning had been reported after these examinations and that he had directed his attention to seeing whether something else could not be substituted for the bismuth. He believed that bismuth, when used for the relief of ulcer, must interfere with the impulses from the stomach, and thought that the delayed peristalsis might be due to that. He had tried, in place of the bismuth, aluminum silicate, calcium carbonate, and calcium phosphate; and had succeeded in obtaining good shadows with them. None of this material was absorbed. He said that there were two errors that hindered progress, the mathematical and the functional. The former was in the apparatus; and the latter in the person. The exposures had been made to occupy only a few seconds.

Dr. SEYMOUR BASCH mentioned the fact that for the last few years barium had been used abroad with good results. It was, he said, cheaper than bismuth, and no poisoning had resulted from its use. There had been no bad symptoms in the thousands of reported cases in which it had been used, and he thought that Americans should take it up.

Dr. WALTER B. CANNON had used barium several years ago, in order to determine its effect on peristalsis, and had obtained the same results with it as with bismuth. He thought that if everyone would retain for record the *x*-rays, and if the surgeon would record what he had found at operation and have *x*-rays taken of every specimen removed, the *x*-ray would be proved to be an important instrument of precision. He felt confident that a combination of the *x*-ray with bismuth above and below would absolutely demonstrate the position of the carcinoma.

Dr. WHITE said that he used two ounces of bismuth to one pint of buttermilk, as a vehicle. The tube he considered also of value as a control. Poisoning by bismuth, he thought, to be a thing of the past, it having occurred at the time when nitrate of bismuth was used.

The Lactose Test Meal in the Establishment of Alimentary Hypersection in the Diagnosis of Ulcer.—Dr. DUDLEY D. ROBERTS of Brooklyn, N. Y., gave at some length the results of studies carried on with the lactose test-meal since the time of its presentation to the Association, the previous year, when used in normal cases, in enteroptotic cases with different conditions of secretion and motility, in the various surgical conditions that cause gastric complaints, and in ulcer. Under normal circumstances there remained, one hour after the ingestion of the test-meal, not more than 50 c.c. With this, there was found from 50 to 100 c.c. of gastric juice. There was then a normal ration of more than 1:1.5 between the residue of test-meal and the gastric juice still in the stomach. From his experience he thought that it might be assumed that when the gastric-juice residue was three times that of the test-meal residue, there was hypersecretion of marked degree. In all cases there was alimentary hypersecretion. In some instances this was even up to the ratio of 1:9. In one case of chronic appendicitis there was a hypersecretion with a ratio of 1:3.1. This occurred in only one instance. On the ulcer cases the degree of hypersecretion was low.

The Healing of Gastric and Duodenal Ulcer with Bismuth.—Dr. CHARLES D. AARON of Detroit, Mich., stated that bismuth had been used as a medicinal agent since its introduction by Oidier, of Geneva, in 1786, although it was Kussmaul who had systematized its use. The anodyne effect of this drug was univesally conceded, and research work on this subject had furnished evidence that the protection afforded by bismuth subnitrate in gastric and duodenal ulcer was both physical and chemical. Experiments on dogs showed that bismuth, a few hours after its administration, was finely distributed over the gastric wall. This acted as a protective layer, and might remain undisturbed for several days. The chemical effect of bismuth subnitrate, he said, was due to the liberation of nitric acid during its decomposition. The treatment with bismuth could never be regarded as a substitute for the rest cure in the treatment of ulcer. Its general purpose was to support the rest treatment, especially when the latter failed, or when the ulcer took a chronic course, tended to relapse, or gave rise to considerable pain; and, furthermore, in the treatment of outdoor patients.

The Gastrointestinal Disturbances Observed in Pernicious Anemia.—Dr. JULIUS FRIEDENWALD of Baltimore, Md., gave the results of observations of his extending over a series of fifty-eight cases of pernicious anemia, in all of which gastrointestinal symptoms had been noted. From a study of these cases, it was evident to him that a large proportion were attended with gastrointestinal disturbances, as well as with an absence of gastric secretion. There was present an achylia gastrica in about seventy per cent. of the cases, and even in the stage of apparent recovery the gastric secretion did not return. In a smaller proportion of cases (twenty per cent.), there was a marked diminution in the secretion, and in a few instances (about ten per cent.) it remained normal. He thought it quite probable that the poison that produced the hemolysis was the same that was also responsible for the alteration in the gastric secretion.

A Contribution to the Etiology of Pernicious Anemia.—Dr. JAMES TAFT PILCHER of Brooklyn, N. Y., had observed 433 cases of abdominal complaints in which the symptom of achlorhydria hemorrhagica gastrica was present and wished to offer for consideration the following facts: (1) Achlorhydria is merely a symptom denoting chronic gastritis; (2) it is usually evoked through extragastric irritative factors, which are often susceptible of correlation; (3) there are present in such stomachs great numbers of bacteria, among which streptococci are especially to be noted; (4) practically all recorded cases of authenticated pernicious anemia present the symptom of achlorhydria and the presence of occult blood in the stomach extract; (5) thirty-four instances of pernicious anemia were noted in patients presenting the symptom of achlorhydria hemorrhagica gastrica; (6) lack of hydrochloric acid and the presence of occult blood were shown to exist for a year before any blood changes were noted in a few cases, paresthesia was evidenced some time previous to blood impairment in some, and the patients had suffered for years from chronic gastrointestinal complaints in others; (7) eighty per cent. of the cases of pernicious anemia have increased temperature at some time during the course of the disease; (9) pure cultures of streptococci have been found in patients with pernicious anemia who were running a fever; (10) bacterial hemolysins and other toxic substances are known to produce anemia resembling the pernicious type; (11) efforts to control the bacterial growth in the gastrointestinal tract have caused complete remissions in this disease in some instances; (12) the phenomena of the blood-picture characteristic of pernicious anemia may be explained by the action of toxins, which impair the formation of antibodies until a bacteremia is produced; (13) the toxins being eliminated by the profuse flora in the gastrointestinal tract, the impairment of bodily resistance is accomplished through their absorption; (14) the reactive and combative ability of patients suffering from achlorhydria differs in different cases, and on this ground might be explained the relative rare occurrence of pernicious anemia. The author thought that these facts would suggest that there might be some direct correlation between the profuse growth of bacteria and the onset of a dyscrasia of the blood known as pernicious anemia.

Pernicious Anemia.—Dr. G. W. MCCASKEY of Fort Wayne, Ind., said that the investigations of the last few years had placed pernicious anemia in a clearer light and indicated the direction in which a final solution of the problem should be looked for. He considered the classification of the different anemias as being unsatisfactory, as yet, the facts that formed the groundwork of the clinical and pathological conception of pernicious anemia having reference to the blood-picture, the data in regard to hematogenesis, and certain points in the clinical history and therapeutic results. There were several facts that appeared to him to make the exclusive theory of toxic irritation of the bone-marrow untenable. In the experimental anemia produced in animals by ricin poisoning, the curious fact has been established that relatively large doses, producing a rapidly progressive anemia, were associated with a normoblastic bone-marrow regeneration; while repeated small doses, acting more slowly, produced mealoblastic degeneration. Undoubtedly, he thought, something besides the specific action of a toxin or group of toxins was necessary, and he believed that in embryological faults or tendencies a plausible explanation, at least, might be sought. The existence of such special tendencies was strictly in accord with well-known biological laws and squared with clinical observations.

Dr. J. A. LICHTY said that all seemed to agree that the underlying basis of anemia was some toxin, but that no one knew what produced the toxin. Gastric disorders, nervous affections, etc., formerly thought to be etiological factors, were recognized now as symptoms. It had been his experience that all these casese had chronic gastritis associated with them, and he wished to ask Dr. Pilcher whether he had meant that all his cases of anemia had had chronic gastritis. Dr. Lichty had found a gastric condition in certain cases in which pernicious anemia was present; for example, in the course of typhoid fever. He

added that of seventy or eighty patients that he had treated for this condition, all had died but one, and that one probably would do so. This latter case was the only one in which there was no fault with the blood.

Dr. A. L. Benedict said that while pernicious anemia was usually associated with achlorhydria hemorrhagica gastrica, this was not always so. In his opinion, pernicious anemia was simply a bad case of anemia, in which it was hard to trace the exact cause.

Dr. Jacob Kaufmann thought that Dr. McCaskey had ably expressed the fact in saying that pernicious anemia was produced by toxins in the blood. The question, however, was where the toxins came from. Taking the view of Dr. McCaskey, one could readily understand that there was a certain group of cases in which the toxin originated in the gastrointestinal canal, chronic gastrointestinal disorders being usually considered to produce the picture of pernicious anemia. Dr. Kaufmann, however, called attention to the fact that the gastrointestinal canal was not only secretory, but also excretory, and said that it was worth while to look into these questions, because the treatment depended on what one considered as the cause in each specific instance. He had seen excellent results in certain cases of pernicious anemia in which gastrointestinal disorders were not the cause of the disease, derived from blood-cultures.

Dr. Willy Meyer said that he had done transfusion of blood in two cases of pernicious anemia during the previous year. In both cases the immediate result was excellent, but later one of the patients died, although the other remained improved.

Dr. Pilcher did not think that every case into which the alkaloid substance had been introduced would develop symptoms of pernicious anemia, as some persons reacted to the same substances differently from others. This was explained by idiosyncrasy. In regard to Dr. Lichty's not finding any chronic gastritis in some of his cases of pernicious anemia, Dr. Pilcher said that, while he did not know what pathological data Dr. Lichty had on that subject, he wished to state that those examining hundreds of cases found that all had pathological evidence of marked atrophy and chronic gastritis of the stomach mucosa.

Dr. McCaskey said that he thought that they got into the gastrointestinal tract incidentally or accidentally. He considered them important in the etiology of the disease, but said that it was hard to determine how large was the part of the bacteria in pernicious anemia. A negative finding was usually the result of the blood-culture. The reason for the existence of achlorhydria was that there was not enough secretion to saturate the proteins. It was a condition of lowered quantity of secretion, and this might come from many causes.

Carcinoma of the Esophagus from the Standpoint of Intrathoracic Surgery.—Dr. Willy Meyer, of New York City thought that if progress was to be made in the radical surgical treatment of carcinoma of the esophagus, the patients must come for operation earlier than at present, and their general health must be sufficiently preserved to warrant resection of the growth. He said that the diagnosis was usually not difficult, even in the early stages. The diagnosis having been made, the cancer must be excised without regard to its location in the course of the esophagus. It commonly covered too large a portion of the tube to render possible the ideal operation, but this resection was often necessary to enable one to make a resection within healthy tissue later on. The feasibility of the latter procedure, with good functional results, had been proved. His experience had shown that the condition in which patients were received did not permit of an operation of such magnitude as was required at one sitting. A two-stage operation was necessary, the details of which he was working out.

Dr. Jesse S. Myer of St. Louis, Mo., remarked that there was no question in his mind but that the operation on carcinoma of the esophagus was a coming one. Everything, he thought, depended on getting hold of the patient early. There was no way of making a diagnosis of carcinoma of the esophagus without the esophagoscope. The use of this instrument was so simple and the suffering of the patients from their disturbances was so intense that they were ready to permit it to be employed. Dr. Myer urged the use of the esophagoscope by every physician doing extraintestinal work. If there was an element of doubt as to the exact condition, a section should be taken out and examined.

Dr. Walter B. Cannon of Boston, Mass., from a physiological point of view, did not know of any reason why one should not cocainize above the vagus nerve, so that the innervation of the heart would not be disturbed on account of mechanical manipulation of the nerve. In a variety of animal observations, he had found that if the laryngeal nerves were cut on both sides, there would be a slight rapidity of the heart, but lower respiration. There would be a temporary loss of tone, in the absence of the vagus stimuli in the stomach and intestines.

Dr. Seymour Basch had been impressed with the apparent simplicity of performing these operations, if they were done early. Of course, it would be impossible to tell patients at this early period that they had a case of carcinoma. If the use of the esophagoscope were as easy as Dr. Meyer had said, there would be no difficulty, Dr. Basch thought, in employing it; but his experience had been that this operation was not such a simple matter. He considered it barbarous, and said that all knew it to be dangerous.

Dr. Willy Meyer stated that Dr. Sharp, of Berlin, had devised a sound that had a rubber balloon, which was to be blown up with water. This instrument was for use in early diagnosis, and its inventor claimed that in no case could he do his diagnosing so early with the esophagoscope as with this sound, which Dr. Meyer said was used by him at the German Hospital. If both pneumagastrics were involved, both could not be divided. If, in exceptional cases, this could be done and the patient would not die from paralysis of the heart or lungs, it would mean a great step forward. He thought that all those working inadequately for certain ends should combine their forces, so that, no matter what their specialties might be, one goal might be before them all.

Dr. Walter B. Cannon said that he did not mean to have the inference drawn from his remarks that it was perfectly feasible to cut both pneumogastrics without producing any harmful effects. He did not think that there would be definite effects on the heart and lungs produced by cutting them, if the laryngeal were left. It was in relation to the alimentary canal, he said, that the trouble arose, there being disturbance of movement and secretion. By carefully washing out the stomach and avoiding the production of epithelioma, a patient would live for a year with both pneumogastrics cut; but it required the greatest care to bring about such a result.

Dr. Willy Meyer explained that, in view of the extreme thinness of the esophagus, the nerves became intimately adherent to the tumor; so that the greatest delicacy of manipulation was necessary. In some cases, it was impossible to operate. If there was support, the operation could be done.

Crypts and Columns of Morgagni: Their Relationship to Rectal Diseases.—Dr. James P. Tuttle of New York City, stated that the semilunar, or anal, valves (called, also, the pockets, or crypts, of Morgagni) dipped down between the mucocutaneous lining of the anal canal and extended more or less deeply into its caliber. The rectal columns attached their base at the upper margin, between the valves, and furnished an exit for the veins of the rectum to anastomose with those of the anus. To these two structures, the crypts and columns of Morgagni, especially the latter, he wished to call attention as influencing rectal diseases such as pruritus ani, hemorrhoids, chronic spasmodic sphincter, obscure fissure, invisible ulceration of the anal canal, and skin tabs. In operating for any of these conditions, he said, one often failed to cure them unless these structures were properly attended to.

Dr. Seymour Basch said that there were three symptoms that were almost constant in these cases—pain, bleeding and itching; but that there were intervals of cessation of one, two or all of these symptoms. There existed many anal canals that one could not thoroughly inspect without a general anesthetic. In probably half of his cases, he could readily locate these points with the use of the speculum. The points to look at were in the right and left posterior quadrants and the anterior median line. Occasionally they were found elsewhere. There might be only one of these that was pathological. The symptoms that these produced were often referable to the remote parts of the body. He attributed his failures to relieve entirely anal pruritus in some cases to the fact that he had attempted to do it under local anesthesia. Pruritis, he said, was not a disease, but a symptom. In some cases, there were no visible external manifestations; while in others, there were distinct skin changes.

Dr. Willy Meyer asked whether Dr. Tuttle considered every crypt into which he could enter his probe pathological.

Dr. Tuttle said that he did not consider every crypt diseased. It depended on how deep the probe would go in. If it went no farther than the subcutaneous tissues, he did not consider the crypt diseased; but when a probe drew

blood in one of the crypts or excited itching or pain, then he considered that there existed a pathological condition. He stated that there was no organ of the body too remote to be affected reflexly by one of these painful and concealed ulcers, and this applied to the reflex action of the crypts. In constipation or obstipation, stretching of the sphincter might relieve the patient for awhile; but the condition would return, if one of the crypts was diseased. Cutting got at the bottom of the trouble, which stretching did not do. The so-called watery urethral discharge was due, in a good many cases, to obscure fissure or inflammation in the front sinus. He had successfully treated, within the last six months, seven of these cases.

The following officers were elected for the ensuing year: *President*, Jacob Kaufmann, of New York City; *First Vice-President*, Joseph C. Bloodgood, of Baltimore, Md.; *Second Vice-President*, William Gerry Morgan, of Washington, D. C.; *Secretary and Treasurer*, Franklin W. White, of Boston, Mass. The date and place of the next annual meeting have not been decided upon.

State Medical Licensing Boards.

STATE BOARD EXAMINATION QUESTIONS.

Arizona State Board of Medical Examiners.

ANATOMY.

1. What arteries supply the heart with blood, and where do they originate?
2. Describe the thoracic duct.
3. Describe the thyroid gland, including blood and nerve supply.
4. Where is the fissure of Sylvius, and what artery does it contain?
5. What muscles assist in (*a*) mastication; (*b*) deglutition?
6. Describe the diaphragm, its principal openings, and nerve supply.
7. Name the bones of the head.
8. Name the ligaments of the hip joint.
9. State (*a*) the nerve supply of the rectum and (*b*) the blood supply of the rectum.
10. Describe the inguinal canal.

PHYSIOLOGY.

1. What part of the nervous system is involved in stammering speech?
2. Describe the pneumogastric nerve and its functions.
3. Describe lymph and how it is formed.
4. Classify foods and give a general description of each.
5. What is the pulse and what do its varieties signify within physiological limits?
6. Describe the physiology of menstruation.
7. Briefly describe visual accommodations.

HYGIENE.

1. What means should be taken to prevent spreading of smallpox?
2. What means should be taken to prevent spreading of diseases in schools?
3. What regimen should be enforced in the sick room of tuberculous patients?
4. Why should we abolish the common drinking cup?
5. Describe the proper care of foods in stores and markets, and why?
6. What are the dangers from drinking water from an unprotected watershed?
7. Why are plumbing fixtures ventilated?

MATERIA MEDICA.

1. Define materia medica and therapeutics.
2. Define tincture, extract, and ointment.
3. By what process and from what source is sugar of milk principally obtained?
4. State the source of ichthyol and give its uses in medicine.
5. Give the Latin title of paregoric; name all its constituents, and give the amount of the principal drug in one ounce of the mixture.
6. Give the composition of the official compound cathartic pill.
7. Name the alkaloids of nux vomica.
8. What is incompatibility in medicine, and what are the different kinds of incompatibility? Give an example of each.
9. Describe four diuretics and give dose of each.
10. What class of acids would you use to acidify alkaline urine? Name one and give dose.

CHEMISTRY AND TOXICOLOGY.

1. What element occurs most abundantly in Nature and what are three of its more common combinations?
2. Atmospheric air is composed of what elements and in what proportion by volume?
3. Give definition of acids and formulæ of six acids commonly used in medicine.
4. Define a salt and explain the difference between normal and basic salts.
5. What are hydrocarbons? Mention three.
6. Give difference between alcohols and ethers.
7. What chemical elements occur in all proteids? Name three common proteins.
8. What are the common sources of acetic acid?
9. Name the normal constituents of human milk and their approximate proportions.
10. Give treatment of arsenic poisoning.
11. What is the chemical antidote for carbolic acid poisoning? What would you use for physiological antidote?
12. What is best treatment for poisoning by strong mineral acids?

PATHOLOGY.

1. Define hyperemia and give varieties and causes.
2. Define transudate and exudate with examples of both.
3. Define (*a*) embolism, (*b*) thrombosis; examples.
4. Inflammation—define and give symptoms.
5. Describe the pathological findings in typhoid fever.

ANSWERS.

ANATOMY.

1. The arteries which supply the heart with blood are the right and left coronary arteries, which arise from the ascending aorta.

2. The *thoracic duct* extends from the second lumbar vertebra, where it commences by a dilatation, the *receptaculum chyli*, to junction of left internal jugular with left subclavian vein. The abdominal part is placed on the front of the body of the second lumbar vertebra, behind and to the right side of the aorta and on the inner side of the right crus; it then enters the thorax through aortic opening, on the right side of aorta, lying between it and the vena azygos major, and passes upward to right of aorta on right intercostal vessels. Opposite the fourth dorsal vertebra it passes to the left behind arch, and runs along the left side of the esophagus, behind the left common carotid artery. At the level of the seventh cervical vertebra it turns outward, and, passing behind left internal jugular and crossing first part of left subclavian artery, arches over the apex of the left pleura to open at the angle of union of the left internal jugular and left subclavian veins. (From *Aids to Anatomy.*)

The *portions of the body drained by it* are: Both lower limbs; abdomen, except upper surface of the liver; left half of thorax; left side of head and neck, and left upper extremity.

3. The *thyroid gland* consists of two lateral lobes and an isthmus; it is situated at the front and sides of the neck. The lobes extend from about the middle of the thyroid cartilage to the fifth or sixth tracheal ring; the isthmus generally covers the second and third tracheal rings. The lobes measure about 2x1¼x¾ inches; the gland usually weighs about one ounce. *Blood supply:* Superior, and inferior thyroid arteries, with thyroidea ima; and superior, middle, and inferior thyroid veins. *Nerve supply:* Branches from the inferior laryngeal nerve, and from the middle and inferior cervical ganglia of the sympathetic.

4. The *fissure of Sylvius* begins at the base of the brain at the outer part of the anterior perforated space, passes outward, backward, and upward, and ends in the parietal lobe. This is the horizontal limb of the fissure. From the anterior part of the horizontal limb a short fissure extends forward and upward into the frontal lobe. This is the vertical or ascending limb of the fissure. The fissure separates the frontal and parietal lobes of the brain from the temporal lobe. It lodges the middle cerebral artery.

5. *Muscles of mastication:* Masseter, temporal, external pterygoid, internal pterygoid, and buccinator. *Muscles of deglutition:* Buccinator, hyoglossus, styloglossus, palatoglossus, palatopharyngeus, azygos uvulæ, tensor palati, levator palati, stylopharyngeus, stylohyoid, geniohyoid, mylohyoid, thyrohyoid, digastric, constrictors of pharynx, and the intrinsic muscles of the tongue.

6. The *diaphragm* is a musculofibrous septum which divides the thoracic from the abdominal cavity; it is fan-shaped; the broad, elliptical portion is horizontal, and the crura are vertical. It is attached to the ensiform, to the internal surfaces of the lower six costal cartilages, to bodies and intervertebral substances of first, second, and third lumbar vertebræ. Its *openings* are: (1) The aortic, transmitting the aorta, vena azygos major, and the thor-

acic duct; (2) the esophageal, transmitting the esophagus, pneumogastric nerves, and some small esophageal arteries; (3) the opening for the vena cava, transmitting the inferior vena cava, and small branches of the right phrenic nerve; (4) the right crural, transmitting the right splanchnic nerves; (5) the left crural, transmitting the left splanchnic nerves and the vena azygos minor. *Nerve supply:* The phrenics, lower intercostals, and the phrenic plexus of the sympathetic.

7. The *bones of the head* are: Occipital, two parietal, frontal, two temporal, sphenoid, ethmoid, two nasal, two superior maxillary, two lacrymal, two malar, two palate, two inferior turbinated, inferior maxillary, and vomer.

8. The *ligaments of the hip joint* are: Capsular, ilio-femoral, teres, cotyloid, and transverse.

9. RECTUM. *Nerve supply:* From sacral plexus, fourth sacral, and inferior hemorrhoidal nerves, and from inferior mesenteric and hypogastric plexuses. *Blood supply:* Superior hemorrhoidal, middle hemorrhoidal, and inferior hemorrhoidal arteries and veins.

10. The *inguinal canal* is an oblique canal situated a little above and running parallel with Poupart's ligament. It is from an inch and a half to two inches in length, runs downward and inward, and extends from the internal abdominal ring to the external abdominal ring.

Its *boundaries are: In front:* the skin, superficial fascia, aponeurosis of the external oblique, and (for its outer third) the internal oblique. *Behind:* the conjoined tendon, the triangular fascia, the transversalis fascia, subperitoneal fat, and peritoneum. *Above:* the fibers of the internal oblique and transversalis. *Below:* Poupart's ligament and the transversalis fascia.

Contents: the spermatic cord in the male, and the round ligament in the female.

PHYSIOLOGY.

1. The hypoglossal nerve and the motor centers for speech in Broca's convolution (in the left cerebral hemisphere) are concerned.

2. PNEUMOGASTRIC NERVE. *Superficial origin:* Groove between restiform and olivary bodies. *Deep origin:* Nuclei in floor of fourth ventricle. *Distribution* is shown by the names of the branches: Meningeal, auricular, pharyngeal, superior and inferior laryngeal, cardiac, pulmonary, esophageal, and gastric. *Function:* It supplies (1) *motor* influence to the pharynx and esophagus, stomach, and intestines, to the larynx, trachea, bronchi, and lungs; (2) *sensory* and, in part (3) *vasomotor* influence, to the same regions; (4) *inhibitory* influence to the *heart;* (5) *inhibitory* afferent impulses to the *vasomotor center;* (6) *excito-secretory* to the salivary glands; (7) *excito-motor* in coughing, vomiting, etc.

3. LYMPH. *Origin:* There are two theories as to the formation of lymph: (1) That it is formed from the blood plasma by the processes of filtration, diffusion, and osmosis. (2) That in addition to these, the endothelial cells of the capillaries exercise some influence. *Description:* Lymph is a colorless, albuminous fluid, alkaline in reaction, with specific gravity of about 1015, containing lymph corpuscles, and coagulating when drawn from its vessels. *Composition:* Proteins (serum albumin, fibrinogen), sugar, sodium chloride and carbonate, water, urea fat. *Function:* To provide cells and tissues with materials necessary for their growth, repair, and functional activities; and to receive and carry away their waste products.

4. *Foods are classified* as:

- Organic
  - Nitrogenous—Proteid
  - Non-nitrogenous
    - Carbohydrates
    - Fats
- Inorganic
  - Salts.
  - Water.

FOOD.	FUNCTIONS.
Proteids.	
1. All substances containing nitrogen, of a composition identical with, or nearly that of albumin; proportion of N to C being nearly as 2 to 7.	Formation and repair of tissues and fluids of body. Regulation of absorption and utilization of oxygen. May also form fat and carbohydrate, and yield energy sometimes. In most foods the above, both animal and vegetable, are largely converted into albumoses and peptones during digestion. These perform the above functions less perfectly, or only under particular circumstances.
2. Substances containing a larger proportion of N are apparently less nutritious; proportion of N to C about 2 to 5½.	These substances appear essentially as regulators of digestion and assimilation, especially with reference to the gelatin group.
3. Extractive matters, such as are contained in the juice of the flesh.	
Carbohydrates.	
Substances containing no N, but made up of C, H and O; the O being exactly sufficient to convert all the H into H_2O.	Production of energy and animal heat by oxidation. Form fats and possibly some proteids.
Fats.	
Substances containing no N, but made up of C, H and O; the proportion of O being *less* than sufficient to convert all the H into H_2O.	Supply of fatty tissues, nutrition of nervous system; supply of energy, and animal heat by oxidation.
Salts.	Support of bony skeleton, supply of HCl for digestion, regulation of energy and nutrition.

(Notter and Firth's *Hygiene.*)

5. The *pulse* is a wave of expansion which travels along the arteries, and is due to the discharge from the left ventricle of a volume of blood, during systole, into the already full arterial system. The points to be observed are: (1) Its *frequency;* this gives the rate of the heart beats. (2) Its *compressibility:* this denotes the force with which the heart is beating. (3) Its *tension;* this denotes the peripheral resistance, and also the state of the arterial walls. (4) Its *regularity* or *rhythm:* this denotes the regularity (or otherwise) of the heart's action in force or rhythm. The average rate during infancy is about 120 per minute; during youth, about 80; and during old age, about 60. The normal ratio of pulse to respiration is about 4:1.

6. *Menstruation* is a periodic disturbance in the female characterized by a bloody discharge from the uterine cavity; it occurs periodically during the time of the woman's sexual activity, but is temporarily suspended during pregnancy and early lactation. The relation existing between ovulation and menstruation is not known. The two processes are usually coexistent, but they may be independent of each other. The following theories have been held: (1) Menstruation is dependent upon ovulation; (2) ovulation is dependent upon menstruation; (3) they are independent of each other; (4) they both depend upon some other (at present unknown) cause.

7. "*Mechanism of Accommodation.*—The lens is an elastic structure, and when released from the flattening influence of its suspensory ligament tends to assume a spherical shape. During accommodation the ciliary muscle (especially the circular fibers) contracts, drawing forward the choroid and relaxing the suspensory ligament; this diminishes the tension of the lens capsule and allows the inherent elasticity of the lens to increase its convexity. The change in curvature affects chiefly the anterior surface of the lens. This is Helmholtz's theory and the one usually accepted. Lately Tscherning has advanced a different theory; he maintains that the ciliary muscle increases the tension of the suspensory ligament during contraction and that this causes peripheral flattening of the lens with bulging anteriorly at its center. The act of accommodation is accompanied by contraction of the pupil, and (in binocular vision) by convergence of the visual lines." (May's *Diseases of the Eye.*)

HYGIENE.

1. *To prevent spread of smallpox:* Vaccinate every one during an epidemic; isolate and quarantine the patient; no one but the physician and nurse must enter the room; the physician should put on a large washable gown when he goes in, and remove it on leaving, at the same time washing his hands in a disinfectant; the nurse, when she leaves the sick room, should also remove her clothes and put on others, at the same time disinfecting herself. Flies and vermin must be kept out of the room, doors and windows should be screened. At the termination of the disease everything should be disinfected; toys, and books, etc., are better burned; the room or rooms should be fumigated with sulphur or formaldehyde.

2. *The principal means of preventing the spread of contagious diseases in schools* are: Regular and efficient inspection by physicians; prompt exclusion and isolation of any one suffering from a contagious disease, or coming from a house where such disease is; compulsory notification of all infectious and contagious diseases; individual towels, drinking vessels, and other implements; children who have had a contagious or infectious disease or who have come from a house where such disease prevailed should not be readmitted to school until sufficient time has elapsed since the occurrence of the last case to insure safety.

3. *Hygienic precautions to be taken in treating a case of tuberculosis:* "The patient's quarters should be free from dust, and admit of spending many hours daily in the open air in all weathers, properly sheltered, and, if very ill, lying wrapped in a hammock or reclining chair. His bedroom should be well aired at night, draughts being avoided. The room should be uncarpeted and free from hangings. It should be often cleaned and periodically disinfected. All sputum should be collected in paper spit-cups, which should be burned daily. Smoking should be forbidden. Harm is done by any exercise which results in fatigue, and while fever exists it should not be attempted at all. Patients should be taught the necessity of practising lung gymnastics and breathing only through the nose, which should be kept clear and free from occlusion by secretions, or an hypertrophied catarrhal mucosa. . . . The clothing should be woolen, but not too heavy, or sweating is increased; and a flannel nightgown and loosely knit leggings should be worn at night in cool weather. The skin should be cleansed by daily sponge-baths of lukewarm alcohol and water." (Thompson's *Practical Medicine.*)

4. The common drinking cup should be abolished because its use is both dirty and dangerous; diseases are conveyed in this way.

5. The stores and markets should be constructed so as to allow abundant light and ventilation; the walls should be solid, impervious, and non-absorbent; the floors should be non-absorbent, graded, drained, and capable of being properly flushed. Animals and insects should be kept out; windows should be screened; the temperature should be regulated. Animals often impart diseases (such as intestinal parasites) to vegetables; insects and parasites transmit diseases; flies are notorious offenders in this way. The food should be pure when it is admitted to the market or store. Food should be covered when practicable. Everything in connection with food, store, market, baskets, implements, etc., should be kept clean. Implements used for one kind of food should not be used for another kind of food. All remnants of food should be promptly removed and covered up.

6. Water from an unprotected watershed is liable to pollution by sewage and waste products.

7. Plumbing fixtures are ventilated to prevent undue pressure of air or gases being exerted upon the house fixings and later on entering the house.

MATERIA MEDICA.

1. *Materia medica* is that branch of science which treats of the substances and agents used as medicines.

Therapeutics is the art of healing.

2. A *Tincture* is an alcoholic solution of a medicinal substance.

An *Extract* is a solid or semi-solid preparation produced by the evaporation of a solution of some vegetable substance.

An *Ointment* is a fatty preparation, of a softer consistence than a cerate, and intended to be applied to the skin by inunction.

3. *Sugar of milk* is obtained from the whey of cow's milk by the process of evaporation: it is then purified by re-crystallization.

4. Ichthyol is obtained from ichthyosulphuric acid, which comes from a crude oil obtained by destructive distillation of fossil fish found in the earth in the mountains of Tyrol. It is used in inflammatory conditions generally, erysipelas, rheumatism, and certain chronic skin diseases.

5. The *Latin title of paregoric* is Tinctura opii camphorata. Its constituents are: Powdered opium, benzoic acid, camphor, oil of anise, glycerin, and diluted alcohol. One ounce of the mixture contains nearly two grains of opium.

6. The *official compound cathartic pill* contains: Compound extract of coloeynth, calomel, resin of jalap, and gamboge.

7. The *alkaloids of nux vomica* are: Strychnine and brucine.

8. *Incompatibility* is that relation between medicines which renders their admixture unsuitable. Incompatibility may be chemical, pharmaceutical, or therapeutic. *Chemical incompatibility* is seen in compounding an acid with a base, and forming a salt. *Pharmaceutical incompatibility* is seen in compounding a resinous tincture with an aqueous solution. *Therapeutic incompatibility* is seen when two agents are administered together which have an opposite action, such as belladonna and physostigma.

9. *Four diuretics, with doses:* Potassium acetate, 30 grains; Potassium citrate, 15 grains; Infusion of digitalis, 2 drams; and spirit of nitrous ether, 30 minims.

10. Organic (aromatic carboxylic) acids, such as benzoic acid, or salicylic acid. Dose of benzoic acid, 7½ grains.

CHEMISTRY AND TOXICOLOGY.

1. The element occurring most abundantly in nature is oxygen. It is in combination in water, quicklime, litharge.

2. Atmospheric air is composed of 21 parts, by volume, of oxygen; and 79 parts, by volume, of nitrogen.

3. An *acid* is a compound of an electronegative element or residue with hydrogen, which hydrogen it can part with in exchange for an electropositive element, without the formation of a base. *Six acids used in medicine:* Hydrochloric acid, HCl; sulphuric acid, H_2SO_4; nitric acid, HNO_3; acetic acid, CH_3COOH; phosphoric acid, H_3PO_4; and salicylic acid, $C_6H_4OH.COOH$.

4. A *salt* is a substance formed by the substitution of an electropositive or basylous element for part or all of the replaceable hydrogen of an acid. When all of the replaceable hydrogen of the acid has been replaced, the salt is called a *normal salt*. A *basic salt* results when part of the OH groups of a base are replaced by an acid group.

5. *Hydrocarbons* are substances containing carbon and hydrogen only; as methane, ethane, propane.

6. *Alcohols* are the hydroxides of hydrocarbon radicals; whereas *ethers* are the oxides of hydrocarbon radicals.

7. All proteids contain carbon, hydrogen, nitrogen, and oxygen. *Three common proteins:* Serum albumin, lactalbumin, and keratin.

8. *Common sources of acetic acid:* Starch, sugar, gelatin, fibrin, cellulose, tartaric and citric acids.

9. *Human milk* contains: Water, about 87 per cent.; proteid, about 2 per cent.; fats, about 3 to 4 per cent.; and milk-sugar, about 6 to 7 per cent.

10. The official antidote for arsenical poisoning is freshly prepared solution of ferric hydroxide. Mix 40 parts of soluton of ferric sulphate with 125 parts of water and keep it in a large well-stoppered bottle. Rub ten parts of magnesium oxide with some cold water to a thin smooth mixture, transfer it to a bottle holding about a liter, and then fill with water to about 750 c.c. When required for use, shake the magnesium mixture, add it gradually to the ferric sulphate solution, and shake them together till the mixture is uniform.

11. The *chemical antidote* for carbolic acid poisoning is sodium sulphate; the *physiological antidote* is alcohol.

12. In poisoning by strong mineral acids, give magnesia suspended in a small quantity of water, or a strong solution of soap.

PATHOLOGY.

1. *Hyperemia* is excess of blood in the dilated vessels of a part. It is: (1) *Active* or *arterial*, when there is excess of arterial blood in a part, and (generally) an acceleration of flow. (2) *Passive* or *venous*, or *mechanical*, in which the excess of blood is in the veins and capillaries, and the flow is retarded.

Causes of arterial hyperemia: Diminished arterial resistance (fatigue, injuries, sudden removal of pressure, inhibition of the vasotonic action of the sympathetic system, and stimulation of the vasodilator nerves. *Causes of venous hyperemia:* Diminished cardiac power; dilated or obstructed or rigid arteries; absence of muscular contractions on the veins, incompetence of valves in the veins.

2. A *transudate* is a fluid within the tissues not the result of inflammation. An *exudate* is the fluid present in inflammatory conditions. Example of the former, edema, dropsy; of the latter, in inflammations.

3. A THROMBUS is a blood clot formed in the blood-vessels during life. The process is called thrombosis. *Causes:* Changes in the blood current; changes in the vessel wall; anything within the blood current not covered with endothelium. Generally more than one of these conditions are present. *Results:* Formation of emboli; infarction; heart clot, and sudden death; cerebral softening; the thrombi may become organized, liquefy, soften, become calcified, putrefy, become discolored, or may resolve.

An EMBOLUS is a plug in the circulation. The process is called embolism. *Causes:* Thrombi, detached pieces from the heart valves, microorganisms, oil, fat, parasites, pieces of new growths. *Results:* Obstruction to the circulation;

infarction, inflammation of blood-vessel; dilatation of blood-vessel.

4. *Inflammation* is the name given to the series of changes occurring in a part as the result of injury, provided that the injury does not destroy the vitality of the part. *Symptoms:* Redness, swelling, pain, heat, and disordered functions.

5. *Pathology of typhoid fever.*—"Principally inflammation of the lymphoid tissue of the lower portion of the ileum, with more or less catarrh throughout the bowels. Peyer's Patches—1st week.—Are swollen through infiltration of leucocytes, the surfaces raised and fawn-colored—the infiltration involves the submucous coat. The lesions are most numerous at the lower end of the ileum. 2nd week.—The surface becomes abraded; sloughs form, which are often bile-stained. 3rd week.—Sloughs come away, leaving ulcerating surfaces. Typical typhoid ulcers are thus formed. A few solitary glands undergo the same process. At the end of the week the ulcers begin to granulate, but healing is usually slow. Mesenteric glands may undergo the same changes, but more often become swollen, red, and tender only, or break down into cheesy masses. Other organs—Spleen and liver are enlarged; heart is soft and flabby. The voluntary muscles undergo granular degeneration; in fact, similar changes to those found after death from high temperature." (Wheeler and Jack.)

BULLETIN OF APPROACHING EXAMINATIONS

STATE	NAME AND ADDRESS OF SECRETARY	PLACE AND DATE OF NEXT EXAMINATION†	
Alabama*	W. H. Sanders, Montgomery	Montgomery	Jan. 14
Arizona*	J. W. Thomas, Phoenix	Phoenix	Jan 6
Arkansas	F. T. Murphy, Brinkley	Little Rock	..
California*	Chas. L. Tisdale, 929 Butler Building, San Francisco		..
Colorado	David A. Strickler, Empire Building, Denver	Denver	Jan. 7
Connecticut*	Chas. A. Tuttle, New Haven	New Haven	Mar. 11
Delaware	J. H. Wilson, Dover	Dover	Dec. 17
Dist. of Col'ba	Geo. C. Ober, Washington	Washington	Jan. 14
Florida*	I. D. Fernandez, Jacksonville	Jacksonville	May 12
Georgia	C. T. Nolan, Marietta	Atlanta	May ..
Idaho*	O. J. Allen, Bellevue	Boise	Apr. 1
Illinois	J. A. Egan, Springfield	Chicago	Jan. ..
Indiana	W. T. Gott, Crawfordsville	Indianapolis	Jan. 14
Iowa	G. H. Sumner, Des Moines	Des Moines	.. ..
Kansas	H. A. Dykes, Lebanon	Topeka	Feb. 11
Kentucky	J. N. McCormack, Bowling Green	Louisville	Dec. 12
Louisiana	A. B. Brown, Cusach's Bldg., New Orleans	New Orleans	June 5
Maine	F. W. Searle, Portland	Portland	.. ..
Maryland	J. McP. Scott, Hagerstown	Baltimore	Dec. 10
Massachusetts*	E. B. Harvey, State House, Boston	Boston	.. ..
Michigan	B. D. Harison, 205 Whitney Building, Detroit	Ann Arbor	June 10
Minnesota	W. S. Fullerton, St. Paul	Minneapolis	Jan. 7
Mississippi	S. H. McLean, Jackson	Jackson	.. ..
Missouri	Frank B. Hiller, Jefferson City		.. ..
Montana*	Wm. C. Riddell, Helena	Helena	Apr. 1
Nebraska	E. A. Carr, Lincoln	Lincoln	.. ..
Nevada	S. L. Lee, Carson City	Carson City	May 5
N. Hampshire	Henry C. Morrison, State Library, Concord	Concord	Dec. 17
New Jersey	H. G. Norton, Trenton	Trenton	June 17
New Mexico	J. A. Massie, Santa Fe	Santa Fe	.. ..
New York	H. H. Horner, Univ. of State of New York, Albany	New York / Albany / Syracuse / Buffalo	Jan. 28
N. Carolina	B. K. Hays, Oxford	Moorehead City	June 10
N. Dakota	G. M. Williamson, Grand Forks	Grand Forks	.. ..
Ohio	Geo. H. Matson, Columbus	Columbus	Dec. 10
Oklahoma*	J. W. Duke, Guthrie	Oklahoma City	Jan. 14
Oregon	B. E. Miller, Portland	Portland	Jan. 7
Pennsylvania	N. C. Schaeffer, Harrisburg	Philadelphia / Pittsburgh	
Rhode Island	G. T. Swarts, Providence	Providence	Jan. 2
S. Carolina	H. E. Boozer, Columbia	Columbia	June 10
S. Dakota	L. G. Hill, Watertown	Watertown	Jan. 8
Tennessee	C. A. Abernathy, Pulaski	Memphis / Nashville / Knoxville	May / June
Texas	J. D. Mitchell, Fort Worth	Dallas	.. ..
Utah	R. W. Fisher, Salt Lake City	Salt Lake City	.. ..
Vermont	W. Scott Nay, Underhill	Montpelier	Jan. 14
Virginia	R. S. Martin, Stuart	Richmond	Dec. 17
Washington*	F. P. Witter, Spokane	Spokane	Jan. 13
W. Virginia	H. A. Barbee, Point Pleasant	Wheeling	.. ..
Wisconsin	J. M. Beffel, Milwaukee	Milwaukee	Jan. 14
Wyoming	A. B. Tonkin, Riverton	Riverton	.. ..

*No reciprocity recognized by these States.

†Applicants should in every case write to the secretary for all the details regarding the examination in any particular State.

Care of Motor Tires.—For the motorist who wishes to economize in the matter of tires, the points to be observed are: (1) Manipulate the clutch and apply the brakes carefully. (2) Concentrate the weight as much as possible over the back axle. (3) Test the wheels carefully for parallelism and alignment both when the car is empty and loaded. (4) Fill up or vulcanize cuts in the protective rubber tread as soon as they appear. (5) Examine the tires periodically for nails embedded in the tread. (6) Run the tires in alternate directions from time to time.—*Automobile Topics.*

Books Received.

The MEDICAL RECORD *is pleased to receive all new publications which may be sent to it, and an acknowledgment will promptly be made of their receipt under this heading, but it must be with the distinct understanding that it is under no obligation to notice or review any publication received by it which in the judgment of its editor will not be of interest to its readers.*

DER JETZIGE STAND DER KREBSFORSCHUNG. By Prof. Dr. GEORG KLEMPERER. 74 pages; paper; price 2 M. August Hirschwald, Publisher, Berlin.

ON THE OXYDATIONS AND CLEAVAGES OF GLUCOSE. YEAST GLUCASE, A NEW GLUCOLYTIC FERMENT. By VICTOR BIRCKNER. 183 pages; paper; price .75. University of California, Publishers, Berkeley.

COMMENTS ON SOME PLANS OF HOSPITAL CONSTRUCTION. By HERMAN M. BIGGS, M.D. 61 pages; illustrated; paper. Department of Health of the City of New York, Publishers.

TYPHOID FEVER IN NEW YORK CITY. By CHARLES F. BOLDUAN, M.D. 52 pages; paper. Department of Health of the City of New York, Publishers.

THE DIVISION OF CHILD HYGIENE OF THE DEPARTMENT OF HEALTH OF THE CITY OF NEW YORK. By S. JOSEPHINE BAKER, M.D. 103 pages; illustrated; paper. Department of Health of the City of New York, Publishers.

THE TUBERCULOSIS CLINICS AND DAY CAMPS OF THE DEPARTMENT OF HEALTH. By JOHN S. BILLINGS, Jr., M.D. 123 pages; illustrated; paper. Department of Health of the City of New York, Publishers.

WHEELER'S HANDBOOK OF MEDICINE. By WILLIAM R. JACK, B.Sc., F.R.F.P.S.G. Fourth Edition. 532 pages; flexible leather; price $3.25; cloth; $3.00 net. William Wood & Company, Publishers, New York.

PUBLIC HEALTH CHEMISTRY AND BACTERIOLOGY. By DAVID MCKAIL, M.D., D.P.H., F.R.F.P.S.G. 409 pages; cloth; price $2.50 net. William Wood & Company, Publishers, New York.

SPRUE: ITS DIAGNOSIS AND TREATMENT. By CHARLES BEGG, M.B., C.M. 124 pages; illustrated; cloth; price $2.00 net. William Wood & Company, Publishers, New York.

MANUAL OF HUMAN OSTEOLOGY. By A. FRANCIS DIXON, M.B., Sc.D. 316 pages; illustrated; cloth; price $3.00 net.

MUSCLE SPASM AND DEGENERATION IN INTHRATHORACIC INFLAMMATIONS. By FRANCIS MARION POTTENGER, A.M., M.D., LL.D. 105 pages, with 16 illustrations; cloth; price $2.00. C. V. Mosby Company, Publishers, St. Louis.

THE PRACTITIONER'S VISITING LIST FOR 1913. Flexible leather; price $1.25. Lea & Febiger, Publishers, New York.

MIND AND ITS DISORDERS. By W. H. B. STODDART, M.D., F.R.C.P. 518 pages; illustrated: cloth; price $4.00 net. P. Blakiston's Son & Company, Publishers, Philadelphia.

TEXT-BOOK OF ANATOMY AND PHYSIOLOGY FOR NURSES. By Elizabeth R. Bundy, M.D. Second Edition. 335 pages; illustrated; cloth; price $1.75. P. Blakiston's Son & Company, Publishers, Philadelphia, Pa.

MANUEL PRATIQUE DE KINESITHÉRAPIE. By G. ROSENTHAL. 319 pages; illustrated; paper. No. 3. Price 5 francs. Librairie Félix Alcan, Publishers, Paris.

DIE THERAPIE DES EKZEMS. By Dr. THEODOR VEIEL and FRITZ VEIEL. Vol. I. No. 7. 34 pages; paper; price 1.20 M. Carl Marhold, Publisher, Halle.

DIE TUBERKULOSE DER HARNORGANE. By Dr. HANS WILBOLZ. Vol. I. No. 8. 44 pages; paper; price 1.50 M. Carl Marhold, Publisher, Halle.

UEBER BEHANDLUNG DER HAUTTUBERKULOSE. By Prof. Dr. DOUTRELEPONT. Vol. 1. No. 6. 32 pages; paper; price 1.20 M. Carl Marhold, Publisher, Halle.

LEHRBUCH DER HAUT UND GESCHLECHTSLEIDEN. By Dr. S. JESSNER. Vol. I. No. 1. 96 pages; illustrated; paper. Curt Kabitzsch, Publisher, Würzburg.

HANDBUCH DER SPEZIELLEN CHIRURGIE DES OHRES UND DER OBEREN LUFTWEGE. Vol. II. No. 1. By Dr. L. KATZ, H. PREYSING and F. BLUMENFELD. 56 pages; illustrated; paper; price 6.50 M. Curt Kabitzsch, Publisher, Würzburg.

DIE SCHUSSVERLETZUNGEN DES SCHADELS IM KRIEGE. By OTTO HOLBECK. 479 pages; illustrated; paper; price 12 M. August Hirschwald, Publisher, Berlin.

A MANUAL OF SURGICAL TREATMENT. By Sir W. WATSON CHEYNE, Bart., C.B., and F. F. BURGHARD, M.S., F.R.C.S. Vol. III. 575 pages; illustrated; cloth. Lea & Febiger, Publishers, Philadelphia and New York.

THE ANATOMY OF THE HUMAN EYE AS ILLUSTRATED BY ENLARGED STEREOSCOPIC PHOTOGRAPHS. By ARTHUR THOMSON, M.A., M.B., F.R.C.S. Oxford University Press, Publishers, New York.

Miscellany.

Human Life as a National Asset.—At the meeting of the National Conservation Congress, held in Indianapolis on October 2 and 3, Mr. E. E. Rittenhouse, Conservation Commissioner of the Equitable Assurance Society, read a paper with this title. He asked that the Congress should consider the following suggestions: 1. To encourage business institutions, civic, social, and religious organizations which have influence over any considerable number of people to join in, at least, some of the many phases of the life conservation campaign. 2. To encourage the education of the individual to adopt healthful habits of life, to avoid the intemperate life, which means excess in eating, drinking, working, and playing, and unhealthful indulgence in indolence as well. 3. To encourage communities to establish and maintain ample public health organizations consistent with the magnitude of the work in hand. 4. To advocate the organization of local health leagues as a stimulus to public interest and to give aid and support to the public health service. 5. To encourage the slowly growing sentiment for a rigid supervision, and isolation, if necessary, of victims of tuberculosis, which is the only way in which this devastating plague can be stamped out. 6. To advocate the employment of civic nurses in the health service, who may also act as health inspectors and aid in educational work. 7. To advocate the issuance and distribution by the states or municipalities of an official prevention manual to teach the public how to avoid preventable disease. 8. To urge every individual to go to his or her doctor for periodical health inspections to detect disease in time to arrest or cure it. 9. To urge employers of labor to give their employees these examinations free as a part of their efficiency and welfare program. 10. To encourage philanthropy, now so generously contributing for the care of the sick, to also enter the field of disease prevention which it has so far quite generally neglected.

The Waste of Medical Experience.—When an old practitioner passes away his experience dies with him. Books there are in abundance and the reports of cases generally contribute something to the sum knowledge. Without such records progress would be impossible, and every case honestly reported adds a stone to the slowly rising temple of truth. But men like Jenner or Gull are represented in catalogues by only a few papers and addresses. What would one not give for the experience of a man who had been in general practice for half a century, who had seen many whom he had brought into the world grow up and in their turn become parents and then pass away, all the time under his observation! Such men seldom have time to write down what they see and what their practice has taught them. Often, too, they have not the faculty of exposition. Generally, however, such experience is so personal to the man, consisting as it does of the accumulated impressions of all the senses gathered by long observation, that by its very nature it is not transmissible to another. It was in this that the old system of pupilage had an advantage which modern scientific training, with all the apparatus of the clinical laboratory, fails adequately to supply. There is the physiognomy of disease, the interpretation of which has, owing to the large use of instruments of precision, become almost a lost art. There is the knowledge of that subtle something, called for convenience "constitution," which so often makes all the difference between success and failure in treatment, and other still more intangible things, which together make up the knowledge a man acquires in practice. The young man writes because he thinks he has something new to tell; the old man does not write because he finds age has made him indolent and he is perhaps unwilling to put his experience on paper. Yet if old practitioners could and would set down faithfully what they had seen and done in their professional career, a mine of information not to be found in textbooks or scientific monographs would be available.—*British Medical Journal*, October 26, 1912.

Molière and Medicine.—B. M. Randolph states that no one has ridiculed physicians more effectively and amusingly than has Molière, who directed the shafts of his satire without compunction against the abuses and absurdities of his time, but who seemed to have an especial antipathy for doctors. Various reasons have been assigned for this: his landlord was a physician, and there was a constant feud between the wives of the two; Molière himself was a consumptive and was embittered by personal experience of the futility of remedies employed in treating him; he attributed to malpractice the death of his only son, and also that of an intimate friend who received a triple dose of antimony; a medical friend, a physician, was ostracized by the faculty for approving a quack remedy. While these facts doubtless influenced Molière, it is not necessary to attribute his attitude to mere prejudice. The absurdities, pretensions, and avarice of the practitioners of the time, and their pedantry, assumption of dignity, affected dress, and professional jargon could not fail to appeal to the satirist's pen.—*Old Dominion Journal of Medicine and Surgery.*

Damning Carbureters.—Time was when ignition troubles got to be a sort of habit with the motorist; his obsession was that whenever anything went wrong the spark was at fault. Now the ignition is about the last thing to be inspected when the motor fails to move, and instead of the old obsession a new one has taken possession of the man behind the wheel. It is that no matter what goes wrong the carbureter needs attention. Often the idea takes possession of the motorist's soul that no amount of fixing will remedy the difficulty—that a new carbureter of a different sort is absolutely necessary. Such a one was apprehended by an expert of the maker of that particular carbureter, hurriedly tucking up his sleeves and declaring with sputtering anathemas that he was going to knock the blamed thing off his engine—he wouldn't stand for it any longer, so he wouldn't. And only after much persuasion would he agree to stand aside and let the expert have a look around before the axe was swung. This is what he found: Two intake valves riding on the push-rods, one spark-plug porcelain cracked, another plug with the points touching, one magneto brush burned up, two leaky valves, all the cylinders loaded with carbon and water in the gasoline. "These things all together make a 'bum' carbureter," concluded the agent sapiently at the end of the examination. Unquestionably carbureters are giving more trouble today than ever before. The fact is brought to notice only because carhureter difficulties have increased a very little while others have decreased a good deal. The only reason is that the quality of gasoline now served to the motorist is poorer than ever before and more variable. For its higher price the "trust" is blamed in terms of outraged innocence, but the effects of its low and variable gravity, its decreased volatility and its high percentage of impurities, instead of being attributed to the proper source, are laid at the door of the carbureter maker. The injustice probably will result in an early improvement of the breed of "mixers," while leaving the public intelligence absolutely dulled to the vital question of fuel supply—*Automobile Topics.*

Medical Record

A Weekly Journal of Medicine and Surgery

Vol. 82, No. 24.
Whole No. 2197.

NEW YORK, DECEMBER 14, 1912.

$5.00 Per Annum.
Single Copies, 15c.

Original Articles.

THE SANITARY CONTROL OF LOCAL MILK SUPPLIES THROUGH LOCAL OFFICIAL AGENCIES.*

BY ERNST J. LEDERLE, PH.D.,

COMMISSIONER OF HEALTH, CITY OF NEW YORK.

IT will perhaps be generally recognized by those interested in the administrative control of the production and sale of milk that New York City offers a most conspicuous example of a municipality undertaking practically the entire supervision of its own milk supply all the way from the cow to the consumer. Most large cities doubtless exercise more or less jurisdiction over the sale of milk within their limits, but no other city that I know of has developed such an extensive system of inspection of dairies and creameries as is practised by the City of New York, notwithstanding that nearly all of the 45,000 farms on which our milk supply is produced are located outside the city limits and more than 6000 of them outside the State of New York.

The Board of Health has power to adopt a sanitary code without the concurring vote of any other municipal authority, and this code has the full force and effect of law in New York City so long as its provisions are consistent with general State laws. The existing system of public control of New York's milk supply is based upon the sanitary legislation of the Board of Health, in the form of appropriate sections of the Sanitary Code and supplementary rules and regulations.

Let us now consider briefly some of the facts that have made the sanitary control of milk supplies one of the most important public health problems of our communities.

Infant Problem.—Milk suitable for infant feeding must comply with the following requirements:

It must have the proper nutritive value; that is, it must not be impoverished by the removal of a portion or all of its fat, or the nutritive value lowered by the addition of water. It must be clean. In general it is agreed that the bacterial content of milk is an accurate scientific index of its cleanliness, but it is comparatively recently that the danger of bacterial contamination of milk has been appreciated. It has been found that infants under one year are very susceptible to poisoning by milk infected with excessive bacterial growth, particularly during the hot season, when the resistance of the digestive tract is lowered.

Milk infected with the germ of bovine tuberculosis may transmit tuberculosis to children, but is not apt to infect adults, while milk carrying the germs of typhoid fever, scarlet fever, diphtheria and tonsillitis, is dangerous to persons of all ages.

*Read at a meeting of the Practitioners' Society of New York, October, 1912.

Infectious Diseases and Milk.—Tuberculosis, typhoid fever, scarlet fever, diphtheria, and tonsillitis are the principal diseases which in this country are transmitted by means of infected milk. It is believed that the tubercle bacilli are in the majority of cases derived from the cow, but they may come from human sources. Typhoid bacilli in milk are always derived from man. The contagion of true scarlet fever transmitted through milk is considered as always coming from man, but there is a disease closely allied to it, the contagion of which is derived from the cow. Diphtheria bacilli are regarded as being always of human origin.

The streptococci exciting tonsillitis are believed to be derived both from cases of septic inflammation of the udder and from human sources. According to Park, about 3 per cent of all tuberculosis existing in New York City exhibits the bovine type of bacilli and is therefore probably caused by milk infection. Of 279 cases of tuberculosis in adults examined by him, only one case was due to the bovine type. On the other hand, 22 out of 84 very young children and infants examined were infected with the bovine type, or about 24 per cent.

Typhoid Fever and Milk.—During the last two years much light has been thrown upon the definite origin of outbreaks of typhoid fever due to milk infection, through special investigations carried on by the New York City Department of Health. Several such outbreaks were traced definitely to so-called "carriers," persons who have recovered from an attack of typhoid fever, but who remain infected and continue to excrete typhoid bacilli. One outbreak of 400 cases was traced to infection of a milk supply by a typhoid carrier who had had the disease forty-seven years ago. In another 50 cases were traced to a man who had had the disease seven years ago. These important new discoveries led the department to strongly urge the necessity of the pasteurization of all milk except that produced under special stringent conditions.

Public Protection of Milk Supplies.—In view of these sources of danger to the public health, what means can be employed to make public milk supplies safe?

The problem involves three distinct features:

(1) The prevention of adulteration, either by the addition of water, the removal of fats, or both, and the exclusion of all preservatives and, in fact, all foreign substances.

(2) The production of a clean milk, a milk low in bacteria, involving great care from the time of milking to actual consumption. This involves effort to insure the cleanliness of the cows and the milkers, properly instructed, clean barns, proper and thoroughly cleansed vessels and utensils which the milk comes in contact with, exclusion of dust at every stage, immediate reduction of temperature after milking, thorough icing during transportation, the sale under sanitary conditions in stores,

and finally, proper care in the hands of the consumer.

(3) The production of a milk free from pathogenic organisms, requiring first of all healthy animals, and subsequently, the careful handling of the milk at all stages to prevent the introduction of the germs of infectious disease through human agencies, flies and dust.

Methods of Public Control.—The general outlines of the methods adopted by boards of health and other governmental authorities in controlling the sanitary quality of milk supplies of cities are fairly well defined and generally accepted. It is recognized that a system of inspections of dairies where the milk is actually produced, supplemented by inspections of creameries and of the methods of shipment and handling all the way from the farmer to the consumer, is one of the necessary elements of this public control. Such inspection must provide for the detection of contagious diseases among those handling the milk, as well as for the improvement of sanitary conditions.

Whether these details are carried out under the supervision of municipal or State authorities is a matter of expediency largely governed by local conditions. Theoretically, it would be better that State authorities should exercise a uniform control over the production and sale of milk in all communities. In practice, some of our large cities have found it necessary, in the absence of thorough-going State control, to develop their own system of milk inspection in the country as well as in the city.

The control of conditions under which milk is handled and sold within the city is a still more usual function of the local authorities and includes the regular inspection of stores and wagons, with frequent chemical and bacteriological tests and the usual method of enforcing sanitary requirements by resort to the courts if necessary.

The magnitude of the problem which New York faces may be imagined, when it is considered that the city draws its daily milk supply of 2,500,000 quarts from 44,000 farms located in six different States, namely, New York, New Jersey, Pennsylvania, Connecticut, Vermont and Massachusetts. Some cream is also received from Ohio and Canada. The "milk shed" covers an area of 50,000 square miles. The milk is produced from approximately 350,000 cows, and shipped from 1,100 creameries over 11 different railroads, the shortest haul being 50 miles and the longest 425 miles. When it reaches the city it is received at 15 different terminals and eventually delivered in 5500 wagons and dispensed at 14,000 stores. It is estimated that about 127,000 persons are engaged daily in handling the city's milk supply and on the basis of the relative frequency of typhoid bacillus carriers in the population of New York City there may be perhaps a hundred such persons included in this army of milk handlers.

Milk inspection began in New York in the late 70's and early 80's, and this inspection work was conducted in co-operation with the State officials of New York and New Jersey. Then, however, the elementary forms of adulteration, consisting in the removal of cream and the addition of water, were the only points considered. Later, it developed that a knowledge of the bacteriological content of milk was of much greater importance so far as the public health was concerned than was its chemical composition. When it was found that the bacterial content of milk was an accurate index of the cleanliness of the methods used in its production, attention was more and more directed to the supervision of conditions at the farm, at the shipping stations and on the railroads. This work was continued in 1906, and it was then realized that successful control would never result until the milk was traced back to its very sources. This was the beginning of actual dairy inspection by the New York Department of Health. From two inspectors in 1904, the number has gradually risen until there are now 56 milk inspectors.

Legal Aspects of the New York Plan.—It was under the administration of my predecessor, Dr. Darlington, that inspection of milk in the country districts was first established. Perhaps one of the most interesting phases of this work is the legal basis through which the authority of the department is exercised throughout an area covering portions of six different states. The Sanitary Code requires that no milk shall be sold in the City of New York without a permit from the Board of Health, and the board maintains that it is entitled to ascertain the conditions under which milk is produced before issuing a permit to the dealer who buys that particular milk and brings it to the city. Under the operation of this system, it is rare that permission to inspect a dairy or creamery is refused. When such refusal is met with the department notifies the dealer, who then faces the alternative of refusing to receive milk from the particular farm or creamery under criticism or of having his permit to sell milk in the city revoked. The result, of course, is very salutary in excluding from New York City all milk from farms which do not meet the requirements. The question may be raised as to what protection other communities receive under this plan, since the producers whose milk is excluded from New York City doubtless find a market elsewhere. This exhibits the great defect of local control of milk supplies. It is undoubtedly far better that the State should undertake the control of milk production under adequate and uniform standards rigidly enforced throughout the State by a sufficient number of inspectors. New York State has an excellent Department of Agriculture and adequate laws governing the production of milk, but the appropriations made by the State for this work are totally inadequate to insure the character of the supervision of dairy farms which the City of New York believes to be necessary to the purity and wholesomeness of its milk supply. Even if State supervision in New York were sufficient, a similar question remains in the case of the six other states from which the city's milk is drawn. With these varying jurisdictions, the city has been obliged to face actual conditions instead of legal or constitutional theories and evolve its own system of supervising the milk at every stage from the dairy to the breakfast table.

Deficiencies in Local Milk Inspection and Recent Improvements.—For several years we have felt that our methods of controlling the milk supply were inadequate and did not accomplish the desired results, particularly in the following respects:

It is now a well-known fact that the general milk supply of every large city in the world is unfit for use in infant feeding. Two well-defined methods have been applied in New York to effect a change in this respect: first, the production of a special grade of milk, "certified" and allied grades, for infants, and, secondly, the general movement to improve the whole supply so that milk suitable for

infants might be procured everywhere where milk is sold. Each of these methods has been successful to only a very limited extent. After ten years less than 1 per cent of the city's milk is of the certified type or equivalent thereto and the expense of this class of milk is almost prohibitive for general use in infant feeding. In fact, it is a luxury within reach of comparatively few. What is needed is a safe milk which can be furnished at a price within the means of the masses.

The attempt to bring the general market milk to the degree of purity required for infant feeding can never be successful in a large city. In the first place it is economically not feasible, since too great a part of the total supply of milk is used for other purposes, for adults who do not require a milk of such special requirements and for cooking purposes where a still less degree of bacteriological cleanliness is necessary. It naturally follows that milk for the last two mentioned purposes can be produced and sold at lower prices than the special infants' milk. In the second place, although the system of surveillance has materially lessened the danger of infection of milk from the presence of cases of infectious diseases among the employees on the farms and in the creameries or from unhealthy animals, our present knowledge of the propagation of typhoid fever by milk infected by "typhoid carriers," and the fact that tuberculosis is so widespread among our dairy herds, have forced us to the conclusion that no matter how complete or well organized the system of dairy inspection, it will not be possible to render entirely safe the ordinary commercial milk which is produced and shipped to a city from so large a territory as is comprised in the New York City milk field.

In our opinion the only way in which the sanitary authorities can meet these conditions is by requiring the pasteurization at least of all milk that is not of special exempted grades. We have always been impressed with the necessity of dealing with milk to be used for infants as a separate problem. Since the requirements are so much more exacting for infants' milk and since it has been well established that this grade of milk is much more expensive to produce, and should command a higher price than can ordinarily be demanded for milk in general use, it was deemed wise to separate the two problems.

As early as October, 1907, in an address given at Milwaukee I took the position that the sanitary authorities should establish a system of grading our milk supplies, and that practically universal pasteurization must be insisted on in the interest of public health. Since January, 1910, the development of such a milk program has been one of the foremost subjects under consideration by the Department of Health. Early in January, 1912, on my recommendation the Board of Health of the City of New York officially adopted the following plan of grading and labeling of all milk brought into the city and sold there:

Grade A, for Infants and Children.—1. *Certified Milk*, milk certified by a Milk Commission appointed by the Medical Society of the County of New York or of the County of Kings, as being produced under the supervision and in conformity with the requirements of that Commission.

2. *Guaranteed Milk*, produced under the same standards as Certified Milk, but under the supervision of the Board of Health.

3. *Inspected Milk, Raw.*—This milk must come from tuberculin tested cows. Farms must obtain in an official score at least 75 points with a minimum of 25 points for equipment and 50 points for method. The milk must not contain more than an average of 60,000 bacteria per c.c. when delivered to the consumer.

4. *Selected Milk Pasteurized.*—Farms must obtain at least 60 points in official score; 20 at least for equipment and at least 40 for method. The milk must be pasteurized as prescribed by the rules and regulations of the Department, which, of course, provide for such temperatures and times of exposure to heat as have been shown by our researches to be necessary to render the milk thoroughly safe. This milk must not contain over 50,000 bacteria per c.c. when delivered to the consumer, and must be delivered in bottles, except on special permit in certain cases. Containers must be labeled "pasteurized," and the label must bear date and hour when pasteurization was completed, the place where it was performed and the name of persons or corporations performing it. The milk must be delivered to the consumer within 30 hours after pasteurization. Milk to be pasteurized must not contain over 200,000 bacteria per c.c.

Grade B, for Adults.—1. *Selected Milk, Raw*, from cows which are certified as healthy by veterinarians after physical examination. Farms must score at least 68 points, 25 for equipment, and a minimum of 43 for method.

2. *Pasteurized Milk.*—This milk must be delivered within 36 hours after pasteurization.

Grade C.—This grade is to be used for cooking and manufacturing purposes only, and includes all raw milk not conforming to the requirements of Grades A and B.

I will indicate briefly what it is expected that this plan of grading and labeling will accomplish.

For the Farmer.—It means in effect that farms will be scored, and a farmer will know what grade of milk he is producing and how he can produce a better grade if he so desire. The better grades of milk will command a higher price at the farm, therefore for the first time in the history of milk production an incentive will be given the farmer to produce a cleaner milk. This principle, of course, was established on a very small scale in the production of certified milk, but never before in production of milk for the masses. There is an apparent contradiction of this principle in the case of pasteurized milk, in which case under the present condition, a supply of milk of the cooking grade (C) may be brought into the higher grade (B) by pasteurization, without any material improvement of farm conditions. The advantage to the general public health of pasteurization is, however, so great that it was thought wise to encourage pasteurization to the fullest extent possible, without at this time making too many restrictions, but when finally worked out the general requirements for all milk, with the exception of that for cooking, will have to be further advanced so that there will be no setback in the movement for a cleaner milk supply, the fear of which condition has led so many persons to oppose the introduction of pasteurization.

For the Dealer.—The grading and proper labeling regulations will be a great incentive to the progressive and honest dealer who is willing and anxious to sell his products on a proper basis, and who by this plan will be aided in his efforts by official control. It will no longer be possible for the dishonest dealer to market the lowest grade of milk under false representations or to sell cooking

milk for infants. Those dealing only in the lowest grade, cooking milk, will have to sell the same as such or go out of business.

For the Public.—The users of milk will be enabled to purchase the quality of milk they require and for which they can afford to pay. This is particularly important in the case of milk for infants and children. For those who cannot afford to purchase the special grades offered for this purpose, specific instructions will be given under what conditions Grade B may be used, and in case of the poorer classes provisions have been made by the municipal authorities, through the Infants' Milk Stations of the Department of Health (at present fifty-five in number, located in various parts of the city) to supply milk for infants' use at a moderate cost, and without charge in certain special cases through the charitable agencies operating in conjunction with the department.

The plan carries with it the establishment of the broad principle that the milk sold from cans ("dipped" or "loose" milk) in the grocery store is unfit for use for infants.

The special requirements made for the production of raw milk, Grade B, its limitations to use for adults and the recommendation that pasteurized milk of the same grade is a safer milk, will encourage the extension of pasteurization as it was intended to do.

We feel that the time has come when just as radical changes as have been inaugurated in the requirements for the grading and labeling of milk, will have to be applied to the regulations for the sale of milk in stores. The situation is peculiar. Milk is sold at about 20,000 places. Every little corner grocer sells milk, not because there is any direct profit derived therefrom, but as a convenience to the customer who desires to purchase other commodities. There is therefore no incentive to the proper care of the milk. It must be understood that almost all of such milk is dipped from cans. No permanent reform can be inaugurated until the sale of this class of milk is limited to milk stores where other commodities are not permitted.

Infants' Milk Stations.—I have already referred to the fifty-five municipal stations for dispensing milk for babies which are now in operation under the administration of the Department of Health. This work was inaugurated in 1911 when an appropriation was made for fifteen experimental stations. A large number of depots were also conducted by private organizations, and the work was so successful that this year the city made provision for the much larger number. I believe, however, that this work is only in the developmental phase, and that the ultimate solution of the infants' milk problem must and will be found in the production of the special grades of milk suitable for infant feeding, and the placing of this milk on the general market so that it will be possible for mothers to obtain easily milk of the proper quality at reasonable prices in milk stores or from dealers. In that event the municipal and other milk stations for infants will doubtless gradually assume what I take to be their proper function of serving as centers for the education of mothers in the care and feeding of babies, and in the care of milk in the home.

Up to the time that the present system of grading went into effect different grades of milk were not officially recognized. We had special infants' milk, certified milk, inspected milk, all these being grades which the dealers advertised as suitable for babies without endorsement from the Department of Health. In other words, dealers had the liberty to place any form of label on milk that they pleased. We had also in the city a certain amount of pasteurized milk which was produced under more or less definite regulations of the department. All other milk supplied to the city was simply "milk"—not in any way guaranteed.

At the present time the system of grading includes three classes—A, B, and C milk. Grade A is safe milk for infants. It comprises certified and guaranteed milk; inspected raw milk from tuberculin tested cattle, and also a high grade of selected pasteurized milk. Raw and pasteurized milks are included in this grade because there is still considerable agitation upon the question of their relative values. Many physicians still prefer raw milk for infant feeding. Without trying at this time to settle that question we have provided for both types of milk in the A grade.

Grade B milk suitable for adults provides for a selected milk raw produced under good sanitary conditions. The tuberculin testing of cattle is not required, but simply the certificate by a veterinarian that the animal is shown by physical examination to be healthy, followed up by the opinion of veterinarians of the Health Department. Grade B also includes pasteurized milk.

All milk not conforming to these two grades is labeled Grade C and is recommended for cooking purposes only.

The regulations concerning the grading of milk went into effect on January 1 of the present year Many thousand dollars have been spent by dealers in complying with these regulations which also provide that every bottle and can containing milk that is brought into the city of New York must show the grade by tag or label. In the case of Grades B and C there is quite a large proportion sold in cans with labels which the consumer never sees. In the case of the milk sold in the grocery stores, people would never know whether they were purchasing B or C milk. We require of every store that deals in C milk that a sign be displayed reading: "THE MILK SOLD IN THIS STORE IS FOR COOKING PURPOSES ONLY." We distributed 6,000 such signs a few weeks ago.. It was only a month ago that we were able to enforce compliance with the labeling. We have also been able recently to make a census report of all milk coming into the city, showing the amounts of the different grades, A, B, and C. Of Grade A the city receives 35,000 or 40,000 quarts a day; of Grade B, 1,000,000; of Grade C, about 8,000 quarts. It is possible to change the C Grade of milk to Grade B by pasteurization, and we are encouraging this, although it requires a large outlay. To bring Grade C milk up to Grade B raw, the dealer has been obliged to go to the farmer and offer him more money for the production of that class of milk. The increase in price of 10c. a can stimulates the farmers to produce such milk and enables the dealer to obtain considerable amounts of B milk.

The next important step in the improvement of our milk supply is the betterment of conditions under which milk is sold. This is particularly true of milk sold in small grocery stores. At the last meeting of the Board of Health a resolution was adopted which in a measure was revolutionary. It dealt with the sale of milk in the store and its protection from human contamination, dirt, dust, flies, etc., and provided that after June 1, 1913, the sale of milk in cans should be prohibited in stores where

foodstuffs are sold which produce dust. Such loose milk can only be sold in special milk stores or in stores where foodstuffs are handled in the original packages. All stores can sell milk in bottles if proper icing facilities for the protection of the milk are provided.

LOCAL ANESTHESIA IN OPERATIONS ON THE RECTUM.

By CHARLES B. KELSEY, M.D.,

NEW YORK.

Possibly some readers of the Medical Record may recall that a number of years since in an article on the office treatment of hemorrhoids and other minor affections of the rectum I called attention to the possibility of substituting local for general anesthesia in operating upon many of these cases and also described a treatment of hemorrhoids by galvanopuncture, which seemed to me to have all the advantages of the injection treatment without its well-known dangers.

Since that time I have been steadily practising these methods in my office and it may be of interest to speak now from the standpoint of the results.

Since substituting weak solutions of eucaine for cocaine, both used hypodermically or under the mucous membrane, I have had no occasion to change the form of anesthetic. Quinine and urea I had great hopes from until I was discouraged by Wyeth's bad results and abandoned it without any fair trial. It has always been rather a weakness of my own in surgical practise when I found a good thing to hold to it until I was sure of a better, which will explain why I have never yet performed a Whitehead operation for hemorrhoids and never expect to do so.

Whatever surgery of the rectum is done under eucaine must be done without any very decided stretching of the sphincter. It is both useless and dangerous to try to overcome the sensitiveness of the whole anus by injecting an anesthetic subcutaneously to an extent which will permit of stretching the muscle. I tried it in the early days of cocaine and spent hours of anxiety over the untoward results though, fortunately, never having a fatal accident. This constitutes the first decided limitation to this method of treatment. Whatever is done must be either on the skin, as in fistula or fissure, or through a speculum, as in hemorrhoids or polypi, which cannot be extruded by straining. Were it not for this all of the minor surgery of the rectum could be done as well by local as by general anesthesia.

It is this inability to properly dilate the sphincter which makes the treatment with local anesthesia inapplicable to any but the simplest forms of fistula, for the ordinary fistula cannot be operated upon with precision and success unless the sphincter be first paralyzed. Where the sinus is straight and without branches, where there is one opening on the skin and one on the mucous membrane and the surgeon can satisfy himself that this is the condition, local anesthesia, and operation in one's office work most satisfactorily. Where this is not the case and the sinus is tortuous and bifurcated the attempt to cure in this way will generally be a failure.

And while upon this point it has often seemed to me that there is a way of curing fistula without any operation at all, which has never been tried out as it might be. I refer to the treatment by curetting, draining, and stimulating to healthy action which would be used on any old sinus not connected with the rectum. By it I have occasionally had successful results which have greatly surprised me and this not only in simple cases, but in cases so extensive that I have hesitated to inflict the injury necessary to secure a cure with the knife. Perhaps it is because a patient with fistula is usually willing to be operated upon and an operation is easier for the surgeon, while one with hemorrhoids is generally unwilling, that this method has not been more generally used. Or it is possible that the method is more common with the general practitioner than I am aware.

Another condition to which attention may be called is slight laceration through the sphincter from parturition—cases in which it is only necessary to freshen the edges of the laceration and bring the ends of the muscles together by a few sutures. It is not long since I traveled a considerable distance to do just this little thing upon a lady of wealth and position whose life was that of a semi-invalid from incontinence after three or four failures to effect a cure with all the advantages of general anesthesia. Whether she would try once more or not depended entirely upon whether she must take ether or not, and hence I had small chance to choose. There was nothing remarkable in the fact that the operation was successful with eucaine, the wonder being that it had not been successful before, as the tear was only through the sphincters.

From what I have said of the impossibility of stretching the sphincters under eucaine it follows necessarily that this method is not applicable to the cure of fissures of the anus by dilatation. But there is another way of curing a fissure to which it applies perfectly and that is by incision, and this treatment is just as successful as dilatation.

Inject the eucaine not into the fissure, but underneath it from a puncture in the skin a short distance from the fissure. Then with a small speculum expose the part, at the same time making the muscle tense and draw a sharp knife through it lengthwise once or even twice. Cut simply through the muscular fibers forming the base of the ulcer, not deeply into the cellular tissue. I have known it to fail to cure, but very seldom. I have also known thorough dilatation to fail just as often and for the same reason—the presence of prolapsing hemorrhoids which prevented cure by any method until they were removed.

Coming now to the treatment of hemorrhoids by galvanopuncture under local anesthesia, I desire to make my ideas, as well as the technique, as clear as possible, believing that the method has a certain well-defined surgical value.

Any hemorrhoid can be ligated and removed as well by local as by general anesthesia provided it can be brought into reach without dilatation of the sphincter. The same statement does not apply to the removal with the clamp and cautery, for although the cautery may be painless the clamp will not be. This is due to the fact that the pressure of the clamp affects a much wider area than the hemorrhoid itself, and requires a much more extensive use of the anesthetic to prevent pain than does the application of the cautery. Hence this method of cure, which is my favorite one under general anesthesia, is never used under eucaine.

But because the ligature may be used painlessly it does not follow that when a patient presents

himself with well-developed hemorrhoids requiring for their cure three or even four ligatures, he should be placed on a table in the office and all his hemorrhoids removed at one sitting. This is not a proper office procedure. The surgical traumatism is too great, and the amount of eucaine necessary would be more than I should care to use at one time. Hence my own rule is to remove the tumors one by one at intervals sufficiently separated from each other to permit of the entire disappearance of all pain and soreness caused by each application. In this way many cases are cured and many more may be so greatly benefited as to consider themselves entirely cured, though not radically so; for it often happens that all the bleeding and all the protrusion are due to a single large tumor entirely covered by mucous membrane and easily extruded by the patient or brought outside by a speculum. It is in such cases also that the galvanocautery treatment is most easily applicable.

When the tumor has been brought outside the sphincter puncture it at its most prominent part with a fine hypodermic needle and inject into its substance fifteen or twenty drops of a weak solution of eucaine. If the tumor becomes distended and grows whitish under the mucosa all is well and the application of the galvanocautery will be painless. But it may happen that even with more fluid than this there will be no visible distention and the cautery will not be entirely painless, though the pain caused by it in such a tumor as I have described is seldom severe even when no eucaine at all is used. The failure to get the local effect of the anesthetic I attribute to the fact that it is sometimes injected into a large vein and carried away into the circulation.

After allowing time for the eucaine to take effect, take a small and delicate galvanocautery wire, heated red, not white, plunge it into the tumor where the anesthetic has been deposited, and carry it well onward toward the center. The wire should be hot enough to burn its way easily, allowing for the cooling from contact, and it should be removed slowly, allowing it to burn itself loose. A white-hot needle plunged into a vessel and quickly withdrawn will be followed by hemorrhage. A red hot needle left in for a moment and withdrawn gradually will cauterize sufficiently to close any vessel which it may have opened. Where the tumor is large a second puncture may be made before it is replaced.

From such an application as this there is seldom any pain and the operation may be repeated on another tumor after an interval of two or three days. But after three or four such applications at short intervals the patient will begin to complain of some pain and soreness and this is the signal for stopping further treatment for a week or fortnight till all symptoms disappear.

And now what has been accomplished? A distinctly aseptic wound has been made in the substance of a vascular tumor, which will be followed by a slough, by cicatrization, and contraction, with decrease in size and vascularity, and the hemorrhoid will cease either to bleed or protrude. Moreover, the wound is from the surface inwards, there is a free exit for the products of inflammation, and the amount of tissue destroyed is absolutely under the surgeon's control.

Compare this condition with that produced by the injection of an irritant or caustic into the middle of the same tumor and leaving it there to work what result it may and find its own way out, and it will be evident why I advocate and practice this method to the exclusion of that by injection.

The one I claim to be safe, definite, and surgical. The other has often proved itself to be unsafe, a traumatism, the effect of which cannot be foreseen or always limited, and therefore dangerous and unsurgical.

The procedure thus far described, it will be noticed, is applicable only to hemorrhoids which can be brought outside the sphincter by an effort of the patient or the surgeon. Manifestly I have described the simplest first. The others, and they are the majority, require some little manipulative skill in the use of the speculum and some deftness of touch.

When the tumor cannot be extruded it will be necessary to work through a speculum, and one of cylindrical shape as large as can be used without too great stretching and with considerable bevel on the end will best answer the purpose. If the beveled end is introduced to the location of the tumor the latter will readily protrude into it and the subsequent steps are exactly the same as already described in cases where the hemorrhoids protrude from the anus. No forceps for holding the tumor are necessary. The speculum can be controlled with the left hand and the rest of the work done with the right.

Do not be in haste to remove the speculum after the cautery has been used and before making sure there is not too free hemorrhage. Generally, almost always, the oozing from the puncture will cease as soon as the speculum is withdrawn and the parts return to their normal position, but sometimes there will be enough blood to worry the operator, and while the speculum is still *in situ* he may think it best to introduce the cautery needle again at the same spot and at a dull red heat to control this bleeding by a fresh cauterization. A better way, however, when the oozing causes anxiety is to introduce a tampon of gauze through the speculum and leave it in contact with the spot.

A small tampon will give pressure enough; one which can remain till the patient goes next time to the closet, and very rarely will any at all be necessary.

The variety of hemorrhoid which causes the most difficulty is that which is in great part composed of the vessels and tissues at the margin of the anus. I do not mean the grape-like external venous tumor, which should always be treated by incision, but the internal tumor of long standing and considerable size, which is only manifest when the patient strains and then shows itself as a swelling on one side of the anus covered by the skin, but which cannot be extruded sufficiently to show the upper part covered with mucous membrane or be distinctly defined. These are apt to cause more trouble by this or any other method of treatment, because any wound (incision, ligature, or puncture) which involves the margin of the anus will always cause more pain and swelling than one confined to the mucosa of the rectum above the sphincter.

In such cases the tumor is best brought within reach with a bivalve speculum, one blade of which is largely fenestrated. This should be introduced with the fenestrum over the tumor, slightly opened, and then withdrawn until the hemorrhoid is pulled down by it into view. With the speculum holding the tumor thus within reach the eucaine and cautery are applied exactly as in the other case.

And now as to results. For at least fifteen years I have practised this method without an accident. There has never been an abscess or anything approaching it; never a moment of uneasiness on account of any bad result. A very few times, not more than half a dozen at the outside, have I had to reintroduce a speculum and put in a small tampon, as described, before I cared to allow the patient to leave the office, and this is the only difficulty I have ever encountered. The treatment, if not crowded too frequently, is almost painless, both at the time and subsequently, and it will certainly cure any case upon which it is used with sufficient thoroughness. But I do not consider the cure as radical as with either the ligature or the cautery. There is by this method a connective tissue tumor left in the rectum where there was before a vascular one. The blood vessels have been in part occluded and there is no more bleeding. The tumor has been so reduced in size that there is no longer any protrusion. The patients are, as far as they know, cured. But I usually warn them that after a few years (three, or four, or five) there may be some return which can easily again be cured by a few more of the same applications. Some of them return, many never do, because they remain without symptoms.

Finally I should like to be understood as not claiming that this method has any advantages over the clamp and cautery except the single one of avoiding general anesthesia. All I have ever claimed for it is that it is a safe, painless, and efficient method of relieving and curing a great many patients who would otherwise condemn themselves to lifelong suffering simply from an exaggerated fear of a surgical operation under ether.

While upon this subject it has often been a surprise to me that more advantage is not taken of primary anesthesia. There is a moment in the preliminary stages of etherization when half the operations upon the rectum can be done without the patient's consciousness, provided the surgeon is a fairly rapid operator and the patient is placed in the proper position before the etherization is begun. This does not particularly appeal to the patient, however, because to him ether is ether, be it much or little, and an operation is an operation, whether it be done slowly or quickly; but it enables the surgeon to do a good deal of work in his office for which a hospital would otherwise be necessary.

44 East Twenty-ninth Street.

RAILROAD HOSPITAL ASSOCIATIONS.*

By FRANK ALLPORT, M.D.,

CHICAGO, ILL.

This paper is written with the intention of provoking a discussion on the best and most equitable manner of remunerating surgeons for services rendered railroad employees, etc.

I desire to say at the outset that I am not opposed to medical men working for large corporations under a previously understood agreement, provided such an agreement is fair and equitable to all parties concerned and can be continued with mutual and growing respect between employer and employee. All other forms of business and professions (including the legal profession) are often carried on under spoken or written articles of agreement. In commercial matters, the more responsible the purchaser and the larger the order, the cheaper can he buy goods. Architects, engineers, etc., reduce their fees when dealing with selected firms of high credit, who agree to give them constant occupation. Lawyers adjust their fees to harmonize with conditions when constantly employed by corporations giving them large amounts of work. Why, then, should not physicians and surgeons agree to render their services at reduced and specified prices to railroad and other corporations giving them constant employment, provided such fees are of a character to enable them to maintain their self-respect and the respect of others? Such remuneration may be in the nature of a salary or may be paid for in accordance with the amount of work performed, but it should always be sufficient to bear inspection.

The company surgeon has a perfect right (when he reduces his compensation) to take into consideration four advantages undeniably connected with corporation work, viz.:

First, the pay is sure and prompt.

Second, his position as company surgeon inevitably leads to the acquirement of private patients, both connected and unconnected with the corporation.

Third, if his client is a railroad company he becomes possessed of certain transportation conveniences.

Fourth, the extension of his professional horizon carries with it increased work, enhanced skill and enlarged acquaintance.

Nevertheless, in spite of all these advantages, he should honestly feel that he is receiving a fair compensation for his labors, as only by this precaution can he maintain his own respect and the respect of others and deal fairly with his professional brethren.

Having thus settled, in my own mind at least, the justifiability of medical men working for corporations desirous of giving them regular employment at properly reduced compensation, let us proceed to a consideration of the best and fairest manner of effecting such compensation.

The railroad usually employs a chief surgeon at a fixed salary, into whose hands (with varying limitations) the surgical work of the road is intrusted. Until of late years this work has consisted in the surgical and medical care of injured men, the examination of men for service, the surgical supervision of personal injury suits, the appointment of assistant district and local surgeons, auditing bills and issuing vouchers, inspecting and commenting on personal injury reports, and transmitting the same to the claim and legal department. The chief surgeon's assistants resident in his own city were usually paid a small but fixed salary, and most of the surgeons residing outside of the home city were usually given transportation and reduced but fixed fees for each individual case, or were compensated by the receipt of transportation and a small annual salary. Surgeons living in very small towns, where railroad cases are infrequent, were (with some roads) merely given transportation from time to time as occasion arose. Many roads, however, invariably pay a small but definite fee for services rendered, no matter how small may be the size of the town. This method of dealing with railroad surgery has

*For a thorough exposition of this interesting subject, I beg leave to refer the reader to two valuable and interesting communications by Dr. W. H. Allport, of Chicago, in the January and February (1912) numbers of the *Journal of Political Economy*, from which I have derived much of the information necessary to the writing of the present article.

proven, on the whole, fairly satisfactory. It has been open, of course, to some abuses, but after all the surgeons were quite well satisfied, for they, as a rule, received fair compensation for their work, the men were contented because they were well cared for after injuries, and the only participant to this tripartite arrangement which manifested evident symptoms of restlessness was the railroad, which was compelled to assume this financial responsibility, which, after all, was no more than its proper moral burden, considering its responsibilities and privileges. All railroads have doubtless suffered a multitude of impositions, and yet, after all, the care of its injured employees should be a duty which it is quite willing to assume and which should be looked after with at least as much solicitude as is the repairing of its rolling stock, its rails, and its roadbed. I am free to say that, after a long experience in railroad work, it has been my observation that most railroads have conscientiously and cheerfully discharged their duty to their injured men, and if all roads would perform this portion of their business obligations with the same care and solicitude as is manifested by the Northwestern, the Rock Island, the Milwaukee, the Chicago and Eastern Illinois, and many others, there would be no occasion to write this paper or to discuss it. But there has crept into railroad management during the last few years a desire on the part of a few railroads under the excuse of philanthropy to shift the financial burden of the injured employees onto the shoulders of the men themselves. Thus has come into existence the various hospital or beneficiary associations connected with a few of the roads. Most railroads, as I have already stated, still manfully carry their own burdens and consider it their moral and business duty to care for their injured men, and it is to be hoped they will continue to do so; but there are danger signals in the air, and we who are railroad surgeons should do what we can to prevent the progress of an evil which, while still in its infancy, might easily grow until we all become the victims of an unfortunate miscarriage of justice.

Without going into details, these hospital associations are organizations that care for sick and injured railroad employees. The money for their support is raised by taxing each employee a certain sum (let us say fifty cents) a month, which is taken out of his own wages. Thus, for $6 a year he becomes insured against medical and surgical services for practically all diseases and injuries except those of a disgraceful character. These services the surgeons of the road are compelled to render for the small compensation which they receive. Under the ruling of some of these associations the men are compelled to accept membership, while in others the act is called voluntary, but it might as well be disclosed in its true light, for if a man does not join the association he is soon made to understand that he is *persona non grata*. In some of the associations the road is released from personal damage suits the instant that benefits are accepted; in others this is not the case.

The management of the association and its finances is conducted practically by officers of the road; the low salaried men may, it is true, be represented on the board of management by one of their number, but it is reasonably certain that his influence will not be very far-reaching.

These associations were originally planned for the benefit (if it is a benefit) of the poor men, the low salaried men of the road, but in at least one or two roads with which I am familiar the high salaried men from the president down have availed themselves of the privilege of membership, and I know of one high salaried official who required and secured the performance of a laparotomy under the $6 a year clause. When placed upon the defensive the roads seek refuge under the claim that they hold themselves responsible for any deficit that may arise from time to time in the management of the fund, but as a matter of fact it may be said that the membership fees are so arranged that there is practically no deficit; in fact, the truth is that in some roads there is a large surplus, which, of course, is held in the hands of the management. Inasmuch as the railway officials retain practically the entire management of the hospital association and the making and the unmaking of its laws, they certainly have it within their power to arrange the amount of the assessments to harmonize with the average disbursements. No one need therefore waste any anxiety upon the railroad, as it can be safely trusted to emerge from a consideration of the annual association budget with a steady pulse and an undiminished confidence in its own financial sagacity.

Most of the railroads that have adopted the hospital association plan, voluntarily and ostentatiously contribute a few thousand dollars for its support; but even though this contribution is a large one (which it is reasonably safe to say it is not), it would almost surely fall far short of equalling the annual sickness, funeral, and court expenses incidental to the old method of dealing with injured employees.

It will thus be seen that this adroit and ingenious scheme is a source of enormous saving to the road, as it almost, if not quite, entirely releases them from all financial obligations so far as the care of their injured men is concerned. It can therefore be readily understood why some railroads are so enthusiastic over the plan, for under the ostensible purpose of benevolent and unselfish philanthropy, based upon the Samaritan-like desire to see that the poor employees are properly cared for when sick or ailing, and properly buried when dead, they have slipped in the clause that they shall be properly attended when injured in the service, and shall be properly examined for service from time to time, which lifts a great load of financial obligation from the back of the corporation. It can also be clearly comprehended why the men are satisfied, for by the payment of a small monthly assessment they are insured against practically all doctors', hospital, and undertakers' bills, and are additionally compensated for the loss of an eye, a finger, a leg, etc.

A distinct objection to the plan, however, must be mentioned in considering matters from the standpoint of the employee, consisting in the inferiority of underpaid work. Under the hospital association plan the doctor is almost invariably insufficiently paid for his work, for it must be remembered that under this plan the doctor not only has to care for injuries received during service but almost all other forms of physical disability as well. He is thus compelled to care for typhoid fever, pneumonia, enlarged prostates, diphtheria, cancers, appendicitis, senile cataracts, catarrh, dyspepsia, mastoid diseases, trachoma, deafness, the fitting of glasses, etc. In view of the fact that his pay is ridiculously small and that he is constantly being consulted by the men for real or fancied diseases because it costs them nothing to secure his services, he is sure to become

imposed upon, disgruntled, and discouraged, and under these circumstances cannot enter heartily into his work nor render his best services. Thus, while the plan looks satisfactory to the insured man, he is reasonably certain sooner or later to receive unwilling and therefore inferior medical and surgical services.

I desire briefly to call attention to the commendable association plan adopted by the Chicago & Eastern Illinois Railway. A low assessment is levied on each man and an actual annual deficit is paid by the railroad. The fund is employed for sick and death benefits, hospital, and burial expenses. The company pays all doctors' bills and expects no release from personal injury litigation.

Another encouraging indication of the times is the fact that August 1, 1912, the Hospital Department of the Missouri Pacific & Iron Mountain System was turned over to the employees. The service is to be controlled by a Board of Hospital and Service Managers, to be composed of nine members selected from different departments of the railroad.

It has been interesting to myself, and might be to others, to read an article written by the superintendent of one of the largest railroad companies in this country entitled, "The Relief Department of the ——— Railroad: Its Advantages to the Company."

It is, of course, impossible to reproduce the entire article at this time, but I will make a few quotations from it to enable you to judge of the real mental attitude experienced by some railroad officials concerning the advantages of the hospital association plan to the railroad.

This gentleman begins his article by saying that "probably the greatest advantage which the railroad company enjoys through the operation of the relief department—the one most far-reaching in its effects—is the examination of applicants for employment and the subsequent close observance of the men by a corps of especially trained medical men." In other words, the medical man is expected not only to make the initial physical examination but also to keep the men under constant surveillance as to their bodily condition, habits, etc. This combined medical and detective work is meagerly paid for (when paid for at all, except by the presentation of a pass) out of the relief funds, thus affording the company an opportunity of obtaining highly valued services at the expense of the relief department. He then goes on to say that the existence of a relief department is a practical guarantee of immunity from damage suits. Statistics show that the relief department of this particular railroad company settled on a basis of benefits only "99.2 per cent. of the accident injury cases, and 97 per cent. of those of accidental death." It will be seen that this not only saves an enormous amount of money in damages alone, but, as this gentleman says: "The corps of claim agents is reduced, the expenses of the legal department greatly curtailed, and a great deal of unenviable notoriety is avoided in the trial of suits, and the newspaper comments thereon." Another item of great value to the road is its emancipation from the financial burden of caring for men who are suffering from injuries received in the discharge of their duty. He says: "The usual method of providing for such men is to carry them on the rolls at half pay. A relief department, especially if membership is compulsory on all classes of employees, relieves the company entirely of this expense." Why would it not be a good idea to organize relief departments in all the various departments of railroad service and compel the employees to obtain membership? Careful statistical calculations would enable the company to estimate their gross running expenses, and a per capita tax on all the employees could be levied under the guise of membership tickets in the various relief departments. In this way the company would experience "relief" from all its financial obligations, and the receipts would be all profit. It is surprising that this pleasant little arrangement has been overlooked by some railroads, and I am confident that now the idea has been suggested the philanthropy of these roads will extend much further in the future than it has in the past.

This gentleman's conception of the ease with which doctors can be imposed upon is evidently quite well expressed in his recitation of the duties of the company surgeon. "He is required to attend free of charge all cases of accidental injury to employees, passengers, trespassers, and others, occurring in any way in connection with the company's operations. His compensation consists only, in most cases, of an annual pass over the company's lines." He usually furnishes his own supplies. According to this superintendent, the medical man is expected to use his influence in securing the best hospital accommodations for the smallest amount of money, to suggest to the widow of the dead employee that she pay out of the death benefits to have the remains "fixed up" (to use his illuminating and sympathetic language) and buried. He asserts with great satisfaction that "it is a rare thing for his railroad to have to pay an undertaker's bill on account of an employee." He further indicates what is expected of the company surgeon in the following language: "The company surgeons, by reason of their great numerical strength and their high standing in private and public life, can be made an even more valuable asset to the company. These men are, as above stated, usually the best qualified medical practitioners in their communities. They are influential in private life and hold all sorts of political offices, from health officer, coroner, town councillor, or Mayor, to members of the State and National Legislatures." It is not difficult to see what he means by this language, and, to speak plainly, his willingness, not to say eagerness, to prostitute the medical profession in any way, from inducing them to work without pay and performing detective and sleuth services upon the men to imposing upon widows and ravishing public offices, seems too evident to need emphasis. Another service expected of the company surgeon can perhaps be best expressed in this gentleman's plain and unmistakable language: "Imagine a corps of several hundred men of influence, having peculiarly confidential relations with the employees, going into their families on occasions when they are especially susceptible to kindly acts, and it needs no straining of the vision to see what an immense amount of good to the company may be accomplished. The family physician's advice is asked on all questions, and it does no harm to be on friendly terms with him. His influence has been known in many instances to counteract that of the ambulance chaser, to the advantage of both the company and the man."

In other words, the company surgeon is to take advantage of his close and confidential relations with an injured man and his family at a time of shock and grief, for the purpose of inducing them

to deal gently with the corporation. This gentleman's further conception of the company surgeon's duties and character can be further conceived by another sentence which occurs a little later in his article, as follows: "The management knows it can rely absolutely on reports as to the character and extent of personal injuries on account of which claims are made; and when the trial comes on, if the doctor cannot conscientiously testify as the company would like to have him, he will at least do as little harm to its case as he can." Comments on the significance underlying this sentence seem to be entirely unnecessary. It is only to be regretted that this gentleman's acquaintance with the medical profession has been of such a character as to render it possible for him to express such sentiments. The value of the relief department to the railroad in question can perhaps be best summed up by the superintendent's statement that "the whole cost, including company's surgeons' salaries, fees paid other surgeons, and hospital expenses, was $1.85 per case. These cases involved operations of all sorts, from the dressing of a bruised finger to double amputations, trephining, etc." What a triumphant exhibition of high finance! It only costs $1.85 per case to care for all injuries, operations, etc., small and great, and even this expense has been shifted from the back of the railroad to that of the men, and has been rendered possible by the grossly unfair remuneration of the medical staff. The company evidently appreciates the services of the surgeons and does not fail to use them in season and out of season for almost any kind of work they can induce them to perform. Then why, may I ask, does the company not pay them at least decently, for their legitimate services? I think the answer can only be found by estimating the character of the company itself and the motives and moral equation of those gentlemen at whose door can be laid the conception and execution of these plans.

Having looked at the matter from the standpoint of the corporation and the men, let us as briefly as possible view the plan from the standpoint of the doctor. In the vernacular of the street he is the "goat," for he gets the worst of the deal from all standpoints; everybody prospers at his expense, and yet the entire scheme is absolutely dependent upon his cooperation. Formerly an important element in his compensation resided in the fact that because he was a company doctor he did work for and collected fees from many company employees for the care of diseased conditions not dependent upon railroad accidents. This source of income is now taken from him entirely, for the men all belong to the association and are at liberty to require his attendance upon them whenever they desire. Let me here present a concrete instance which will illustrate the effect the association plan may have upon the income of a railroad surgeon. I could offer many similar incidents, but one is enough to illustrate my meaning. I know an experienced eye and ear surgeon, living in a moderate sized city in a neighboring State, who has for years worked for a certain railroad running through his city. He was paid according to what he did, and this averaged him about $300 a year. Besides this he could secure trip passes and had a good many railroad patients for nontraumatic diseases, which considerably increased his income. When the hospital association plan was started on his road he was notified that he would receive the princely salary of $10 a month, for which he would be required not only to care for all the eye and ear injuries but would have to care for all the eye and ear diseases of the men as well; he can still get trip passes upon application. In other words, his compensation from the road has been reduced and his work greatly increased and much indirect financial compensation taken from him entirely. If this is a "square deal" it certainly does not accord with my own personal ideas of equity and justice. Of course, the first question to be asked is, "Why does he stand it?" "Why does he not resign?" This is a question that must be frequently asked, and its answer involves the greatest difficulty in the solution of this vexed problem, for, if the doctors would as a body arise and refuse to submit to such unjust, iniquitous, and dangerous schemes, the entire project would dissolve into thin air or the standards of compensation would be so raised that medical men could endorse the plan with no loss of self-respect. While the idea of contracting for a doctor's services must always be regarded with suspicion and reserve, the plan has evidently come to stay, and if this is true the people who are the real sufferers, viz., the doctors, should refuse to submit to such unjust conditions.

The entire matter assumes the appearance of a crude insurance scheme in which the essential laws of insurance and equity are grossly violated. No insurance company looking to the public for general patronage could exist a year under such conditions. It is only through the power that the railroad has over its employees, its arbitrary management of the insurance department, and the weakness of the medical profession that the railway hospital association as conducted by most companies can exist over night. If the men desire sickness insurance they can obtain it with very little additional expense from good and reputable companies, which will not place them under any obligations to their railroad. Most insurance companies have, however, found it inexpedient (except where large premiums are paid) to insure men against all diseases. The diseases for which the insured are permitted to apply for relief are definitely stated, and the fees which the doctor is allowed to collect are stated with equal definiteness. It has been ascertained that only by laying down strict rules of this nature can low priced sickness insurance be perpetuated with fairness and equity to the insurance company, the wage earner, and the doctor. If this is true it would hardly be expected that railroad companies could come to different conclusions, and, indeed, it may be answered, without fear of contradiction, that they could not continue such an arrangement at all if it was not for the cooperation of the doctors. The railroads employing the hospital association plan (with few exceptions) buy the doctor's services for almost nothing, and thus are enabled to continue the operation of a sickness insurance plan that would be utterly impossible if the doctors insisted upon receiving just and reasonable compensation for their labors.

It has been suggested that these associations should be for the benefit of poor men only, and that it should be distinctly understood that employees earning a salary of more than a certain amount are not available for membership. This would seem to be a suggestion that would occur to any fair-minded man, and should, of course, be adopted, as it would bar out much injustice and abuse of privilege; but, after all, it goes only a few steps in remedying the evil. In talking over the matter a short time ago with a prominent railroad official whose road has

recently adopted the association plan, he calmly, and with the almost inevitable surrender of humanity to commercialism so frequently observed in those dealing in purely financial affairs, delivered the edict that the entire matter was one purely of supply and demand, and must be settled along these lines. He declared that if the doctors were not satisfied with the idea and with their remuneration they should resign, and that there would be no difficulty in filling their places. I told this gentleman that I was unfortunately aware of the willingness of one doctor to supplant another under such circumstances, but that this did not make it right for a corporation to underpay its employees merely because it had the power, any more than it is right for department stores to encourage prostitution by paying unlivable wages to their girls because they have the power to do as they please, knowing as they do that they can easily fill the position of a departing girl. If might makes right, then reformers, philosophers, and philanthropists may as well fold up their tents and "quietly steal away."

The fact of the matter is that this unfortunate situation will have to be settled by the medical profession itself. A railroad that forms an association of this nature, by which it is relieved from the payment of its just bills for the care of its injured men and at the same time relieves itself from personal injury litigation by previously signed releases between the men and the road; a road which will scale down its doctors' bills to a point approaching invisibility merely because they know they can is a road with which it is merely wasting time to argue. It has chosen its course; it has performed a sharp financial transaction by which it saves thousands, and perhaps several hundred thousand dollars per annum; it passes in all the beauty of benevolence before its employees. Why, therefore, should it submit to argument; why should it make any change in its plans because, forsooth, the doctors are not satisfied? Why, indeed! If the doctors are not able to look after themselves why should the road bother itself about them? If they are weak enough to be imposed upon; if they have not sufficient *esprit de corps* to stand by one another and refuse to supplant a brother surgeon because he has had spirit enough to refuse to submit to unjust dictation; if doctors have not sufficient unanimity of thought and action to unite together and stand for righteousness and justice, then why should the railroad strain itself for the privilege of paying out large sums of money when such disbursements are entirely unnecessary? It can easily be seen that under these circumstances argument is useless and that time and energy can be better expended by vigorous and repeated appeals to the medical profession itself, as has been done with rather bright prospects for the future by the doctors in England in their opposition to the Lloyd George Insurance Bill. The author of this bill, in looking back over the business aspect of the medical profession and observing what easy victims they have always been in the hands of sharpers and how their ranks have always been torn asunder by internal dissensions and jealousies, naturally concluded he could make use of them in completing his insurance bill by suggesting, if not dictating, to them through Parliament what fees they should receive when practising under the act. In this perfectly natural conclusion, however, he found himself mistaken, for, amazing as it may seem to even a casual observer of the past, the medical profession of Great Britain, acting under the auspices of the British Medical Association, developed astonishing powers of cohesion, held mass meetings, passed resolutions and did not desert them, and up to the present time have refused to submit to the remuneration clause in the Insurance Act. All praise to the British medical profession! They have demonstrated something that no one believed existed, viz., the ability of the medical profession to stand solidly together for what they believe to be their rights. The Lloyd George's Insurance act cannot exist without the cooperation of the medical profession, neither can the railway hospital association exist without the sanction of the medical profession. The doctor is absolutely essential to the success of both plans. Why, then, should not the doctor be treated with the consideration which is his just due? Why should he not be suitably remunerated for his services? Why should he be expected to meekly submit to getting the worst end of every step of such iniquitous transactions?

The question has been asked, why does the surgeon not resign his position under the hospital association plan if he feels that he is being unfairly treated? There are a number of reasons why this step is so infrequently taken. In the first place, the surgeon has probably been connected with the road for years and dislikes to sever old ties and associations, especially as he hopes for better arrangements in the future. Then there is the wonderful and beloved pass, from which he hates to be separated. He perhaps hardly ever uses it, but he loves to look at it and to have others know that he has it, and then he can use it if he desires and take beautiful and desirable trips to distant parts of the country. He cannot bear to part with it, especially as he knows quite well that if he does some hated and objectionable professional rival would soon glory in its possession. He retains his position, then, on account of old associations, to retain his pass, because he hopes for better arrangements in the future, because it does furnish him a little sure and ready money, because he wants to keep the position away from somebody else, and because there is a certain amount of distinction incidental to the connection. These reasons are, of course, utterly insufficient and inadequate as an excuse for the surgeon to retain a position through which he sacrifices his self-respect and lowers his professional standard, but I believe them to be a truthful representation of the reasons why the surgeon continues to submit to the unfair dictation of a railroad hospital association. These reasons, however, do not relieve the railroad from its moral obligation to its surgeons, nor does it alter the fact that such unfair treatment results necessarily in the frequent employment of poor surgeons and even half-hearted service from good surgeons, which is, of course, a bad thing for both the road and the men. The doctors are, as is well known, the most charitable people in the world; they are constantly and cheerfully and freely giving their services to the poor gratuitously, but there seems to be no reason why they should regard railroads as objects of charity or semi-charity.

To my mind, the most menacing feature of the situation is the outlook for the future. It may not matter so much that the railroad or that corporation is placed on the hospital association plan; the question is, to what extent will this plan become adopted in the future? The storm of disapproval and opposition on the part of the medical profession towards the Lloyd George General Insurance Bill is of recent occurrence and well known; but it may not be so

well understood that the working out of this plan in some other European countries has produced disastrous but logical results to the medical profession.

The broad general plan of contract practice has been very generally used in various Continental countries for years, and assumes the form of an association insuring its clients against the expense of sickness, hospitals, death, funerals, etc. It usually applies not only to the man of the family but to his dependent household as well. The underpaid physician is, of course, a necessary element to the plan, and under its sinister influence the average income of Physicians in Austria, Bohemia, Germany, etc., is reduced to perhaps about $400 a year; while in England, with no such conditions existing (at least up to the present time), the average income of medical men is $3,000 per annum. This can be easily understood when it is known that in the city of Freiburg an association of this kind has been in existence for some years, and out of 16,000 families in the city 14,000 are insured. This has reduced medical fees to the association doctors to such an extent that office calls are valued at 15 cents, house calls about 30 cents, night visits 96 cents, minor surgical operations about 35 cents, larger surgical operations about $3; normal child birth $1.20, difficult obstetric cases about $3. Other cities in these countries show that medical fees for association doctors are about the same as in Freiburg, and it follows as a perfectly natural sequence that the fees of those medical men who are not employed by these associations are inevitably forced downward as a direct result of such fees as those just enumerated. An especially menacing feature of this plan is that rich people are beginning to obtain membership in these associations, and thus it would seem that the last hope of the unfortunate doctor was being surely taken from him and that he must soon seek some other and more self-respecting and profitable means of existence.

It is to be hoped that the remuneration for medical services in America will not be dragged down to the degrading level produced in Europe under the baneful influence of some forms of contract practice; but it would be of interest to know just how much a railroad hospital association surgeon in America receives on an average for office and house visits, operations, etc. I will venture to say that if most of these surgeons would compute this problem they would be surprised at, and ashamed of, the result.

It must not be forgotten that this paper refers merely to the hospital or beneficiary associations of railroad corporations; it was not intended to discuss the broad, general plan of contract practice, and I have only referred to the deplorable conditions in Europe for the purpose of demonstrating the inevitable result of contract practice when uncontrolled by a high sense of moral obligations.

Just what effect the new Workmen's Compensation Act will have upon the hospital association plan remains to be seen, but it is to be hoped it will put it out of business, although such an optimistic view of the future is hardly to be expected. It would not be necessary to wait for such developments if the doctors could be made to realize the power of medical combination. They absolutely hold the key to the situation; it is only necessary for them to use it with determination, tempered with reason and justice.

Directly connected with the subject of this paper comes the news from England that there is a distinct shortage of medical students in that country, which is occasioning acute unrest on the part of medical college authorities. There seem to be several reasons for this peculiar condition of affairs. First, the standard of medical education has grown much higher of late years; five years are now required for a medical education instead of four years, and this means a year's more time for study and the expenditure of probably $1,000 of extra money. Consequently many men have decided to seek other avenues of work, especially as the future of the practice of medicine and surgery is anything but flattering from a financial standpoint. There can be no doubt, moreover, that the Lloyd George Insurance Act has had a most depressing effect upon men who have contemplated entering medical schools. This has been so marked that the number of entries has decreased from 1,495 in 1910 to 1,232 in 1911. Such a decrease has never been seen before and has undoubtedly been occasioned by the Insurance Act and its sinister and humiliating influence on medical and surgical fees. Viewed in the light of the Lloyd George Insurance Act, the medical insurance companies on the Continent, the medical insurance organizations of railroads and other corporations in this country, a man must indeed be mentally astigmatic who cannot see that the remunerations and prizes incident to the practice of medicine will, unless better conditions develop, soon cease to attract the attention of level-headed men seeking for a life vocation. Some of you will doubtless be glad to see the ranks of the doctors thin out, and this may really be an advantage up to a certain point, but beyond that point the depleting process should not be allowed to extend. We must have at least a sufficient number of good doctors to care for the world's sick, but unless suitable remuneration is evident, impossible as it may seem now, there will eventually be a shortage in the medical profession.

In now leaving this subject for your consideration I beg to state that out of the chaotic conditions surrounding this vexed situation I have been able to arrive at several conclusions that seem to me should be carefully considered by the parties identified with all sides of the controversy:

1. A Railroad Medical Fee Bill should be established by medical associations. In doing so we should remember it is proper for obvious reasons that regularly employed railway surgeons may considerably reduce their fees to railroads for services rendered. The amount, however, should not be improperly low and should be fair and reasonable to both employer and employee. There has always been something mysterious about this subject, and it has never been a matter that has been openly understood as it should be. It is not expected that this fee bill will ever be universally used (there are always some men who prefer to work in the dark), but it would at least establish a standard and give an open expression of opinion from those who are best able to judge of what are the minimum fees which can be accepted by self-respecting railway surgeons.

2. The method at present in vogue with most railroads, whereby surgeons either receive reasonable fees for services rendered or receive a reasonable salary, is a fairly satisfactory plan and should be continued until a distinctly better method can be demonstrated.

3. Any plan should be discountenanced by the medical profession which seeks to reduce an already low remuneration by endeavoring to confer benefits

to railroads or their employees at the cost of the medical profession.

4. All railway insurance associations by which employees are insured against all forms of injuries or sickness are detrimental to the interests of the medical profession and should be discouraged. The diseases for which men may apply for relief should be carefully selected and definitely stated. This should relieve the doctors from caring for disgraceful diseases, most contagious diseases, and the innumerable partially or entirely imaginary diseases indulged in by poorly balanced and neurotic individuals who delight in haunting doctors' offices, especially where they can indulge in this morbid privilege without the payment of a fee.

5. If railroad hospital associations are formed adequate representation of both surgeons and employees should appear upon their advisory boards. Only men drawing small salaries should be admitted to membership, and the remuneration to surgeons should consist in adequate salaries or in payment for actual services rendered, based upon a low, but reasonable, fee bill. Employees should never be asked or required to sign personal injury releases to the company upon receiving benefits from the association nor should they be required to become members of the association unless they themselves desire to effect such an alliance.

6. It is useless to endeavor to abolish the broad general idea underlying contract practice; it, like the locomotive and the automobile, has come to stay. Our efforts should be directed along the line of regulation instead of along the line of suppression.

SUITE 1208, 7 WEST MADISON STREET.

ADDITIONAL REPORT UPON THE USE OF THE SPHYGMOMANOMETER IN EXAMINATIONS FOR LIFE INSURANCE.*

BY J. W. FISHER, M.D.,

MILWAUKEE, WIS.

MEDICAL DIRECTOR OF THE NORTHWESTERN MUTUAL LIFE INSURANCE COMPANY.

MORTALITY experience of the Nothwestern Mutual Life Insurance Company on 525 persons insured in the years indicated in Table V, and 723 cases rejected for the reason stated.

This is a continuation of my report made at the last meeting of this association, with simply an additional year of mortality added to the original cases contained in that report. The original report will be found in the abstract of the proceedings of the Association of Life Insurance Medical Directors of America, page 392 (MEDICAL RECORD, October 21, 1911, page 818).

We call your attention to a ten point increase in mortality in cases recorded in Table IV. You will recall that the mortality in my last report, Table V, was 54.062, while the addition of last year brings the mortality up to 70.37. It should be remembered that no fresh lives have been added during the year, and that there has been no effort in the 723 cases rejected in Table VI to determine as to whether there have been any additional deaths. The additional deaths recorded are simply those that have come to our notice through various sources.

*Read at the twenty-third annual meeting of the Association of Life Insurance Medical Directors of America, October 9, 1912.

Table X shows 22 additional impairments since my last report, and an increase of six points in mortality. From July, 1911, to June, 1912, inclusive, this company insured 43,158 lives. Thirty-two thousand nine hundred were under age 40, and 10,258 at age 40 and over. One-hundred and fourteen applicants were rejected for the year, with a high blood pressure only, under 40 years of age, showing one in every 289.6 lives rejected on this account. Seventy-seven applicants under age 40 were rejected, with one or more impairments other than high blood pressure. At age 40 and over, 235 applicants were rejected who had a high blood pressure with no other impairment, a rejection of one in every 44.65 lives. Three hundred and forty-nine applicants at all ages were rejected, in which the only impairment was a high blood pressure, or one in every 124.6 lives. At ages 40 and over, 124 applicants were rejected in which there was one or more other impairment than the high blood pressure.

For the year indicated above, 550 applicants were rejected where a high blood pressure was a factor, showing one rejection in every 79.5 lives. Of M. I. B. reports for the above period, 2.2 per cent. contained a high blood pressure impairment exclusive of the Northwestern.

The examiners of the Northwestern Mutual Life Insurance Company are furnishing the company with blood pressure readings in 84.64 per cent. of all examinations. The blood pressure is required in all examinations regardless of amount or age.

TABLE IV.

Mortality of Accepted Risks with Systolic Blood Pressure of 140-149 mm. Hg., With an Average of 142.43 mm. Hg. All Ages.

Years.	Number	Expected	Actual	Per Cent
1907	217	14.884	7.	47.03
1908	652	41.221	21.	50.94
1909	953	42.088	12.	28.51
1910	846	25.215	18.	71.39
Total.....	2,668	123.408	58.	47.00

TABLE V

Mortality of Accepted Risks with Systolic Blood Pressure of 150 mm. Hg. and Over: Average 152.58 mm. Hg. All Ages.

Years	Number	Expected	Actual	Per Cent.
1907	87	6.194	6.	96.87
1908	210	14.398	10.	69.45
1909	163	8.432	3.	35.57
1910	65	2.238	3.	134.05
Total.....	525	31.262	22.	70.37

TABLE V

Mortality of Applicants Rejected with Average Systolic Blood Pressure of 171.03 mm. Hg. All Ages.

Years	Number	Expected	Actual	Per Cent.
1907	40	3.193	10.	313.18
1908	120	8.429	13.	154.23
1909	210	11.095	16.	144.21
1910	225	8.408	9.	107.04
1911	128	2.163	3.	138.69
Total.....	723	33.288	51.	153.21

TABLE VII.

Mortality of Applicants Rejected with High Blood Pressure (Average 171.73 mm. Hg.) and One or More Other Impairments.

Number	Expected	Actual	Per Cent.
358	16.680	27.	161.99

TABLE VIII.

Impairments Recorded on Applications at Time of Medical Examinations of the 358 Cases Recorded in Table VII Above.

Arteriosclerosis Atheroma	Heart Murmur	Heart Hypertrophy	Albumin and Sugar	Albumin in Urine	Sugar in Urine	Albumin and Casts	Casts in Urine	Nervous Symptoms	Prostatic Disease	Miscellaneous	Total
53	69	17	10	111	15	10	6	21	5	41	358

TABLE IX.

Mortality of Applicants Rejected with High Blood Pressure Only. (Average 170.36 mm. Hg.)

Number	Expected	Actual	Per Cent.
365	16.608	24.	144 51

TABLE X.

Impairments Subsequently Discovered or Developed in the 365 Cases Recorded in Table IX Above.

Arteriosclerosis Atheroma	Heart Murmur	Heart Hypertrophy	Albumin and Sugar	Albumin in Urine	Sugar in Urine	Albumin and Casts	Casts in Urine	Nervous Symptoms	Miscellaneous	Total	Expected	Actual	Per Cent.
7	10	4	3	20	5	36	16	6	16	123	5.867	8	136.35

TABLE XI.

Risks Accepted as Shown in Table V. Average Blood Pressure of Those Who Died Was 152.78 mm. Hg.	Causes of Death	Risks Rejected as Shown in Table VI. Average Blood Pressure of Those Who Died Was 179.17 mm. Hg.
	Aneurysm aorta	1
	Angina pectoris	3
2	Apoplexy	13
2	Appendicitis	2
1	Arteriosclerosis	6
2	Cancer	
1	Cerebrospinal meningitis	
	Cirrhosis of liver	2
	Consumption	1
	Diabetes	1
1	Duodenal ulcer	
1	Gallstone	2
3	Heart disease (organic)	8
1	Nephritis	10
2	Pneumonia	
1	Prostatic hypertrophy	
1	Railway accident	
2	Rheumatism (acute)	
	Stokes-Adams disease	1
2	Suicide	1

In the above computations the expected deaths are the total deaths computed by the Actuaries Mortality Table; no deduction is made for benefits derived from medical selection.

The significance of the above figures can best be understood when they are compared with the company's general mortality experience. On all risks accepted during the same period, August, 1907, to January 1, 1911, the actual deaths to July 1, 1912, are estimated to have been not more than 43 per cent. of the expected. With the expected deaths in each of above tables adjusted to this basis, the actual deaths compare as follows with the expected:

	Expected Deaths Company's General Experience	Actual Deaths	Per Cent.
Table IV	53.065	58	109.30
" V	13.443	22	163.65
" VI	14.314	51	356.29
" VII	7.172	27	376.46
" IX	7.141	24	336.09

That is to say, the mortality in the above cases was from 9.30 per cent. to 276.46 per cent. in excess of the estimated general average mortality of the company during the same period.

HEART MURMURS AND PATIENTS.*

By BEVERLEY ROBINSON, M.D.,

NEW YORK.

Physicians know how much value is attributed to accurate auscultation of the heart. This is true especially of hospitals. To the scientific, careful attending physician not a little importance is given to difficult or obscure murmurs. Surely some of this knowledge is of slight moment in general practice outside of hospitals. Of course, we should be able to recognize a well-defined mitral, aortic, tricuspid, or pulmonic bruit. We should be competent, usually, to determine if the murmur is systolic or diastolic. When we have two murmurs we may, as a rule, distinguish and limit them. On the other hand, it may test our medical acumen to differentiate them thoroughly, and to state in a certain limited area, which murmur is heard, indicating positively the orifice affected. Whenever three or even more murmurs are heard it is no easy matter to make positive affirmations, if one is conscientious and acknowledges limitations to hearing. Thus it is that not infrequently one person who is conceded to have both a learned and a sensitive ear states he finds what another individual may question. The intelligence of both may be equal, but not their auditory power. Admitting what precedes to be true, should we conclude that the practical outcome is always great? Frequently, it is *not*.

The refinements of auscultation are not invariably important apart from hospital bed-side notes and special treatises on heart disease. What is essential to know in practice is the value of the cardiac murmur when discovered, as to prognosis and treatment.

Is it organic or functional? Does it depend upon inflammatory thickening, calcareous deposits, enlargement, or narrowing at the cardiac orifices? Are these conditions curable, or will they persist? If curable, in what length of time? If not, are they compatible with comfort and activity during life? Valuable deductions will depend upon careful, continuous observations in every case. The previous diseases or habits which have caused murmur must be investigated. The age, profession, or occupation, and antecedents of the patient must be carefully considered. With all this in view it will probably take several days or weeks before we can pass judgment advisedly upon cardiac murmurs.

By themselves and without obviously disquieting symptoms resulting therefrom, they may have

* Read before the Practitioners' Society of New York, October 11, 1912.

relatively minor importance if the patient be judiciously watched or treated. On the other hand, when annoying, painful, or threatening symptoms are already manifest, the immediate or prospective outlook is very different. Much of what precedes is well known to every well-informed physician. Even so, and in view of what I hear frequently, it seems timely again to emphasize it. I am convinced, as others are, that the essential matter in many cardiac disorders, acute or chronic, is *not* the existence of a murmur, but the intimate condition of the heart muscle and nerve supply. Is this organ competent or not? If it is, how long will competence last? What course must be followed so that the patient's actual condition shall persist? If the heart is already incompetent, in what way and by what means may we prevent untoward progress in this direction? May we expect the heart to become again normal by any system of treatment?

Any one or all of these questions can be answered wisely only after much thought and observation. The answer will depend somewhat, it should be added, upon the disease or efficient cause producing the murmur. Further, we should duly estimate the fact of the time which has passed previous to the occurrence of the murmur. Has it developed suddenly or rapidly? Has it become manifest during or subsequent to an acute disease? Has it followed a sudden strain or prolonged effort? When it occurred was the individual apparently in good health or not? Has the murmur developed little by little and become clearly defined only after weeks or months and subsequent to an attack of gout or rheumatism or during the course of syphilis, tuberculosis, malaria, neurasthenia? Does it come from overwork, mental or bodily, anxieties, too much, too little, or improper food? Is the patient an alcoholic, or a smoker?

In any event I now hold after lifelong experience that it is wrong and useless in the majority of instances to tell patients they have a cardiac murmur. It alarms them almost invariably, even those who have well-balanced minds and tempers, and the fight or worry continues despite repeated protestations and explanations. Sometimes, indeed, it takes a long while, if it is ever accomplished, to undo or neutralize the bad effects occasioned by the inconsiderate statement of a physician. The evil consequences are perhaps greater when it comes from the trusted family adviser than from the prominent specialist who has been consulted, with or without the knowledge and approval of the former.

How may the trouble be avoided? At times, I grant, it is difficult. It may, however, often be accomplished by acting squarely and humanely in the following way. During the examination of the heart, the physician must not say within the hearing of the patient that a heart murmur exists. If asked the direct question by a patient, the doctor should simply reply: *That* is a question I never answer in any case. With this the patient must be satisfied. Or better still (and that I now always do when a patient is brought to me for examination of the heart), before beginning the examination, simply to say to the patient, I never state precisely what I find; I will examine you carefully, take sufficient and accurate notes of your case, and talk fully and confidentially with your physician as to what I discover and what I advise.

If the patient comes to my office alone, sent or not, by his physician, I state that I will write to or communicate with the physician; or in the latter case I simply say in advance of an examination that I never tell patients what I find in their hearts. Occasionally, it is true, even at present, when the patient's heart seems absolutely normal and when there is evidently groundless worry and anxiety which I hope to relieve measurably or entirely by a positive assertion I do so frankly and with little or no hesitation.

When I am called upon for an explanation of my mental attitude in this whole matter I simply say I have come to the deliberate conclusion that it is wrong and foolish to act otherwise; indeed, I believe it is frequently criminal. I have seen too many men, women, girls, and boys made miserable and unhappy for years by other, and what I know is habitual behavior on the part of physicians.

I have now in my remembrance not a few patients whose lives during several years have been almost wrecked by ill-advised, cruel statements of doctors about their hearts. Some of them are still living and fairly comfortable after many years, although, if they had not come into my care, I doubt if it would be true. Others have died, it is true, but at all events they did not "die daily" as a result of an opinion which, if not incorrect in substance, was misinterpreted and the opinion once given could not be changed with satisfactory effects to the patient. Further, the instances of heart failure which occur suddenly and disastrously are often those in which nothing has been revealed of an alarming character, even to the best expert's examination. I have seen and known of not a few. I do not refer merely to cases following acute disease, strain, or great shock—but to those individuals who simply collapse and drop dead—without adequate cause, and no one has known, or even suspected that their hearts were structurally defective. Of course, it is right and proper at times to make known confidentially one's judgment, even when it is only provisional, to the nearest relative or friend, because great personal or family interests, present and prospective, may be involved and it is necessary that someone other than the physician should know the medical facts. This I understand and fully appreciate. I do not wish to be misunderstood. To guide and direct a patient with heart trouble wisely and carefully is one thing; to tell him something that can be of no possible service to him or others in any way is quite another matter.

Following the course I have indicated in what precedes, I have surely been of great service to many; I have done no injury to anyone, so far as I know. Finally, I affirm that I yield to no one in my desire to help scientific progress in regard to heart disease. On the other hand, I also affirm, that some extrarefined knowledge which has come from the use of the newest, complicated, and cumbersome instruments has not promoted the comfort or the cure of patients thus affected.

Advanced research is good and to be commended, but it has its place. Usually this should be the hospital ward. The bedside of the nervous or ill patient must, however, be strictly guarded whenever this is carried out so as *not* to be cause of unnecessary mental or bodily distress to the patient.

Both within and outside of hospitals we may be so solicitous in our pursuit of scientific accuracy as to lose sight of right doing from the humane standpoint.

42 West Thirty-seventh Street.

REPORT OF A CASE OF URETERAL CALCULUS TREATED WITH OIL INJECTIONS.*

By WALTER S. REYNOLDS, M.D.,

NEW YORK.

With the newer methods of diagnosis at our disposal, cases of ureteral calculus *in situ* are diagnosed with much more precision than formerly. We are now not only able to say definitely that a calculus is present but are also able to localize its position. This is all of the greatest importance from an operative standpoint because it greatly simplifies the operative procedure necessary for the removal of the calculus so that the operation has now come to be a comparatively frequent one and one that has yielded very excellent results.

In some instances a calculus of considerable size will descend the length of the ureter and finally be expelled into the bladder. But the irregularity of the ureteral canal favors the stoppage of the concretion at one of these contractions with great uncertainty as to its further passage.

The descent of the calculus along the ureter gives rise to more or less severe pain, in many instances so intense that large quantities of morphine are necessary for relief of the pain, and even with extremely large doses the pain may not be entirely relieved. For the relief of pain which could not be controlled by morphine Bransford Lewis adopted a unique method. He injected 10 to 20 drops of 1 per cent. alypin solution through a ureteral catheter. The catheter was allowed to remain in place and the alypin solution injected whenever necessary. The location of the pain does not always indicate the side on which the calculus may be found. An *x*-ray should, therefore, always be taken of both sides.

Attacks of renal colic are accompanied by marked urinary symptoms, as frequency of urination, especially if the calculus is low down in the ureter, which is ordinarily not painful; hematuria more or less marked in nearly every case, and where not shown macroscopically it can frequently be discovered by microscopical examination.

How frequently the calculus would finally pass into the bladder it is impossible to say, but it has been estimated that 50 per cent. will pass under expectant measures. While the stone may undoubtedly remain for a considerable time in the ureter and produce no very great pathological change in the ureter or kidney, it would be a constant source of danger from blocking of the ureter or serious changes in the ureter or kidney. Interference with the passage of urine leads to hydronephrosis or pyonephrosis, with a possibility of entire destruction of the kidney. As the symptoms of hydronephrosis are frequently wanting, it might remain unsuspected until serious damage to the kidney had occurred. The possibility of these serious consequences renders treatment of some kind for the removal of the stone necessary where its expulsion is delayed in order to preserve the kidney.

The administration of any medicinal remedy internally is probably of little value in breaking up the stone or aiding in its expulsion and the virtue ascribed to some of the mineral waters is probably due to the quantity of water rather than to any quality of the water used. If copious flushing does not result in the passage of the stone some other method of relief must be instituted, and this usually necessitates surgical intervention.

A method of treatment has lately been employed which seems to offer some chance of assisting the passage of the stone into the bladder, thus avoiding a cutting operation. I am unable to say who first suggested this method of treatment, and therefore am unable to give due credit to the originator. I refer to the injection of oil into the ureter through a ureteral catheter. I have employed it in two cases, one of which was lost sight of; the other man passed the stone after a number of treatments. The passage of the catheter alone may have had some effect in aiding the progress of the stone in its descent.

The history of the case is as follows: G. B., a man 32 years of age, was first seen in the summer of 1911 at the Vanderbilt Clinic by one of our students, Dr. J. F. Hill, now on the Roosevelt Hospital staff, who, thinking the man might have a ureteral calculus referred him to me for examination. He was a barber and said that during the past year he had been obliged to stop work on several occasions on account of the pain in the back, which had been mostly on the right side. These attacks of pain or colic had been accompanied by frequency of urination and bloody urine. He had visited several clinics and dispensaries in search of relief, but no examination had ever been made which would indicate that a calculus was suspected. I immediately made a cystoscopic examination and found the bladder normal except that the opening of the right ureter showed some slight evidence of swelling and congestion. Ureteral catheters were introduced, the one on the left side passing without difficulty and drawing normal urine with seeming regularity. On the right side the catheter could only be passed about one and one-half inches, and the urine dribbled away slowly from the catheter. The urine was only slightly turbid with no evidence of blood macroscopically. He was referred to Dr. Edward Leaming at Roosevelt Hospital for an *x*-ray examination. His report was that there was a calculus present.

I decided to try injections of oil into the ureter to see whether it would be possible to induce the passage of the stone. I gave several injections of oil, but was never able to pass the catheter beyond the point where it was stopped on the first examination until later, when he came to my office. The man was lost sight of for some time, but came to my office on July 2, 1912, saying that he had had a severe attack of colic and feeling that the oil injections had relieved him, asked if I would continue the treatment. I gave him several injections and then, on account of moving, discontinued the treatment for a short time. I found that by inserting my finger into the rectum I was able to get the catheter by the obstruction shortly after he first came to my office, and this was subsequently done at each treatment and the oil injected well up the ureter. The passage of the catheter by the obstruction caused a considerable quantity of urine to flow from the catheter, showing that there was some obstruction to the free passage of urine. During the short time that I did not see him he had a severe attack of colic. He was seen again on October 1, and at this time was having pain during and just after urination. I suspected that the stone might be in the bladder, but was not prepared to examine him with the cystoscope and referred him to Dr. George Brewer at Roosevelt Hospital. An *x*-ray plate made at this time by Dr. Leaming

*Read before City (Charity) Hospital Alumni Society, Oct. 16, 1912

showed the stone in the bladder, and it was shortly passed during urination.

The stone is somewhat fusiform in shape, one and one-half cm. long and seven mm. thick. There was a small, sharp, projecting point near one end which has become broken off by handling, and the entire surface is rough and uneven.

The case, it seems to me, demonstrates the usefulness of this method of treatment in some cases at least.

132 West Seventy-third Street.

A SAFETY SCREW DRIVER AND SCREWS FOR LANE PLATES.

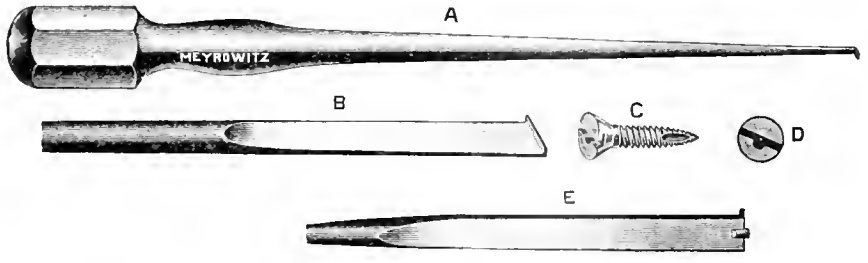
By ARNOLD WOOD,

NEW YORK.

This screw driver is so made that it will always catch the screw centrally and cannot slip or pull out of the slot on the head of the screw so long as the driver is held in a perpendicular position or nearly so. When the screw is home in place, a slight motion of the driver sideways will disengage it from the slot which is cut in the head of the screw, as shown in the illustration.

The advantages claimed for this instrument are:

1. Absolute security against losing the slot in the screw.



2. No pressure is required to keep the screw driver in position on screw, thus permitting a more delicate manipulation.

3. Time is saved in swabbing to find the head of screw, necessitated in slipping of the driver from the slot.

4. Protection from injury to surrounding tissues and consequently a lessening danger of infection.

5. A material saving of time in operation, owing to simplicity of technique.

Dactylomegaly.—Ramond and David apply this name to a group of cases in which there is a characteristic enlargement of the fingers or toes. The clubbed fingers of tuberculous subjects were recognized by Hippocrates, and the name "hippocratic fingers" was given to this condition. Trousseau perceived in this a grave prognostic sign. Pierre Marie described two forms of digital hypertrophy, namely, that which is associated with acromegaly and that which is a manifestation of pulmonary osteoarthropathy. Hanot and others described a form of digital hypertrophic osteopathy occurring in biliary disease, and still other observers described a similar condition in cardiovascular affections and in nephritis. David recognizes two forms of dactylomegaly: an essential or primary, and a secondary variety. The primary type presents itself in either of two forms. In one of these there is a concomitant hypertrophy of the nail. The finger has a lanceolate appearance or one resembling that of a serpent's head or drumstick. In the second form there is no enlargement of the nail which, however, is the seat of dystrophic lesions. The diagnosis of dactylomegaly presents little difficulty. It may be confounded with acromegaly or with Paget's disease. The deformities of the hand and fingers in chronic rheumatism and in arthritis deformans present a characteristic appearance. In the cheiromegaly of Charcot and Brissaud the hypertrophy affects the metacarpal bones and not the phalanges.—*Le Progrès Médical.*

Medicolegal Notes.

Opinion Evidence Admissible.—In an action for injuries it was held proper to permit a physician to testify that in his opinion the plaintiff suffered from "a traumatic neuritis" and another to state that in his opinion she was suffering from "a nervous condition due to a bodily injury, which is usually classed as traumatic neurosis"; such statements referring merely to the nature and character of the plaintiff's ailment, without suggesting the particular cause.—Torreyson v. United Rys. Co. of St. Louis (Mo.), 145 S. W. 196.

Malpractice—Excessive Damages—Both Defendants Not Necessarily Guilty.—In an action for malpractice against two physicians and surgeons the evidence showed that the plaintiff had been suffering for several years from a malady for which she was told a surgical operation would be necessary. She went to Dr. C., who examined her and found her anemic, run down in health, unable to work, and suffering from complicated uterine troubles—her uterus being enlarged and ulcerated, emitting a foul discharge and protruding so that she could only walk with difficulty—and the bladder and rectum were involved. Dr. C. told her that an operation was necessary, but that he did not do that kind of operation, and suggested that Dr. B. would perform it. On July 20 the operation was performed at a hospital by Dr. B., who removed the diseased uterus, fastened the bladder in its proper position, closed up the wound with a deep suture and surface stitching, and placed in it for drainage a narrow strip of iodoform gauze eighteen inches long, which was subsequently removed by Dr. C. Within a week an abscess formed between the vagina and the rectum, which was lanced by Dr. C. Three days after Dr. B. again opened the abscess and put some gauze in it, which it was claimed was afterwards removed by Dr. C. The abscess continued to suppurate and four weeks after the first operation the plaintiff was removed to her home. The defendants continued to visit the plaintiff until October 6, when, the abscess having failed to heal, the defendants concluded there was some foreign matter in it and advised an exploratory search with an instrument. This the plaintiff refused to submit to. On October 3 she had, without the knowledge of the defendants, called in Dr. R., who examined her and found pus coming from the abscess. A few days later Dr. R. performed an operation with a grooved director, enlarging the fistulous opening of the abscess so that it could be examined with a finger. He extracted through the mouth of the abscess two pieces of surgical gauze, one about six or seven inches square, the other about one and a quarter inches square by a quarter of an inch thick. Soon after the abscess healed and the plaintiff began to get well. The cause of action was based on the theory that the defendants had negligently left the gauze in the plaintiff's body at the time of the first operation. The jury returned a verdict for $6,000 from which the plaintiff remitted $4,000. It was held that this was very much larger than a reasonable compensation for any damages sustained by the plaintiff and called for a reversal of the judgment. It was also held that, as one of the defendants might, under the evidence, have been found guilty and the other not guilty, it was error for the trial court to give the jury instructions which assumed that if one defendant was liable both were liable.—Hansen v. Crocker, 160 Ill. App. 514.

Exhibiting Personal Injuries to Jury.—It is within the discretion of the trial court to permit the plaintiff in a personal injury case to exhibit his injuries to the jury, in order to show their extent or to enable a surgeon to demonstrate their nature and character. It is also discretionary to permit tests and experiments in the presence of the jury in a proper case and under proper safeguards. But where there are no wounds, no injuries that can be seen by the jury, it is improper to permit the exhibition of plaintiff's person for the purpose of conducting experiments to prove that he will cry out with pain, or that his muscles will grow rigid when his legs are manipulated in a certain manner. When it appears that the probable effect of the exhibition will be, not to instruct the jury as to the nature and extent of the injuries, but to excite their sympathies or inflame their passions, it should not be permitted.—Landro v. Great Northern Ry. Co., Minnesota Supreme Court, 135 N. W., 990.

MEDICAL RECORD.

A Weekly Journal of Medicine and Surgery.

THOMAS L. STEDMAN, A.M., M.D., EDITOR.

PUBLISHERS

WM. WOOD & CO., 51 FIFTH AVENUE.

See fourth page following reading matter for Rates of Subscription information for Contributors and Subscribers.

New York, December 14, 1912.

THE INVASION OF THE UNFIT.

IN an address before the Mental Hygiene Conference in this city on November 14, Mr. William Williams, U. S. Commissioner of Immigration, inveighed forcibly against the weakness of the defences against the admission of insane and mentally defective immigrants to this Port, a matter to which we have frequently called attention. It is no exaggeration to say that the exclusion of the subjects of mental disease is of vastly greater concern to this country than is the quarantining of cholera, smallpox, plague, or any other infectious disease. The introduction of cholera or of plague into New York would be unfortunate, but even if the disease became epidemic for a time, which is improbable, the application of modern sanitary methods would soon arrest it and the loss of life would be inconsiderable. But the admission of mentally defective immigrants strikes at the very roots of the nation's existence. It is from these and their descendants that the criminal classes are largely recruited; they crowd the insane asylums, they furnish the Guiteaus, the Czolgoszes, and the Schranks, the Lefty Louies, and the Gyp the Bloods, and they start vicious strains leading to incalculable misery, pauperism, and criminality in future generations.

It is the duty of the officers of the Public Health Service at Ellis Island to safeguard the country against the admission of these lumps of poisonous leaven, but it is the duty of Congress to enable the Service to perform its difficult task effectively, and in this duty Congress has thus far signally failed. The unthinking are prone to blame the immigration authorities for passing the many defectives that now enter the country, but, as Mr. Williams points out, the force at Ellis Island is utterly inadequate in numbers to prevent this influx. Laws are useless without a sufficient number of officials to enforce them. A force of twenty-one medical officers at Ellis Island can hardly be expected to pick out all the insane and mentally defective in over 2,000 immigrants passing under their observation every day. During the past ten years there has been an average of nearly 2,500 immigrants entering the Port of New York every day, or over 100 a day to each inspector. Who is the alienist who would pass on the mental condition of fifteen persons an hour, most of these, moreover, speaking an unknown tongue and able to communicate with the physician only through an interpreter! There are not even twenty-one inspectors available for the mental and physical examination of the immigrants, for there is a multitude of other duties engaging the attention of the medical officers of the Public Health Service. There are at times several hundred patients in the hospital and many more, adults and children, with minor ailments have to be looked after.

Mr. Williams says, and he is very moderate in the statement, that there should be at least three times as many medical officers stationed at Ellis Island as there are now, and he also recommends that an inspector should be placed on board every transatlantic steamer bringing immigrants to this port. Such an officer, coming in daily contact with the steerage passengers during the five to twelve days of the ocean passage, would have the opportunity to study them carefully and leisurely and would thus be able to detect many cases of mental disease which now elude the vigilance of the inspectors during the necessarily hurried inspection upon arrival. This, of course, cannot be done without the sanction of Congress, but although it has been twice recommended to that body no action has yet been taken.

The newspapers are very free with advice to the Governor-elect of this State in relation to appointments and other local matters, but they ignore the opportunity which he has, while still a member of Congress, to introduce a bill of far greater import to the State of New York and the Nation at large than anything they have suggested. Mr. Sulzer, we doubt not, feels fully the responsibility which will soon weigh upon him in the government of this great commonwealth. One of the greatest of these, if he does not recognize it now he soon will, is the care of the insane. The State Hospitals are already overcrowded, and the number of unfortunates that must be taken care of is constantly and alarmingly increasing. The passing of a bill by Congress, increasing the medical staff of Ellis Island and providing for inspectors on the transatlantic steamers would go far to solve this one, at least, of the problems that will vex the future Governor. Mr. Sulzer can at this time do no more signal service to the State, over which he has been called to rule, than to introduce such a bill and urge its passage.

THE HEALTH OF THE BUSINESS MAN.

THE health of the city dweller is being discussed from various points of view. There are many who claim that to the conglomeration and massing of persons in large centres are due the physical and mental defects which are so prevalent now and which are said to be increasing. By many authorities recently the back to the land cry has been loudly voiced as the most potent remedy for progressive degeneration. On the other hand there are those who argue that living in the country, at any rate, in the way the American farmers generally live, is by no means productive of good health

and is responsible for the many digestive troubles to which the American farmer and family are prone. These assert that, as a rule, the city boy and girl and the city man and woman are healthier than those of the country. But on one point all are agreed, namely, that city life should be made as healthful as possible. Much is said nowadays concerning the stress and strain of business life and these enemies of health appear to be almost as greatly in evidence in supposedly easy-going Europe as in this, which it is the fashion to call the land of hustle and bustle. In London a few weeks ago a conference was held under the auspices of the Incorporated Institute of Hygiene (*Medical Press and Circular*) to discuss the health of the business man. Sir Thomas Crosby, the Lord Mayor of London and a medical man of some note, said that during an experience of sixty years' practice in the city he had remarked a great change of views with regard to the health of the city office toiler, and he believed that the health of the clerk was at the present time well looked after. He also pointed out that the improvements made in drainage and water supplies had been wonderful and that, of course, the worker had benefited thereby. Sir William Bennett was inclined to think that matters sanitary were still susceptible of great improvement, and Dr. Olsen remarked that the business man was naturally a brain and not a muscle worker, and, therefore, did not need the heavy meals that many city men were accustomed to eat. Especially in his opinion should hurry at meals be avoided and the consumption of meat in the middle of the day was also deprecated. Dr. Cameron Gillies thought that the rush and worry of city life was a fruitful source of dyspepsia. This was not owing so much to errors of eating or drinking but to the high strung nerves of many of the workers. Dr. Farquhar Buzzard held the view that mere rush and a sedentary life were not mainly responsible for ill health. Hereditary causes were fruitful of trouble, and bad habits, such as over-drinking, over-eating, and over-smoking, brought about many breakdowns. He did not believe in muscular exercise for neurasthenia, but in recreation. Dr. Cahill thought that the business man had on the whole an easy life and that his health and longevity compared favorably with those of other classes. Another speaker said that the business man ate less and drank less than formerly and consequently enjoyed better health. Most of the speakers expressed the opinion that but little should be eaten in the middle of the day and some seemed to think that two good meals in the day were quite sufficient. The most important part of the London Conference was that which dealt with the eating and drinking question. A man who does not take enough exercise or who does not perform sufficient manual labor to enable him to digest and assimilate a large quantity of food and particularly flesh food, should be very careful as to quality and quantity of food he ingests. Such a man does not require much meat and after a certain age the less meat he eats the better will it be for him and assuredly he should not eat much in the middle of the day—for the matter of that he should not drink much, either. As for exercise, that is a more debatable point. The majority of businece men take too little regular exercise and many sporadically take too much. In this instance the personal equation is almost all important.

"GENUINE" EPILEPTIC CRISES IN NON-EPILEPTICS.

The fundamental distinction which held good for years between "epileptic" and "epileptiform" convulsions has long been regarded by progressive neurologists as untenable. Several types of individual who cannot by any stretching of criteria be regarded as epileptics are nevertheless known to have convulsive attacks in every way characteristic of true epilepsy Conversely there is no reason why an epileptic should not have attacks which, occurring in sound subjects, would simply be styled epileptiform. Bratz's so-called "affect epilepsy," which so closely resembles the genuine convulsions that the subjects are placed without hesitation in asylums and colonies, was found not to be epilepsy only after prolonged observation. In recent years neurologists have reported cures of these or similar cases, after years of confinement in institutions, by Freudian psychoanalysis. Another category of this pseudoepilepsy is seen in Oppenheim's psychasthenic convulsions. Narcolepsy, so called, is hardly distinguishable from *petit mal*—in some cases perhaps only because there are no evidences of the epileptic constitution or of other epileptic manifestations.

At the recent session of the Society of German Neurologists the entire subject of epilepsy and its congeners received such a discussion as has not perhaps befallen it in years (*Deutsche medizinische Wochenschrift*, October 24). Redlich prophesied that all other criteria must give way to the study of the epileptic disposition which must of necessity be the sole foundation of all true epilepsy. In this connection we must bear in mind that many subjects of this constitution have never exhibited epileptic manifestations. We therefore have to study more deeply the factors which bring out the manifestations. Binswanger and others do not hope for much aid from studies based on etiology plus anatomy, although very clean-cut epilepsies of this nature are constantly encountered. Minute anatomical changes like Alzheimer's gliosis (found in some 40 per cent. of autopsies) are better explained as the result of the convulsions than as an anatomical foundation. From another point of view other frequent anatomical finds like sclerosis of the cornua of Ammon are mere evidences of a hypoplastic brain and stand in no causal relation whatever with epilepsy.

Peritz discussed induced spasmophilia in adults. About 20 per cent. show an overexcitability of idiomuscular sensibility. He claimed to be able to produce in neuro- and psychopathic subjects by means of Aschner's test (pressure on the eyeball) slowing of the pulse, lowering of blood-pressure, a pathological blood picture, an entire series of vasomotor symptoms, and finally epileptiform attacks and absences. In other words, there appears to be a vasomotor component in epileptic and other dis-

charge phenomena. The independent vegetative existence of the autonomous nervous system has naturally often been assumed to figure in spontaneous nervous outbreaks.

Meyer announced that in true epileptics convulsions could be promptly precipitated by various substances—large doses of sodium chloride after salt starvation, urea, and even simple salts like sodium citrate and carbonate. These reactions may be used for diagnostic purposes as they never induce convulsions save in true epileptics.

THE UNITED STATES PUBLIC HEALTH SERVICE.

The Public Health Service, which was placed at the last session of Congress in the position of increasing its already well-recognized efficiency, receives considerable attention in the annual report of Secretary MacVeagh. The latter emphasizes the fact that Congress has favored the policy of developing this important phase of governmental activity. Although not intended to replace or interfere with the public health activities of cities or States, nevertheless, the Public Health Service may materially aid the latter and at the same time may fulfill certain independent functions. For these purposes it requires adequate appropriations. These amounts will at any rate seem insignificant in comparison with the immeasurable returns which they will yield in public health and happiness. The Secretary points out that the usefulness of the Public Health Service is being promoted on every hand in spheres of activity that can be performed only through the agency of the Federal Government.

These statements emanating from an important member of the Cabinet should tend to allay the feeling, which has been fostered in recent years, that the Public Health Service is in an uncongenial official atmosphere. Referring to the supposed advantages of uniting the Public Health Service with other bureaus, some of whose activities are more or less related to health matters, the Secretary says: "It is doubtful whether large economies and better administration can be secured by the consolidation of bureaus from different departments. Take for example the Public Health Service. That now has a head and organization of its own and individuality of its own—and stands alone face to face with its own work only; and practically the only association of the head of the department with a service like the Public Health Service is to render assistance to that service when it cannot get assistance in any other way, and to give it protection when it cannot otherwise be protected; and, finally, to make sure—as there must be somewhere somebody to make sure—that the right men are in charge of the work. The statement made the other day by a well-known municipal health officer that the Treasury Department is apt to take only the money view of public health is a conspicuous evidence of the insufficient consideration given the subject. This Public Health Service can and will develop, without interruption, to the full boundaries of its own province if it is given the comparatively small appropriations that are required. Then, after the development, which nothing now obstructs, its form of organization can be reconsidered. Meanwhile, it would be a great mistake to complicate this distinctive, clear cut, comprehensive, and independent work with any other work—and especially to associate it with other bureaus which have their own independent existence and reason for existence; because this would bring it into relations, which, to say the least, it does not need, and would forfeit, in any plan that has been suggested, its actual independence. It would not absorb but would be absorbed."

Tuberculosis Among School Children.

In the campaign against tuberculosis no part is of greater importance than that of safeguarding school children against infection. Philip of Edinburgh insists that if the tide of tuberculosis is to be stemmed the child must be so reared that he will be immune to infection, and that, in fact, the problem of the prevention of tuberculosis resolves itself into the problem of properly caring for the child. Nietner, General Secretary of the German Central Committee for the Prevention of Tuberculosis, recently delivered an address on tuberculosis in childhood at the Medical School of the Royal Hospital for Diseases of the Chest, London, in which he dwelt upon the vital importance of school medical service, cooperation of teachers, care of teeth, and school hygiene in the waging of the campaign against the disease. He was especially emphatic as to the importance of the rôle of the school physician in such a campaign and was of the opinion that the office of school doctor should be a whole-time appointment, and only in exceptional cases a part-time duty, and the school medical service should be made general throughout a country. He believed that the colleges for teachers should also be included in the school medical service, as well as the trade schools. He pointed out that while it is the children belonging to the lowest classes who chiefly call for medical supervision in the elementary schools, in the higher schools it is the age of puberty which is chiefly associated with pathological phenomena, for which fact a too arduous program of school work at a period of active physical development must be held, at least, partially responsible. Nietner's paper was for the most part a description of the thorough way in which Germany is endeavoring to cope with tuberculosis in children, and as such is worthy of the attention of other nations who are not yet equipped for the fray so adequately as is Germany. There is no doubt that the problem of tuberculosis is above all the problem of tuberculosis in childhood.

Infectious Diseases Incidental to School Life.

At a meeting of the Ulster Medical Society, held in Belfast on November 7 (*Medical Press and Circular*, November 13, 1912), the president, Dr. R. W. Leslie, discussed infectious diseases incident to school life, their early recognition, treatment, and control. For eighteen years Dr. Leslie had acted as medical officer to one of the largest boarding schools in Ireland and was, therefore, well qualified to speak with authority on the subject. He had noted that outbreaks of infectious ailments almost always occurred in the winter half of the year and chiefly in February and March. The commonest ailment by far was measles, but the most important from various points of view was scarlatina. The difficulties of diagnosis in the early stages were great, yet it was precisely at this period, he said,

that the disease was most infectious. Careful watching was necessary in every case of sore throat. With regard to measles Leslie said it was remarkable that there had never been a case in the school between April 1 and September 30, in any year. Mumps came second to measles in frequency. In several cases of the latter disease acute pancreatitis had occurred as a complication and orchitis was noted in more than 10 per cent. of the cases.

News of the Week.

School Inspection.—Dr. Ira S. Wile, the recently appointed member of the Board of Education of New York, has protested to the Mayor against the action of the Board of Aldermen in practically wiping from the City Budget for next year the provision for medical inspection of the parochial schools in this city. Dr. Wile points out that there are approximately 130,000 children in these schools, for the proper inspection of whom it was proposed to add to the present force of medical inspectors and supervising nurses, which is sufficient only for public school inspection, one medical inspector for each 9,000, and one nurse for each 4,000 children. From this minimum allowance, however, the Aldermen have dropped nine inspectors and eight nurses, thus leaving 81,000 children in the parochial schools without medical inspection and 32,000 without the attention of a supervising nurse. This so-called economy has the effect of nullifying the money spent on medical inspection of public schools, since each uninspected school is a possible focus for the spread of infection.

New Radium Fields.—Rich deposits of radium have, it is said, been discovered near the Salzburgerkopf in Austria.

Physicians' Study Travels.—At a subscription dinner held December 7 in Philadelphia, a committee was appointed to organize the American Society for Physicians' Study Travels, Dr. James M. Anders being elected chairman. All American physicians interested in foreign study travels are invited to correspond with the chairman, 1605 Walnut street, Philadelphia, Pa. It is announced also that in connection with the International Medical Congress to be held in London next summer, plans are being made in this city for the organization of a study tour for physicians, leaving New York on July 3, visiting the most important capitals and medical centers on the Continent, and ending in London the week of the Congress. Details may be obtained from Dr. Richard Kovács, 236 East 69th street, New York.

Rural Nurse Corps.—The project of the Red Cross Society for the establishment of a rural nurse corps throughout the country took definite shape recently when the promise of an annual contribution of $5,000 for this purpose was received.

Personal.—Col. William C. Gorgas, chief sanitary officer of the Isthmian Canal Commission, sailed from Panama for Ecuador on December 4 for the purpose of making an estimate of the cost of the proposed sanitation at Guayaquil. Col. Gorgas has declared his intention of making every Southern port within seven days of Panama as free from disease as is the Canal Zone itself.

Dr. Roland G. Curtin of Philadelphia has been elected vice-president of the New England Society of Pennsylvania, and Dr. Marcus E. Dwight has been chosen physician to the same society.

Prize Essays.—The Committee on Prize Essays of the Medical Society of the State of New York offer the following suggestive, though not arbitrary, subjects upon which competitors for the Merritt H. Cash Prize and the Lucian Howe Prize, of $100 each, may submit essays: (1) Diagnosis and treatment of syphilis of the central nervous system. (2) The present status of serum therapy. (3) Latest research relative to cancer. (4) The order and sequence of vascular and cardiac disease. (5) The function of the State in limiting the increase of imbeciles and degenerates. (6) Surgery in functional and organic disorders of the stomach. Essays submitted in the competition must be in the hands of the chairman of the committee, Dr. Albert Vanderveer, 28 Eagle street, Albany, N. Y., not later than April 1, 1913.

Medical Congress Museum.—A committee, headed by Prof. A. Keith of the Royal College of Surgeons, London, has been formed for the purpose of organizing a museum in connection with the XVIIth International Congress of Medicine to be held in London in August, 1913. It is felt that the collection of museum material in one center possesses obvious advantages over the plan of leaving each section to collect and house the specimens required by the readers of its communications, and that the study of the available material will be enhanced by the coordination of the various departments. The committee is, therefore, seeking exhibits from provincial and foreign institutions and from private collections, it having been decided to leave the collections of the London hospitals undisturbed. The committee will defray the expenses of transit of the exhibits, and will insure them against damage and loss, besides taking every reasonable precaution for their safety. Anyone willing to place material at the disposal of the committee is requested to communicate with the Honorable Secretary of the Museum Committee, Dr. H. W. Armit, Ravenhurst, Talhot Road, Wembley, England.

Antehymeneal Medical Inspection.—At a recent convention of the Episcopal Diocese of Nevada resolutions were unanimously adopted in which the clergymen of the State pledged themselves to demand a certificate of health from each of the contracting parties before performing the marriage ceremony.

Gifts to Charities.—By the will of the late Mr. Theophilus J. Zurbrugg of Mount Holly, N. J., the sum of $250,000 is placed in trust for the erection and maintenance of a hospital at Riverside, N. J. Besides this, $5,000 is left to the German Hospital of Philadelphia for the endowment of a free bed, and $5,000 also to the Burlington County, N. J., Hospital.

Mt. Sinai Hospital, the Montefiore Home for Chronic Invalids, and the Visiting Guild for Crippled Children of New York, each receive $2,500 by the will of the late Mr. Ferdinand Hermann of this city.

By the will of the late Mrs. Mary A. Johnson of Philadelphia, the sum of $5,000 is bequeathed to the Presbyterian Hospital of that city for the endowment of a free bed in memory of the testator's daughter.

Harvey Society.—The fifth lecture of the season will be delivered on Saturday evening, December 14, at the New York Academy of Medicine, by Prof. Frank Burr Mallory of the Harvard Medical School, Boston, on "The Infectious Lesions of Blood Vessels."

German Medical Society.—At the annual

meeting held in New York on December 2, the following officers were elected for 1913: *President*, Dr. G. Seeligmann; *Vice-President*, Dr. H. Fischer; *Recording Secretary*, Dr. M. Rehling; *Treasurer*, Dr. S. Breitenfeld.

Association of Resident and Ex-Resident Physicians of the Philadelphia Hospital.—The twenty-sixth annual reunion was held in Philadelphia on December 3, Dr. Lawrence F. Flick presiding, and Dr. Benjamin F. Stahl acting as toastmaster. Among the speakers were Dr. J. Solis-Cohn, Dr. Joseph S. Neff, Dr. J. Ewing Mears, Dr. Theodore Diller, and Dr. Richard C. Morris.

Frederick County (Md.) Medical Society.—At the annual meeting held in Frederick the following officers were elected: *President*, Dr. Morris A. Birely, Thurmont; *Vice-Presidents*, Dr. S. S. Maynard, Frederick, and Dr. Ralph R. Browning, Myersville; *Secretary*, Dr. B. O. Thomas, Frederick; *Treasurer*, Dr. H. P. Fahrney, Frederick.

Williams County (O.) Medical Society.—The following officers were elected at the annual meeting of the society, held on November 22: *President*, Dr. J. A. Weitz, Montpelier; *Vice-President*, Dr. F. E. Solier, Bryan; *Secretary-Treasurer*, Dr. D. S. Burns, Bryan.

Prize Essay on Diabetes.—The Society of Carlsbad Physicians announces a prize to be given for the best essay on "The Treatment of Diabetes Mellitus, with Special Reference to Balneotherapy." The jury will be: Hofrat Prof. Dr. Ritter v. Jaksch of Prague, Prof. Dr. Luethje of Kiel, Prof. Ortner of Vienna, Prof. Dr. Schmidt of Innsbruck, and Dr. Edgar Ganz, President of the Society of Carlsbad Physicians. It remains optional with the judges to award either one prize of 5000 Kronen, or two prizes of 3500 Kronen and 1500 Kronen, or three prizes of 3500 Kronen, 1500 Kronen, and 1000 Kronen. The competition is open to physicians of all countries. Any language may be used. The time of contest expires December 31, 1913. Any further information may be obtained from the Society of Carlsbad Physicians in Carlsbad.

Obituary Notes.—Dr. Maurice Francis Sullivan of Brooklyn, a graduate of the Dartmouth Medical School, Hanover, N. H., in 1887, died at his home on November 29, aged 48 years.

Dr. Samuel J. T. Ritter of Bethlehem, Pa., a graduate of the Eclectic Medical College, Cincinnati, in 1897, died at his home of pneumonia on December 4, aged 36 years.

Dr. Nathan G. Ward, of Philadelphia, a graduate of the Jefferson Medical College, Philadelphia, in 1893, formerly assistant in laryngology at the Jefferson Hospital Dispensary, clinical professor of laryngology and rhinology in the Medical Department of Temple University, Philadelphia, and a member of the American Medical Association, the Pennsylvania State and Philadelphia County Medical Societies, and the American Academy of Ophthalmology and Oto-Laryngology, and attending laryngologist and otologist to the Samaritan and Garretson Hospitals, died at his father's home in Elizabeth City, N. C., on December 4, aged 40 years.

Dr. George Ernest Jarrell of Notasulga, Ala., a graduate of the Maryland Medical College, Baltimore, in 1904, and a member of the Alabama State and Macon County Medical Societies, died at his home on November 25, aged 32 years.

Dr. Charles Erskine Brayton of Stonington, Conn., a graduate of the College of Physicians and Surgeons, New York, in 1873, a member of the American Medical Association, the National Association of Railway Surgeons, and the Connecticut State and New London County Medical Societies, and a former president of the last, and for six years health officer of his borough, died at his home on December 2, aged 61 years.

Dr. George Edwin Jones of St. Augustine, Fla., a graduate of the Ohio Medical College, Cincinnati, in 1859, a member of the American Medical Association and of the Indiana State Medical Association, and a veteran of the Civil War, having served as assistant surgeon in the United States Navy, died at his home on November 30, aged 77 years.

Dr. John Ely Brackett of Washington, D. C., a graduate of George Washington University, Department of Medicine, in 1870, a member of the Medical Society of the District of Columbia, and emeritus professor of the principles and practice of medicine in the Howard University School of Medicine, died at his home recently after a long illness, aged 66 years.

Dr. Jaquelin E. Knight of Waycross, Ga., a graduate of the Atlanta College of Physicians and Surgeons in 1909, and a member of the American Medical Association and the Georgia State and Ware County Medical Societies, died at his home on November 18, aged 26 years.

Dr. Henry Moore of Indianapolis, Ind., a graduate of the Kentucky School of Medicine, Louisville, in 1864, chairman of the board of trustees of the Indiana State Tuberculosis Hospital at Rushville, died suddenly at his home on December 2, aged 71 years.

Correspondence.

PROPHYLACTIC VACCINATION AGAINST TUBERCULOSIS.

To the Editor of the Medical Record:

Sir:—The notoriety given by the public press in this country to the claims made by Dr. Friedmann of Berlin before the Berlin Medical Society on November 6 last, interests the writer more particularly on account of Dr. Friedmann's statement that he has vaccinated 360 children within the last year with a vaccine consisting of living tubercle bacilli, that had been found non-virulent by laboratory experiments. The *Berliner klinische Wochenschrift* of November 18 contains Friedmann's paper in full, and also the discussion which followed its presentation. In the latter, several of those participating made it clear that, with the evidence at hand, the use of a living virus, which for the time had lost its virulence for laboratory animals, was not justified and implied serious risks. Citron called attention to the experience of Pasteur, with a presumably non-virulent living virus of chicken-cholera which though first apparently successful, for some unknown reason regained its virulence later, and instead of protecting, caused veritable epidemics in the fowls which had been injected for the purpose of their protection.

It appears to me that even with the risk of using a living virus, Dr. Friedmann has not supplied the slightest evidence that he has conferred any degree of resistance or of immunity on the children which he inoculated. The only evidence which he sets forth for this purpose, namely that these children are "so far free from scrofula" can scarcely be called evidence of immunity, nor does

it preclude the possibility of his having actually infected them, since an intra-muscular injection of tubercle bacilli does not necessarily produce clinical evidence of tuberculosis in the time which has intervened, and need not do so until many years later.

Comparing Friedmann's work with that of Dr. von Ruck of Asheville, as reported in the MEDICAL RECORD of August 31, 1912, one cannot but be gratified with the precautions and extreme care employed by him, with a vaccine the use of which could imply no real danger, since it contains only extractives of tubercle bacilli, likewise from a non-virulent culture proven to have been so for over 10 years. But for this evidence of safety and the additional evidence of its value I could never have consented to its use in some 400 children of the Baptist Orphanage here and under my medical charge.

The evidence of its value has been demonstrated as completely as this is possible to do by the presence of specific antibodies in the sers of vaccinated animals, and in their complete protection against an infection much more virulent than those made by Dr. Friedmann, who admits that he lost all his animals of tuberculosis in spite of his vaccination, after infecting them with a weakly virulent culture that killed on an average after 110 days, whereas the infected control animals of Dr. von Ruck all died in less than half this time. Dr. von Ruck demonstrated further that the serum of non-vaccinated children had neither bacteriolytic nor germicidal power and contained no specific antibodies, or at most but a very limited amount; whereas they were present in large amounts on the fifth day after vaccination, and he showed their correspondence with the bacteriolytic and germicidal power of the serum *in vitro* and *in vivo*. Although all animals infected with virulent tubercle bacilli acted upon with serum taken before vaccination became tuberculous and died, all animals infected from the same culture acted upon with serum taken after vaccination, withstood the infection and remained free from tuberculosis. In recent re-examinations of the children in whom I am particularly interested the same bacteriolytic and germicidal power has again been shown without exception, and in a new series of 120 children, vaccinated within the last three months, the same results have been obtained.

In the difference between this pioneer work done in our own country and the results shown by Dr. Friedmann of Berlin there is a most complete refutation of the latter's postulate that for the production of immunity in tuberculosis a living virus is absolutely essential and that an inflammatory infiltration the size of a nut to half an apple must be produced and must continue for a month or two at the site of injection for its full development.

C. A. JULIAN, M.D.

THOMASVILLE, N. C.

THE PREGNANT WOMAN, TUBERCULOSIS AND HER SAFETY.

TO THE EDITOR OF THE MEDICAL RECORD:

SIR:—It appears that in my paper on this subject in the MEDICAL RECORD of November 16, several fundamentals were not elaborated. This omission was due to taking too much for granted and staying too closely by the text. The good results of treatment there mentioned should be attainable by any physician, or if not obtained, then the cause of failure will be found in carelessness or inattention to details of simple nature. In the care of a tuberculous pregnant woman the advantages of fresh air, ample diet and abundant exercise are well known. Every such patient that I have seen had already, or previously, been carefully advised as to their value; but each woman also had some difficulty which rendered the advice futile, because past carrying out. Considering air, diet, and exercise as an indispensable trinity of therapeutic measures then I have yet to see the tuberculous pregnant woman who could possibly avail herself of the instructions of her medical adviser if she were left in the condition in which she came under my care. Lucky ones might utilize two of the factors, but many could use none of three to their fullest benefit. The physician had ordered the unattainable and had taken no single step to make it available. What is the profit in telling a woman to live out of doors, to practise deep breathing, and to sleep in the open, if we ignore the easily observed fact that stuffy or obstructed nostrils are the rule among the class of patients under discussion? Are not the nostrils the entrances for air? Does not the thoracic pump begin at, and demand, a free intake if its mechanism is to work normally? One thing a pregnant woman should have is oxygen in abundance; and the results of advising plenty of fresh air to a patient with an obstructed nose are exactly what one would expect. Oxygen minus, carbonic dioxide plus, and the bacilli may dance with joy like the "Morning stars," hardly to the motive of "Good will to men" though. In the presence and under the baleful influence of a diminished intake of oxygen, therapeusis is lame, indeed. Therefore, in the name of "horse sense" the physician must either free that nostril or refer the patient to some man who can and will free it. Among non-tuberculous pregnant women absolutely typical normal nasal passages are rare, but among tuberculous ones the common and usual finding is that one or both nostrils are in such bad condition that mouth breathing, with consequent dust inhalation, is a habit.

As to diet, its careful regulation becomes a farce if the patient's teeth are so irregular that she has note a "bite" in her mouth; why not test the matter with wax? The test is easily applied, and my results show that never have I found a perfectly normal bite, consequently the usual liquid diet of milk and eggs does benefit the patient markedly because the digestive tract is no longer upset as a sequence of ineffecive or incomplete mastication. If you cannot bestow upon the woman a good bite, possibly you may feed her so much milk, eggs, and cream that she can eat nothing else; but it seems better to me to call in consultation some one who can and will mend the bite before advising the patient to go upon a full diet which she cannot chew nor prepare for absorption, and which, if persisted in, means only ruin for the alimentary canal, upon the kind offices of which so much depends in the safe carrying of the fetus. In the matter of exercise two conditions should be pointed out: *a*. Walking is the form of exercise most generally available. *b*. The walker is over-weight and gaining. This often breaks down her feet. Call them fallen arches, chronic sprain, or any term that pleases you, but the pregnant woman's feet are frequently in such condition that she either cannot walk at all or can only

do so with an inconvenience and handicap which vary from undue fatigue to positive pain. If tender feet are found in connection with a pendulous, unsupported abdomen swinging freely at each labored step, why then, insistence on long walks is a cruelty, severe and inexcusable, save only on the plea of ignorance.

Summary.—A pregnant tuberculosis patient to be treated successfully must have: (1) A free nose; (2) a good bite; (3) good feet; (4) a proper abdominal supporter. Otherwise the advice upon the subjects of fresh air, of elaborate and careful diet and of long walks in the open air signifies nothing.

Dr. Arthur Jacobus, who kindly read this letter, suggests that my direction or prescription in the first paper is indefinite, so I will state that I am now prescribing a mixture of one part lysol, ten parts ichthyol, and twenty parts aq. menth. pip. in half teaspoonful doses, taken in four ounces of water before each meal, and eight grains of calcium creosote after each meal. He also suggests that I use the words chewing or grinding teeth, instead of the expression bite. This is a good point, but I would explain that by the word "bite" I intended to convey the result of the meeting of two sets of opposing teeth in perfect apposition, and the expression, "the patient has not a good bite in her mouth," means that no two opposing teeth meet perfectly. It is not at all rare to find teeth in such poor apposition that when the jaws are closed the tongue may be touched, practically anywhere, by a match or tooth pick thrust between them by the hand of the examiner. Quite a different condition from the almost solid wall with which the normally placed teeth protect the tip of the tongue. It makes small difference in ultimate result whether the teeth are missing or malocclided. Mastication is bad or lost, that is all. The alimentary canal suffers in any case. The doctor also points out the importance of regular bowel action. As an expert is tuberculosis he knows the imperative need of a daily evacuation, but with the pregnant woman afflicted with tuberculosis, if the bowels are not carefully looked after you may then have stercoremia gravidarum, and this has a death rate to the mother of one in two and one child in three is delivered alive. I need hardly point out that, in the presence of the eclampsia which accompanies stercoremia, tuberculosis becomes negligible.

Douglas H. Stewart, M.D.

128 West Eighty-sixth Street.

OUR LONDON LETTER.

(From Our Regular Correspondent.)

THE B. M. A.'S SPECIAL MEETING OF REPRESENTATIVES —ANNUAL MEETING OF R.C.S.—DISCUSSION ON RESPIRATORY NEUROSES—OBITUARY.

London, November 22, 1912.

The special meeting of the representatives of the B. M. A. has been held and a decided position taken up. Mr. Lloyd George now knows for certain that he cannot dictate terms to the profession. On Tuesday, after full discussion, more than 200 delegates being present, it was almost unanimously resolved that the latest proposals of the Chancellor are "unworkable and derogatory to the profession." The consequence of this is that "service under the Act and Regulations as at present constituted" must be declined. As the members of the B. M. A. number a majority of the profession this decision practically shows that the threats of Mr. Lloyd George are vain, for it would be impossible for him to bring the "medical benefits" of the Act into operation by the appointed day, January 15. After this it was proposed that the last offer of the Chancellor affords an opportunity of conferring with him and the Commissioners "with a view to the settlement of the points on which the demands of the profession have not yet been met." This was discussed in all its bearings and evidently commanded the approval of nearly if not quite all the representatives, but to make the position perfectly clear it was agreed to take a vote by card. The result of the card vote was announced on the opening of the second day's meeting (Wednesday). It was a very great surprise; in contrast with the overwhelming majority for the first resolution declining to work the Act, the second, informing the Chancellor that any further proposal from him would be considered, was only carried by the barest majority. The representatives' votes were equal within one, viz., 100 and 101, representing the card poll as 9,292 and 9,269.

The State Sickness Committee was then reappointed. Next, five delegates were nominated to confer with the Chancellor. But with that love of complex arrangements which is a defect of the B. M. A., these five gentlemen are not told to conclude an agreement, but to report to the State Sickness Committee, which in its turn is to report to the Council. Even this body cannot act effectively, for if any change in the conditions now existing be proposed it is to report the matter to the divisions in the United Kingdom, and these are directed to call meetings of all medical men in their localities, whether members of the B. M. A. or not, and take a vote as to acceptance or rejection of the terms offered. Is not that an excellent example of "How not to do it"?

The position does not seem much different from what it was a month ago, except that Mr. Lloyd George knows that he must make some concession. It is hoped he will confer with the five deputies early next week. It is feared by many that the wily politician will be more than a match for them. Another member of his Advisory Committee, Sir John Collie, has withdrawn from it.

The annual meeting of Fellows and Members of the Royal College of Surgeons was held yesterday when a resolution was passed approving the action of the Council "as far as such action went" in reference to the Insurance Act. The limitation is suggestive of the usual do-nothing policy of the college. The mover held that an amending act was imperatively required and public opinion would support the demand. The seconder said they had only to put sufficient pressure on the government—the Commissioners being only its tools and creatures. Sir V. Horsley said the original central question was as to remuneration and that could not be severed from their social status. Mr. Geo. Jones thought it was not desirable to do anything more than endorse the action of the Council. This was done "as far as such action went," and then another resolution was carried regretting that the Council had not called a general special meeting of the Fellows and members to consider the Insurance Act.

The Medical Society of London last week held a debate on Respiratory Neuroses. It was opened by Dr. Samuel West, who discussed them in two groups, according as they are associated, or not, or lead to dyspnea and its consequences—cyanosis

and suffocation. Those so associated are spasmodic asthma, laryngeal spasms, and whooping cough. Those without dyspnea, etc., are paroxysmal tachypnea, the air-hunger of diabetes mellitus, and uremia and periodic respiration in its two forms of grouped respiration and Cheyne-Stokes breathing. In true asthma the breathing is slow with a greatly prolonged expiratory phase. The post-expiratory pause is absent, replaced by a post-inspiratory one. The muscles of inspiration are in full action, but there is little, if any, expiratory recoil. The passing off of the attack is indicated by a gradual return of the expiratory movements. The multiplicity of causes which provoke an attack is remarkable, but there must be also a predisposition and this cannot be located in the respiratory center in the medulla, but must be looked for above this—possibly in the brain itself. *Laryngismus stridulus* and allied spasms were accounted for by Dr. West in the same manner and even whooping cough he spoke of as a respiratory neurosis, though admitting the facts showed it was an infectious zymotic disease, the stress of it falling on the upper respiratory centers. Passing to his second group, he said that *paroxysmal tachypnea* is comparable to tachycardia in some respects, but not so important, for he had not seen it lead to any serious result. He would place it among these neuroses in a category by itself as the cardiac disturbance is by itself.

The *air-hunger* of diabetes and uremia, "steam engine breathing," usually comes on abruptly or must arise in the higher center, a conclusion supported by its association with or following coma. Some chemical body would seem to be the excitant.

Cheyne-Stokes breathing occurs in various conditions and is always of gravest significance. It is seen in the course of a disease of the nervous system above the medulla or where there is heart failure, mostly of left ventricle. But it has been recorded as occurring in a healthy person asleep or fatigued or aged, but very rarely. It has been shown to be sometimes set up by drugs and a similar state has been observed in animals. Dr. West dismissed these reports as of no clinical import, although interesting, as they might be in other respects, and said when the symptom was seen in a patient it indicated either cardiac failure or some morbid condition of the central nervous system above the medulla and pons.

Grouped respiration was a striking contrast as being very slow—not more than 8 to 12 as against the 40 to 120 of Cheyne. Moreover, it had no clinical significance. The general conclusion submitted to the society thus appears to be that in all the respiratory neuroses it is not to the center in the medulla, but more likely in the cortex that we must look.

Sir David Ferrier acknowledged Dr. West's lucid description and classification, but thought there is still room for investigation of the neuroirritability on which these spasmodic attacks ultimately depend. He doubted whether whooping-cough could be considered in the group, for it is infectious and evidently has a definite *materies morbi*, so differing from a true neurosis, and as much may be said of the emotional manifestations met with in hysteria. But he agreed that asthma is a true neurosis, and as Hughlings Jackson said, has close affinities with epilepsy. All essential symptoms of an asthmatic attack have been shown to be explicable by the constriction of the bronchioles from irritation of the vagus, the state of the membrane being secondary to this irritation. Inspiration is relatively easier but is obstructed, so it is not correct to call it a state of expiratory dyspnea. The contracted muscles, in fact, are the inspiratory. The expiratory, as the abdominal, are flaccid. Sir D. Ferrier went on to say he saw more of Cheyne-Stokes breathing than the other neuroses, as it so often occurs in cerebral cases, but he doubted if there was a satisfactory explanation of its mechanism. Such must apply to all conditions. But though it occurs chiefly in cerebral and cardiac failure it may occur in a normal state, in infants, in persons asleep, in hibernating animals, under some drugs. But more important than these it may be produced artificially in healthy persons. Haldane showed that breathing deeply while comfortably seated in an easy chair brings on apnea in two minues; this continues two minutes further, and then as ordinary breathing returns it is at first as Cheyne-Stokes, which gradually dies away. In the explanation it must be remembered that the normal respiratory excitants are fall of oxygen pressure and correlative increase of carbonic acid—the immediate excitant of the center which is highly sensitive to the heart variation. Excess of CO_2 causes hyperpnea; excess of O apnea. With lower O pressure the center becomes more sensitive to CO_2 and responding more energetically brings on hypernea, which dies away when O is increased and the CO_2 is washed out. A pause follows and the cycle is repeated. It has been shown that inhalation of air containing more than 2 per cent. of CO_2 (the amount which maintains the normal stimulation) may abolish Cheyne-Stokes symptom. So will inhaling pure O, which excites the center to send out forcible impulses and so wash out the CO_2 from the alveoli and the blood. Dr. Hector Mackenzie remarked that asthma might cease after an acute illness, which confirmed the idea that it was a neurosis. Dr. Leonard Guthrie regarded some other symptoms as due to lessened control of the higher center and spoke of such neurosis as somatic and psychosomatic. He had rarely met asthma and epilepsy in the same patient. But he thought there was association with "dead fingers." In young children asthma simulated bronchitis with more urgent symptoms which sometimes disappeared suddenly.

Dr. Buzzard was not sure the higher centers were concerned, but though scientific work tended to inculpate the lower. In sleep and slight cerebral depression the Cheyne-Stokes breathing did not occur, but only with depression so deep as to involve the lower centers.

Dr. Batten said in paroxysmal tachypnea the breathing was inverted, *i.e.* the pause came after the inspiration.

Dr. Steele-Perkins had seen an attack similar to an asthmatic one in an epileptic prevented by bromide.

Dr. Poynton had seen cases with enlarged thyroid, but no other sign of Graves's disease, but subject during pregnancy to attacks of severe dyspnea. Such attacks also were seen in salicylate poisoning and resembled those of diabetic coma.

Dr. V. Bell suggested that the relationship to insanity might be connected with narcotics as many asthmatics formed a habit of taking morphia or cocaine which had been prescribed with relief at first.

Dr. G. T. B. Blick of Broome, West Australia, has died in London, in his forty-fifth year. He had held a number of professional posts at Broome and

was the author of "Medical Experiences in Northwest Australia" and also of "Diver's Paralysis." He was M.D., Durham, and held the double qualification of the London colleges.

Brigade-Surgeon Lt.-Col. Wm. Owen died on the 13th, aged sixty. He graduated in Dublin in 1873 and served in India.

OUR BERLIN LETTER.

(From Our Regular Correspondent.)

THE GERMAN PUBLIC HEALTH ASSOCIATION—DISEASES CAUSED BY FOODS AND CONFECTIONS—MEAT POISONING—CAMPAIGN AGAINST THE MOSQUITO.

BERLIN, October 15, 1912.

THE convention of the German Public Health Association, which was held in the early part of September, was the occasion for the presentation of a series of papers of eminent practical importance, which it is hoped will become the starting point of numerous reforms in improving the health of the people. "Diseases Caused by Foods and Confections" was the subject of a paper by G. Mayer of Munich. Statutory enactments and improvements in technical processes have diminished the prevalence of certain diseases, such as poisoning by metals. There still occur, however, instances of poisoning from flour containing lead, which contamination is to be attributed to the fact that millstones are filled with lead. Ergotism, which formerly was so prevalent, has not appeared in Germany during the past thirty years, owing to the introduction of modern milling machinery. The contamination of margarine has given rise to cases of poisoning in Hamburg and thirty other German cities. The occurrence of wholesale methyl alcohol poisoning in Berlin during 1911, when there were affected 160 individuals, with 89 deaths, came up for discussion. Cases of toadstool poisoning still arise. Instruction in the schools and an efficient control of markets are important means of preventing the occurrence of this form of poisoning. Cases of fish poisoning are nowadays exceedingly rare, although Germany consumes annually seven kilos of fish per unit of population. It is important to note that a series of river fish, as the barbel, the pike, and the lote, at the time of spawning are poisonous, and that the roe especially causes severe diarrhea. Cheese poisoning is still observed, but only in certain parts of Germany. The instances of poisoning resulting from the use of egg preparations and even of potatoes are to be attributed to bacterial decomposition. Special care is necessary with reference to the use of crabs, since these are not prepared in a cleanly manner and are preserved with boric acid. The use of boric acid and other chemical food preservatives is strongly condemned.

Since 1860 trichinosis has affected 15,479 individuals in Germany. The introduction in 1900 of the official inspection of cattle has caused a rapid decline in the occurrence of this disease. In Bavaria, however, in which there is no such inspection, the prevalence of trichinosis has increased. It is particularly in the country where the inspection of cattle is lax that cases of illness contracted from diseased cattle are more common than in the city. During the past thirty years there have been reported 5,500 cases of meat poisoning. In 66 of 111 epidemics of this form of poisoning sick cattle were the cause. During the past twenty years there have been reported 600 instances of poisoning by the *Bacillus proteus* which is found in infected meat. The *Bacillus botulinus* which sometimes contaminates sausage meat has caused during the past thirty years 800 cases of poisoning with 200 deaths. The *Bacillus enteritidis* of Gaertner has given rise to 2,000 cases of poisoning in the past twenty years. The examination of sausage meat shows wide differences in bacterial content. The author counted sixteen million bacteria in one gram of sausage meat. The majority of cases of sausage poisoning occur in the kingdom of Saxony. It is recommended that the use of meat sterilizers be enforced in the meat industries.

The mosquito pest and its eradication was the title of an interesting paper by Professor Heymann of Berlin. The importance of this problem is indicated by the fact that the author had received appeals from thousands of places to give advice and assistance with reference to ridding these places of mosquitos. Many watering places and health resorts have suffered greatly throughout their entire existence from the presence of these pests. The patients in tuberculosis sanatoria and the soldiers in barracks have suffered from the same cause. In fighting the mosquito it is necessary to wage the war in two campaigns, one during the summer and the other during the winter. In the former the object is to prevent the development of new broods of mosquitos, and in the latter the object is to destroy the hibernating insects. The important measure in the summer campaign is the removal of the breeding places. Large areas of swamp may be artificially drained, while smaller ones may be removed entirely. The addition of chemical insecticides and the introduction of animal species that feed on the mosquito may effect the destruction of the larvæ and pupæ.

The winter campaign consists in the discovering of the hiding places of the mosquitos in enclosed spaces or in the fields, and then destroying them by means of smoking-out, burning, or the application of chemicals. A national campaign against the mosquito requires the training of an efficient personnel, composed of disinfectors and street, country, and forest workers. The public press and the public officials should cooperate in the work. The campaign should be extended over two winter and four summer months. Only when this work is continued for a number of years does it offer any promise of success.

Progress of Medical Science.

Boston Medical and Surgical Journal.

November 28, 1912.

1. Contributions of the Nineteenth Century to a Living Pathology. W. J. Mayo.
2. The Treatment of Pulmonary Tuberculosis by Artificial Pneumothorax According to the Method of Forlanini. G. M. Balboni.
3. Under Ether. H. T. Bailey.

1. The Nineteenth Century and a Living Pathology.—W. J. Mayo regards John Hunter as the dominant figure of medicine in the eighteenth century. He was anatomist, physiologist, and pathologist, and the great surgical philosopher of his time. In the early part of the nineteenth century anatomy, especially regional anatomy, became the subject of more accurate study. France led in this field of work, bringing anatomy to a high stage of development, and with it a specialized surgical technique, thus in her turn becoming the great medical center of the civilized world. The discovery of the germ origin of disease made Pasteur the greatest benefactor the world has ever known. Virchow placed cellular pathology upon a sound footing. Lister applied the germ theory to the treatment of wounds. Anesthesia and asepsis enabled surgery to assume an im-

portant part in solving the discrepancies between post-mortem findings and the nature of the disease as it existed during life. Surgery was positive and active, and one organ after another became the object of this form of study during life. Tait was the pioneer in abdominal surgery. Fitz made known to the world the part played by the appendix in the causation of infections in the abdominal cavity. It is now generally recognized that chronic irritation is a factor in the causation of carcinoma. Experimental investigation has been an important factor in revealing living pathology. Surgical experimentation has created distinct advances in the surgery of the cranium, the thorax, and of the blood-vessels. The *x*-rays have disclosed many of the inner secrets which have heretofore baffled the clinician and the surgeon. By what means can this great accumulation of the knowledge of disease be applied to aid individual patients? There is but one answer to the question—cooperation in medicine. Medicine must no longer be practised individually but by groups of men, each one bringing the results of his work and studies to bear upon the case.

2. Artificial Pneumothorax in the Treatment of Pulmonary Tuberculosis.—G. M. Balboni states that the theories advanced as to the cause of action of therapeutic pneumothorax are based on the mechanical immobilization of the lung and the diminished circulation resulting therefrom. The compressive action of the pneumothorax brings about its results in accordance with the general precept of surgical therapy, that the reparation of the solution of continuity demands the permanent evacuation of the contents and the bringing of the walls into contact. Forlanini's theory is that the destruction of pulmonary tissue and the resulting cavities are nothing less than solutions of continuity which do not heal because they are never completely emptied, but are, on the contrary, kept irreducibly gaping or open by the relative rigidity of the thoracic cavity. A properly produced pneumothorax frees or separates the lung from the thoracic wall, immobilizes and compresses it, reduces the cavities and empties them, and by the coalition of their walls brings about their obliteration and cicatrization. Another factor also comes into play. Whatever may be the manner of entrance into the lung of the pathogenic germs that cause phthisis, the successive spreading of the process comes about usually through the respiratory tract. Some part of the septic material, as it is being expelled during expiration, is easily drawn back into the lung during inspiration, causing the continuous formation of new foci of infection. The immobilization of the lung overcomes this, the prevailing, if not the only, cause of the continual spreading of the process. Thus the other lung, if not already diseased, is protected; the spreading of the infection into other parts of the body, such as the larynx and intestines, may be prevented; and a means of combating the spreading of the disease in general may be secured.

New York Medical Journal.

November 30, 1912.

1. Gastric and Duodenal Ulcers. W. E. Deeks.
2. The Inheritance of Acquired Characters. IV. J. Wright.
3. Urethral Drainage in the Treatment of Chronic Urethritis. G. H. Persson.
4. The Borderline Case: a Vital Problem. M. S. Macy.
6. The Induction Anesthesia. L. D. Frescoln.
6. Air Impurities—*Concluded.* Charles Baskerville.
7. Diet in Carcinoma. E. G Kessler.
8. Postyen and Its Natural Hot Sulphur Mud Baths. E. Pisko.
9. In Memoriam: General Robert Maitland O'Reilly, Surgeon-General, United States Army, 1902-1909. F. H. Garrison.
10. The Surgery of the Spleen. W. J. Mayo.

1. Gastric and Duodenal Ulcers.—W. E. Deeks believes that the following chain of conditions leads up to gastric and duodenal ulcers. A sugar starch diet, to the exclusion of fruits and vegetables, ferments and forms irritating diffusible organic acids which stimulate the gastric glands and give rise to hyperacidity. On the other hand, the same diet tends to a lessening of peristaltic action, and constipation, which are followed by anemia with lowered cell resistance. The combination of hyperacidity with lowered cell resistance in an anemic mucous membrane is sufficient to bring about a loss of continuity in the mucous membrane with the attendant bacterial invasion. Mechanical irritants of any sort may assist to the same end. With this theory as to the etiology of gastric and duodenal ulcers the author has devised the following plan of treatment: In severe cases with hemorrhage, he advises absolute rest in bed and a liquid diet for two or three days until the vomiting ceases and there is no more hemorrhage either into the stomach or duodenum. The liquids should consist of orange juice without sugar, milk, and broth. Then gradually one should add eggs, meat balls underdone, fresh fruits and green vegetables cooked, particularly those of the softer kind, like squash. After six to ten days every variety of meat, fish, green vegetables, and cooked and uncooked fruit can be given. Care must be taken to exclude in every form sugar, potatoes, bread, toast, cakes, and pastry. The only medication given is dilute nitric acid before meals from the onset of the attack. It is given with the object of destroying the bacteria of starch and sugar fermentation in doses of from fifteen to twenty drops of the dilute preparation in half a tumbler of water.

3. Urethral Drainage in the Treatment of Chronic Urethritis.—G. H. Persson states that suitable drainage in the urethral canal is indicated in the treatment of urethritis, because it provides for rapid elimination of pathogenic bacteria and their products. Sterile drainage is of great value as a diagnostic means to determine the presence of gonococci in doubtful cases. Antiseptic drainage serves the same purpose in the urethral canal as applications of gauze in surgical treatment of wounds. Drainage material used in the urethra must be absorbent in character, without which property it is useless. Lactic ferments are indicated in the treatment of chronic urethritis, because these bacteria when properly used have germicidal effects on the offending organism in the urethra. Certain lactic ferments produce under favorable conditions bacterial products which increase the activity of cells with which they are brought in contact, thus promoting the absorption in this instance of the perigranular infiltration that is the characteristic pathological factor in chronic urethritis. The requirements necessary for success are, first, a proper method of application by which drainage may be introduced without discomfort to the patient, and, second, the use of an emollient substance which acts as a lubricant without making the drain nonabsorbent and in which the desiccated ferment finds a favorable medium for development. This medium must be prepared with the aim in view of preventing the natural death of the ferment by neutralizing the excess of lactic acid when this reaches a point where it acts destructively to the organisms which produce it. This medium must also contain elements in the presence of which the lactic acid organism produces a large amount of enzymes, or that bacterial product which causes increased local cellular activity and induces the formation of bacteriotropic substances.

4. The Borderline Case in Mental Deficiency.—M. S. Macy has observed 125 cases of children in all of which, in the original series of examinations, appeared more or less definite signs of mental deficiency, including from two to four years' retardation according to the Binet-Simon tests, and also in every case a number of physical inefficiencies or deficiencies. These children, after careful study and consultation of experts, were all classed as feeble minded and recommended for special pedagogical treatment, as well as medical and hygienic care. Without exception these 125 patients, following upon proper medical and hygienic treatment, and having the advantage of intelligent and specialized pedagogical care during the period of from two to four years, have so far recovered from their "feeble-mind-

edness" that they have been able to resume and maintain their place in classes of children of their own age. For about thirty two per cent. medical care is still necessary; about thirty per cent. more are still handicapped by their sensory inefficiency, but not sufficiently so for any one to-day to class them as feeble minded. The author emphasizes the fact that schools—not institutional—and medical and hygienic care has accomplished the transformation in these cases.

7. Diet in Carcinoma.—E. G. Kessler notes that Beneke found the cancer cells rich in cholesterin. He assumed cholesterin to be a product of the proteins, which, however, is not proved, and he therefore recommended the removal from the diet of cancerous patients not only of cholesterin and lecithin, but also of all nitrogenous substances. To a certain degree traditional experience practically coincides with the postulates of Beneke. Observation shows that cancer occurs spontaneously less frequently among herbivora than among carnivora. Ethnographic observation shows that cancer appears more frequently in races having a high consumption of meat. In the literature there are frequent reports that the growth of cancer is strongly favored by an excessive meat diet. The proteins of the meat diet are all rich in sulphur, and in the author's opinion ought to be reduced. The diet which he would recommend in carcinoma would be as follows, to be modified according to the taste of the individual: Breakfast: Tea or coffee with sugar and cream (not milk, on account of the lactalbumins), little bread with much butter, fresh or cooked fruit. Dinner: Soup, of fruit or cereals or vegetables (not meat broths), peas, lentils, beans; for change, meat, two ounces at the most, purée of potato, dumplings, edible roots (carrots, beets), boiled or preserved fruits, rice, salads. Supper: Fruits with rice, potatoes with butter, salads. The amounts should be plentiful. The necessary quantity of casein, one or two ounces, can be mixed with butter and used with the various meals.

10. Surgery of the Spleen.—By W. J. Mayo. (See MEDICAL RECORD, November 16, 1912, page 915.)

Journal of the American Medical Association.

November 30, 1912.

1. Arteriosclerosis. T. D. Coleman.
2. The Menace to the Young Child of the Common Infectious Cold. T. S. Southworth.
3. The Occurrence and Etiology of Club-Foot. A. Ehrenfried.
4. The Value of the Social Service Department to the Children's Dispensary. M. Ostheimer.
5. The Infection of Rhesus Monkeys with Blood from Patients with Rheumatic Fever. O. M. Schloss.
6. The Value of Serial Radiography in Gastrointestinal Diagnosis. L. G. Cole.
7. The Origin of Tube-Casts. H. B. Erdman.
8. The Present Standing of the Operation of Litholapaxy. A. T. Cabot.
9. Suprapubic Cystotomy for Vesical Calculus, Indications and Operative Procedure. W. E. Lower.
10. Seminal Vesiculotomy; Its Purpose and Accomplishments. E. Fuller.
11. Death and Blindness from Methyl or Wood-Alcohol Poisoning with Means of Prevention. C. A. Wood.
12. A Plea for Longer Intervals in Milk Feeding. J. H. Comroe.

1. Arteriosclerosis.—By T. D. Coleman. (See MEDICAL RECORD, Vol. 81, page 1114.)

2. The Young Child and the Common Infectious Cold.—By T. S. Southworth. (See MEDICAL RECORD, Vol. 81, page 1160.)

3. Occurrence and Etiology of Clubfoot.—A. Ehrenfried states that congenital talipes occurs approximately once in every thousand births, and in one-tenth of all infants with congenital deformities. Of the two important types, equinovarus constitutes about 80 per cent. and calcaneovarus 20 per cent. Forms which cannot be classified under one or the other of these divisions are rare. The fixed type of calcaneovalgus is less common than the potential type. Equinovarus on one foot and calcaneovalgus on the other is quite unusual. Clubfoot is known to have appeared in near relatives in 5 per cent. of the cases. About 33 per cent. of all the patients are firstborn; in about 16 per cent. delivery is difficult; in 4 per cent. birth is premature and in 2 per cent. illegitimate. The condition appears in twins or triplets four times as often as in single pregnancies. It is accompanied by other congenital deformities in 12 per cent of all cases. There are three etiological factors to be considered: heredity, evident in 5 per cent.; early intrauterine causes, depending on faulty nutrition from a diseased condition of the chorionic villi, evident in 10 per cent., and mechanical causes operating later in intrauterine life, accounting probably for most of the remainder. In the last class, poor hygiene of pregnancy and work during pregnancy are undoubtedly causal factors of considerable importance.

4. Social Service in the Children's Dispensary.—By M. Ostheimer. (See MEDICAL RECORD, Vol. 81, page 1161.)

5. Monkeys and Rheumatic Fever.—O. M. Schloss states that his experiments fail to show that the blood of patients suffering from rheumatic fever contains an infectious virus capable of affecting rhesus monkeys. Either the causative agent of the disease is not present in the circulating blood in sufficient quantity, or, if it is present, rhesus monkeys are immune to its influence.

6. Serial Radiography in Gastrointestinal Diagnosis.—By L. G. Cole. (See MEDICAL RECORD, Vol. 81, page 1165.)

7. The Origin of Tube Casts.—H. B. Erdman believes that tube casts of all kinds, excepting the epithelial and fatty varieties, more frequently come from the protein elements of the blood, through temporary or permanent insufficiency of the glomerulus than from the tubular epithelium. Leaking of the tuft during the periods of hyperemia does not imply serious injury to the thin walls of the capillaries. Slight traces of albumin in the urine are not incompatible with good health. The diagnostic value of polynuclear leucocytes is often exaggerated as they are found in the average urine, and may be increased by the mildest irritation. Their value in the diagnosis of nephritis is slight unless they are incorporated in casts or obtained by catheterization of the ureters. In estimating the value of casts one should bear in mind that the kidney is subject to normal wear and tear, and this may be exaggerated at times without serious import; also as age advances slight kidney changes are apt to occur, often being focal in the senile and arteriosclerotic kidneys. Tube casts give no reliable information as to the functional power of the kidney.

8. The Operation of Litholapaxy.—A. T. Cabot points out that the mortality of this operation is 1.6 to 6 per cent., while the mortality of suprapubic lithotomy is from 10 to 20 per cent. He believes that litholapaxy is the operation of choice in all uncomplicated cases of stone. The litholapaxy outfit, while not very expensive, adds considerably to the surgeon's apparatus, and may seem a serious burden to a general surgeon who sees few cases of stone, and who therefore resorts to lithotomy when such a case occurs in his practice rather than send the patient to another operator. This position is strengthened by the belief that there is special danger requiring special skill in litholapaxy. These imagined difficulties are greatly exaggerated; there is less danger from litholapaxy without experience than from suprapubic lithotomy in experienced hands.

9. Longer Intervals in Infant Feeding. By J. H. Comroe. (See MEDICAL RECORD, Vol. 81, page 1117.)

The Lancet.

November 23, 1912.

1. The Rôle of the Cardiovascular System in Pulmonary Tuberculosis. Sir R. Douglas Powell.
2. The Clinical Significance of Different Forms of Regular Tachycardia. T. Lewis
3. The Occurrence of the Cholera Vibrio in the Biliary Passages. E. D. W. Greig.
4. Major Leonard Rogers' Method of Treatment of Asiatic Cholera. J. W. D. Megaw.
5. Erythremia. With an Account of Six Cases. J. Parkinson.

6. The Varieties and Treatment of Lateral Curvature of the Spine. R. C. Elmslie.
7. Purpura Fulminans. J. A. M. Cameron.
8. Jejunostomy in Combination with Anterior Gastroenterostomy in the Treatment of Chronic Gastric Ulcer. E. T. Tatlow.
9. The Dangers of Electricity from the Clinical, Forensic, and Hygienic Points of View. S. Jellinek.

1. The Cardiovascular System in Pulmonary Tuberculosis.—S. R. Douglas Powell states that the minute vessels are attacked very early in the lesions of tuberculosis and the tuberculous nodule is distinguished from all other growths by the early destruction of vessels and the caseation and necrosis which ensue. The early destruction of vessels in the lesions of tuberculosis is of advantage to the patient, for, were it not for this destruction, fatal hemorrhage would be a very frequent termination of advanced cases of the disease. The heart's action is almost invariably quickened in tuberculosis. A slow pulse when met with is always of good augury. The systemic blood pressure ranges rather low in some acute cases of tuberculosis, but may recover almost, if not quite, to the normal in chronic and quiescent cases. It is probable that the pulmonary arterial pressure is at least relatively high. A rise of systemic blood pressure in the course of tuberculosis is an indication of improvement and of favorable augury in prognosis. The author is of the opinion that the heart in pulmonary tuberculosis does not share in the wasting of other muscles. Consumptives on the whole have a much better circulation than they are given credit for, their hearts are relatively good, and a low blood pressure in them is mainly attributable to depressed cardiac function from excessive absorption of bacterial products. In some cases of advanced but quiescent phthisis one meets with great irritability of the heart, with attacks of palpitation or disturbed action easily provoked by exertion, emotion or dyspepsia, disturbances attended with great distress, sometimes with almost anginal suffering. There are cases of one-sided disease, with a fibroid and contracted lung; the heart is cramped on all sides in a restricted chamber with rigid parietes, instead of being surrounded by resilient structures whose peripheral influence is aspiratory to its cavities. In chronic and quiescent cases of tuberculosis the stagnant bacterial products may not get at all in the general circulation, or so gradually or in such small quantities as to cause little or no constitutional disturbance. If in such patients quietude is replaced by activity, the circulatory activity and blood pressure are raised in the perifocal zones, and there is brought about increased absorption of the bacillary products. The hurried breathing further increases the disturbance in these areas. It is upon the basis of this autoinoculation that the system of graduated labor in the sanatorium treatment of tuberculosis has been introduced as a means of bringing about autoinoculation and thus producing a gradual immunity by progressive stimulation of phagocytic action and of other agencies antagonistic to the bacillus.

2. Clinical Significance of Regular Tachycardia.—T. Lewis notes that there are forms of this condition. The first is the simple or physiological type of tachycardia. The other two forms are subdivisions of a single class—namely, the pathological type of tachycardia; they may be termed simple paroxysmal tachycardia and auricular flutter. The increase in the heart rate that occurs as the result of exercise, emotion, and fever, and that occurs in exophthalmic goiter, in chronic alcoholism, pulmonary tuberculosis, and other toxic conditions, is of the same nature in all of these cases. The rate of impulse formation in the region of the superior vena cava is increased, and both auricles and both ventricles participate in the altered rate. Whatever the mechanism, the fact remains that this is a simple exaggeration of a normal phenomenon. How is an acceleration of the heart's action of this type to be recognized? The heart-rate falls conspicuously when the patient lies down, it rises when the erect posture is reassumed, and it is increased by exertion and by excitement. Electrocardiagrams provide a valuable and the only method of estimating whether an individual heart beat has been propagated along normal channels or not. If the beat arises in an abnormal center the course of the contraction wave is necessarily altered and the beat gives rise to an abnormal type of curve. The second kind of tachycardia is of this type and includes the pathological forms of tachycardia; it arises, not at the normal center, but at some point away from it, and the new center is usually an auricular one. It occurs in short or long paroxysms, whence the term which describes it. But these are not the sole characteristics of this form of tachycardia, although they are among its chief ones. When simple tachycardias come and go, they come and go gradually; the pathological types of tachycardia appear and disappear abruptly. In auricular flutter, the third type of tachycardia, the rate surpasses 200, the maximal known limit being 335 per minute. The new rhythms arise in the auricle and probably away from the normal center; they also start and finish abruptly; they are also uninfluenced by posture, exercise, and other similar factors to a remarkable degree. Auricular flutter, besides being characterized by the greater rapidity of the heart beat, differs from the former group of cases in two respects: Although the rate of auricular contraction is extreme, being usually between 270 and 300 per minute, it is but rarely that the ventricle keeps these paces. In most instances this chamber beats at half the auricular rate, and the grade of acceleration is thus disguised.

3. The Cholera Vibrio in the Biliary Passages.—E. D. W. Greig reports the history of a case of cholera which presented several interesting and suggestive features. After the acute phase the patient lived for twelve days, dying from uremia. The cholera vibrio was found in the bile and there were pathological changes in the gall-bladder. The presence of the comma bacillus was demonstrated in the consolidated area in the lung. The pathological investigations indicated that the changes found in organs were the result of toxic action, the origin of this poison being probably the cholera vibrio growing in the bile. As the cholera vibrios die the intracellular toxin is liberated and passes into the system. The appearance of the cecum was striking. It resembled very closely the condition found in the large intestine of rabbits after the subcutaneous or intravenous injection of Shiga bacilli. From a consideration of the facts presented in this case the author believes that it will be necessary to revise the present conception of the distribution of the cholera vibrio in the tissues of man, and this revision may help to clear up certain unexplained problems connected with cholera.

British Medical Journal.

November 23, 1912.

1. A Clinical Study on the Avenues of Rheumatic Infection: Based Upon Examination of 75 Cases of Sydenham's Chorea. W. P. S. Branson.
2. A Possible Test in the Differentiation Between Human and Bovine Types of the Tubercle Bacillus. J. Fraser.
3. The Soil and the Seed in Tuberculosis. H. Sutherland.
4. A Note on Rat-Bite Fever, with Report and Temperature Chart of a Recent Case. R. W. Cruickshank.
5. A Ruling Habit Strong in Death. C. H. W. Parkinson.

1. The Avenues of Rheumatic Infection.—W. P. S. Branson concludes from his clinical studies that Sydenham's chorea and rheumatic fever are due to one and the same infecting agent. The action of the rheumatic poison upon a specifically predisposed central nervous system produces a characteristic nervous instability which may precede the appearance of choreic movements by some weeks, and may in other cases itself constitute the sole evidence of the choreic tendency, the phase of movements never becoming developed at all. The emergence of choreic movements is determined by emotional stimuli acting upon a central nervous system thus previously disequilibrated. The commonest avenue of rheumatic infection is the tonsil, and next to it the nose. The first essential of rational

treatment of rheumatic infection is restoration of the upper air passages to a healthy condition. Irrigation and thorough cleansing of the nasal passages, combined with antiseptic treatment of the nose and pharynx, should be a routine item of antirheumatic treatment; and the operation of enucleation should be performed without delay upon all rheumatic children who exhibit chronic enlargement of the tonsils or of the tonsillar lymphatic glands. Chorea is a common sequel of scarlet fever, but the appearance of movements is usually postponed until the patient has left the fever hospital.

2. Differentiation Between Human and Bovine Types of Tubercle Bacillus.—J. Fraser finds that just as the general reaction of the rabbit to infection by the human or bovine bacillus varies greatly in degree, so does the local reaction. The best situation in which to demonstrate such a local reaction is the synovial membrane of the knee-joint. Infection of the knee-joint of the rabbit with a bovine bacillus produces an intense reaction with acute synovial tuberculosis; infection with the human bacillus results in a chronic synovial thickening. The test is of value as quickly distinguishing between the human and bovine types of the tubercle bacillus.

3. The Soil and the Seed in Tuberculosis.—N. Sutherland has noted that there is more tuberculosis among the children of consumptives than among the children of healthy parents. This may be due to their exposure to infection, to their lowered general health, or to their heredity. There is more tuberculosis among the children of infectious consumptives than among the children of non-infectious consumptives. This must be due to exposure to infection *plus* lowered general health, inseparable from it as the result of the stage of the disease in the parents. Therefore it is not heredity which determines whether the children of consumptives will develop the disease, but the existence of certain immediate factors which are under one's control.

Berliner klinische Wochenschrift.

November 18, 1912.

Paratyphoid Bacilli and Congeners Outside the Human Organism.—Weber and Haendel conclude by reason of cultural finds with Loeffler's green solution and differential media of various kinds that there is a family of bacteria which occurs in three great groups. First the typhoidal bacillus in the narrow sense; second, a group to be considered in detail which consists essentially of paratyphoid bacilli, and third, coli bacteria. The second group is much the more complex and comprises a number of species which differ much among themselves. The first subdivision, paratyphoid bacilli in the narrow sense, comprises the paratyphoid B. of Schötmuller and related germs which cause meat poisoning, the bacillus of hog cholera and that of psittacosis. The second subdivision comprises the so-called Gaertner group inclusive of species which are pathogenic to rats. The third subdivision resembles members of the first and second in all respects save failure to respond to serological tests. Members of the third subdivision seem to be nearly ubiquitous, occurring in the dejecta of healthy men and healthy animals of all kinds used for food, in sausage and preserved meats, in other foods, ice, and water. Under certain conditions these bacteria may perhaps become pathogenic, while under ordinary conditions, in comparison with the paratyphoid and Gaertner subdivisions, they behave as saprophytes. They confer no immunity against the regularly pathogenic forms, as may also be inferred from the failure to agglutinate, etc.

Rupture of Bronchi in Thoracic Compression.—Schönberg having seen three cases of this form of traumatism investigated the literature of the subject and finds records of but thirteen other examples. The sixteen cases are analyzed, some of the results being as follows: In twelve patients the compression occurred from having been run over, and in three others the conditions under which the compression resulted were practically the same. The adult is much less likely to suffer from bronchial rupture because the ribs break. The oldest victim was 47 and but three were over thirty; while nine victims were children, three of whom were under five years of age. In the child compression of the chest of this sort may cause hardly any injury to the osseous system. In the sixteen cases, however, the majority, irrespective of age, suffered fracture of the ribs along with rupture of the bronchi, although the youngest victims of all appear either to have escaped outright or to have sustained less severe injuries (some data are defective). In regard to rupture of bronchi, the left was injured in eight cases, the right in six, while in two the lesion was bilateral. The nature of the injury was probably nothing beyond a direct crushing of the tube with resulting rupture. The only alternative is this or force—compressed air—acting from within, and the latter is hardly conceivable. The compression is doubtless effected by the breast bone. The sixteen cases are all autopsy finds and nothing is known of a recovered case, or of diagnosis during life, death having supervened in a few hours. The accident considering the frequency of thoracic compression is extremely rare.

Habitual Pareses of the Vocal Cords.—Gutzmann regards these as engendered by autoimitation but not necessarily as hysterical. After a child has suffered from a temporary paresis it begins unconsciously to imitate the condition, until a habit state is induced, manifested as hoarseness, whispering voice, or inspiratory stridor, according to the muscles involved. The affection almost invariably occurs in childhood, persisting sometimes into adult life. When first appearing in adult life, beyond the habit spasm period, they may be classed outright as hysterical. In habit paresis there still remains voluntary control of the muscles, so that this condition must not be confounded with true paralytic affections.

Münchener medizinische Wochenschrift.

November 19, 1912.

Cure of Sarcomatosis of the Skin with Thorium X.—Herxheimer first refers to the disrepute into which this resource has temporarily fallen as a result of certain fatalities. The author has used up to seven injections weekly each in twenty-five cases of severe dermatoses (mycosis fungoïdes, leucemic tumors, carcinoma, etc., and relates incidentally the following: Patient, a male aged 58, never really ill, who had recently noted several nodules on one side of the buttocks. The process diffused itself so rapidly that within a brief interval there were similar formations over the entire surface. Some of these grew as large as a half dollar, and they even appeared in the mucosa of the buccal cavity. The viscera were not affected and the blood state and general condition but little affected. Two trial excisions were made and the microscope appeared to show multiple sarcoma of the skin. Mycosis fungoïdes and leucemic tumors as well as so-called sarcoids could be excluded. As such an affection may be depended on to cause death the case was deemed one suitable for thorium X. A dose of one million Maché units was injected every eight days. None of the untoward symptoms said to follow the use of these injections in large dosage was observed. After the first three injections some of the lesions had disappeared and no new ones were in evidence. After seven injections hardly any evidence of tumor growth could be seen, even the pigment deposits which sometimes were left behind having ultimately vanished. The case may recur, and the treatment may fail outright in similar cases, but as it stands thus far the result leaves nothing to be desired.

Sodium Chloride in Anaphylactic Shock.—Langer in animal experiments has shown that the administration

per os of small doses of sodium chloride in the course of treatment with heterologous blood serum appears to have greatly diminished the severity of the anaphylaxis which normally results from a second serum injection at a later period. That some relationship exists between the action of sodium chloride and anaphylaxis was first shown by Heilner. The method has not yet been tested on man, although it evidently belongs in the same class as calcium chloride in this respect.

Hygiene in Goethe's Day.—Schule calls attention to some of the disadvantages with which Goethe had to contend. Most of his night work was done by candlelight and he often snuffed the candle with his fingers. Arrangements for heating and ventilation were very defective, conducive to colds, and the poet's death may perhaps be traced directly to this cause, as his last illness at an advanced age was doubtless due to exposure. There was no mean between the hot zone about the iron stove, and the cold, draughty air at a distance from the latter. Goethe, however, had a bath tub and used it regularly. The house was a superior one for the age, and the poet had the great advantage of having it so divided that his private chambers were quite distinct from the housekeeping apartments. There were conveniences of all kinds and in such a house such modern conveniences as elevators, steampipes, electric light and telephone were alone lacking, for in other respects there was evidently little to be desired.

Deutsche medizinische Wochenschrift.

November 21, 1912.

Malignant Tumors in Childhood.—Usener first refers to Steffen's monograph on this subject, published in 1905. He investigated the material of the Leipzig Children's Hospital during the years 1907-8 for additional material of this sort, and out of 173 tumors of all kinds found four which were malignant. These were all sarcomata, affecting respectively the clavicle, right kidney, abdominal wall, and jejunum. The ages of the children ranged from 4½ years to 13 years. Steffen collected notes of thirty-three cases of sarcoma of the long bones, in only one of which the clavicle was the seat. Malignant growths of the kidney, on the contrary, are frequent in early life and Steffen mentions 222 cases. These are spoken of as comprising sarcoma, carcinoma, and mixed growths, the term hypernephroma not being mentioned in this connection. The locations in the integument and intestine are both unusual. Some thirteen tumors developing in some portion of the small intestine have been recorded. In regard to the cutaneous site the few cases on record may have been congenital.

Preparation of Carbonic Acid Snow.—Heusner, after giving credit to Pusey of Chicago for the introduction of this resource into dermatology in 1905, enumerates a number of methods for obtaining the same, none of which it appears is ideal. There is no difficulty about the mere preparation of the snow as such, for it is only necessary to allow the compressed gas to escape from the proper opening in the bomb, just as happens in using ethyl chloride. But the snow should be gauged, and accurately localized. Hence it is by some solidified first, and a portion of the snow of the desired size applied after the skin has been protected by collodion or plaster. The snow may be allowed to form in a buckskin bag attached about the bomb opening. A drawback is the loose state of the snow which requires kneading and compression. It may be forced into small molds, with formation of cones or cylinders. One device allows the gas to escape directly into a perforated brass tube in which it solidifies. A valvular opening makes it possible to apply the snow directly to the skin. The jet may also be projected into a hollow cone with the same result. Still another device enables the snow to appear as a cylinder from the collecting tube as the result of pressure from a piston. All these resources satisfied the primary requirements, but some dermatologists object to metallic apparatus on account of its conductivity for heat which causes the snow to melt quickly. Others reply that metal is indispensable for sterilization. The author further believes that a carbonic acid snow generator ought to be useful in other directions besides that of cautery. It is superior to ethyl chloride as a local anesthetic, it not being inflammable, and is also a good hemostatic. His apparatus is desired to met all these requirements and can be made to furnish both snow and vapor. As the author's work is still incomplete and as he will shortly publish a full account of his apparatus and its uses, the technical details may be omitted here.

Treatment of Placenta Previa.—Zinke of Cincinnati gives a summary of the newer methods for managing this condition. He enumerates them in the following order: 1. Rest in bed with ice bag to abdomen. 2. Tamponade. 3. Induction or furtherance of labor; puncture of membranes or bringing down a foot. 4. Use of bags for dilatation. 5. Manual or instrumental dilatation. 6. Vaginal or abdominal cesarean section. Some of these measures supplement while others compete with one another. The last nine cases of the author ended fatally for three mothers and seven children. These occurred in private practice, the author having been summoned as consultant only. The management was the same for all—tamponade, podalic version, and slow extraction. This series is contrasted with one of Pankow's in which all the mothers (8) survived and all the children were delivered alive as a result of cesarean section, and similar results are being reported elsewhere on the continent. The author naturally leaned toward this and similar forceful interventions, but on account of the prejudice against them on the part of English speaking obstetricians and the public at large, the conservative Braxton Hicks management appears to be the only course open. Private patients shrink from the sudden hospital trip and private houses are not suitable for surgery. The two mortalities speak for themselves.

Diabetes and Tuberculosis.—C. M. Montgomery states that the evidence which he has collected does not show that tuberculosis occurs more frequently in diabetes than in the general population at the same age periods. However, one is impressed by two facts: (1) the lowered opsonic index to the tubercle bacillus and a number of other bacteria in diabetes; and (2) the large number of cases of diabetes late in the course of the disease developing a very acute, extensive, and rapidly fatal form of pulmonary tuberculosis. Tuberculosis occurs more frequently in diabetes than in certain other chronic diseases. The frequency of tuberculosis in diabetes varies with a great variety of different circumstances. In the author's 25 collected autopsies on diabetic patients, 6 showed active pulmonary tuberculosis varying in acuteness and extent of involvement, and 1 showed adrenal tuberculosis without tuberculosis elsewhere. Out of 355 autopsies collected from the literature since 1882, including also the author's 25 cases, 138 (38.9 per cent.) revealed pulmonary tuberculosis, mostly in an acute form. In some structures, for example, the bones, the author could not find a single case of tuberculosis in a diabetic patient. When diabetes and tuberculosis are associated the diabetes can usually be shown to the primary disease, in a number of cases it is impossible to show which is the primary disease, and in no case that the author has encountered has the tuberculosis been definitely proved by the evidence furnished to be the primary disease. When diabetes and tuberculosis are associated in the same patient either disease may show certain modifications in course and symptomatology, but often each disease runs a course apparently independent of the other. Like the clinical course the autopsy findings may reveal nothing unusual in regard to the tuberculosis, but in a number of cases one meets a tuberculous process that is marked by acuteness, the extensiveness of the disease, and a tendency to the early development of cavity formation. From the number of cases that have improved both as to their tuberculosis and their diabetes, one cannot consider the combination of diabetes and tuberculosis as necessarily more hopeless than the diabetes or the tuberculosis alone. The prognosis in many cases depends largely on the treatment.—*American Journal of the Medical Sciences.*

Insurance Medicine.

Medical Examiners from the Standpoint of the Medical Director.—In a paper read before the American Association of Medical Examiners, at Atlantic City, on June 4, 1912, Dr. Oscar H. Rogers, Medical Director of the New York Life Insurance Company, discussed medical examiners from the standpoint of the medical director. He divided medical examiners into two groups: First as to whether they are medical examiners in large cities, whether they give a great deal of time to their work, or whether this is only an incident. This division is made in order to determine by a system initiated by the New York Life Insurance Company whether the work of any examiner is good or otherwise. In looking over the work of the many examiners who do insurance work regularly, it is found that questions asked are answered in 98.5 per cent. of all cases. Rogers thinks that the point should be emphasized that the nearer the country practitioner brings his work up to the excellence, or up to the level of the answers made by the city examiners, the more efficient his work will be. Also, another fault to be found with medical examiners is their delay in answering letters. Another point is the failure to give sufficient detail as to any impairment in the health condition of the applicant; that is in at least one per cent. of the cases the medical examiner fails to make his pen picture of the applicant's condition definite and clear. Another point is incorrect diagnosis, or failing to find what should be found. This, according to Rogers, is mainly due to carelessness. Here again the city examiner shows up splendidly, with 0.25 per cent. as compared to the country examiner with nearly 1 per cent. Rogers concluded by stating that physicians throughout the country received as compensation for their share in the insurance business approximately eleven and one-half millions of dollars annually.—*The Lancet-Clinic*, Sept. 21, 1912.

Accident Prevention by Insurance Companies.—In a recent lecture on industrial accident prevention Mr. Van Schaack, director of Bureau of Inspection and Accident Prevention, Aetna Life Insurance Company, Hartford, Conn., said that there has been prevalent to some extent a supposition that a liability company's sole function has been to collect premiums, and that too little of the money thus received has gone out in actual payments to injured persons. The first part of this supposition is ill founded, he said, as those who are in the business know full well, though he would subscribe fully to the latter part. Too little has gone to the injured persons, but this has been on account of conditions over which the companies have had no control. They would much prefer that all the money expended for claims, outside of necessary and proper administrative expenses, should go to injured persons, but unfortunately they do not make the laws, have no control over the activities of the omnipresent claim promoter, and cannot prevent juries from rendering excessive verdicts. If the companies had their way they would gladly see that every injured person who had a real claim received proper compensation—no less, no more. Van Schaack went on to point out that his company, and presumably all insurance companies, use every effort to prevent accidents and after suggesting various means of so doing concluded that in considering possible plans of industrial accident insurance it would be well to keep this accident prevention feature prominently in mind. The laws may be stringent, every means of assuring a fair compensation to every injured workman who deserves it should be taken, but every agency engaged in furthering the work of preventing the accident, the most important thing of all, should be retained.—*Insurance Engineering*, September, 1912.

The Service of the Industrial Physician.—Koelsch used this term in the sense of inspection or supervision of trade industries from the hygienic viewpoint and upon the initiative and responsibility of the industrial organs. Medical cooperation in the supervision of industries is a new thing, for until recently it was objected to as unnecessary. The child's health can be controlled in a measure from birth up to the shop door but not beyond the latter. There are, indeed, official medical men nominally concerned with the welfare of factory hands, but this relationship represents only a private concession. The requirements of factory hygiene comprise such problems as the amount of space allotted to workers, the position of the latter while at work, protection from light and sound, proper temperature and air pressure, exclusion of dust and bacteria, and numerous other factors, neglect in regard to which may be highly prejudicial to the worker's welfare. The questions of woman and child labor and the general relations of the worker's health to that of the entire community also belong here. The field covered by this line of medical effort is extensive and varied. The incumbent would have to do expert work in private and forensic relations. He must cooperate with the non-medical inspectors and he comes in contact in regard to damage compensation with the medical men who have actual charge of the workmen, and also with the authorities of the various benefit societies. There should be organization and control of the medical men appointed by the Government to examine newcomers and make periodical examinations of the workers in dangerous trades. We know that these examinations are not carried out according to the design of the authorities. They lack the official quality, and should be standardized and made to include instruction of the worker. Finally, the industrial medical inspector must undertake the various hygienic examinations. The air must be analyzed for dust and gases, the illumination, moisture, temperature, the drinking and waste water should all be investigated. In occupations where disinfection is obligatory the efficacy of the latter should be checked up by cultures. Any suspicion of the presence in individual workers of occupational disease—anemia, lead line, etc., should be verified or disproved. The medical man should also do what he can to enlighten the workers directly and through literature with factory hygiene. These matters will eventually be taught in the trade schools. He should have certain hours outside of his regular consultation time to receive the workers and their employers and give his services in all ways save, of course, those of actual treatment. Finally, there are many subjects which have an indirect bearing on the workers' health—in fact nearly all medical subjects possess in theory such a bearing; and the medical inspector also has opportunities of turning his experiences into knowledge for the common good by reporting interesting cases and statistics. The industrial or factory inspector will eventually have the same status as the school physician, who was a long time in arriving at his present position.—*Zeitschrift für Versicherungsmedizin*, July, 1912.

Book Reviews.

DIABETIC COOK BOOK. By ANNA COLBY KNOWLTON. Price, $2.00 net. Englewood, N. J.: Published by the Author, 1912.

THIS book of recipes is dedicated "To those whose diet, for one reason or another, is restricted as to starches and sugars, and who may be interested in a more varied dietary than that which ordinarily is available under such circumstances." On glancing over the recipes and seeing the infinite variety of breads, cakes, and desserts of which patients on this restricted diet can partake, one is inclined no longer to pity them, so far, at least, as the table is concerned. The author presents forty-one recipes for bread, biscuits, muffins, and griddle cakes; twenty-two for cake; sixty-five for desserts; six for sauces; five for pies and pie crusts, and three for ice cream. With a new kind of bread or muffin every morning for six weeks, and a different dessert for dinner every day for nine weeks, the diabetic can have no cause to complain of monotony in his diet. The author claims that the recipes given have been recorded from practical experience and that each of them has been verified repeatedly, so that any person with ordinary culinary skill can obtain satisfactory results from their use. The book ought to be very serviceable in any family in which some one of the members is obliged for therapeutic reasons to partake very sparingly of starches and sugar.

MIND CURE AND OTHER ESSAYS. By PHILIP ZENNER, A.M., M.D., Author of "Education in Sexual Physiology and Hygiene." Price, $1.25. Cincinnati: Stewart and Kidd Company, 1912.

THE title of this little book is misleading. It is not a tiresome and impractical book on mind-cure, so much as a very practical one dealing with topics of vital interest. The author's previous book, on "Education in Sexual Physiology and Hygiene," received very favorable comment and afforded an example of how this subject may be approached and taught to the young. The present volume comprises a series of essays in the form of addresses delivered to educational organizations. It is an attempt to correct many popular errors, and to overcome ignorance in regard to topics which need to be taught to every generation. The subjects discussed are all in the line of preventive medicine. In an excellent chapter on mind cure, the author states that mental healing has a great usefulness but very definite limitations. "That usefulness ceases," he states, "wherever mental influence does not effect pathological processes." Very nicely put. "Quackery and osteopathy, though to a large extent such in fact, are ostensibly not mind cures, and are a harm only in so far as they bring the wrong treatment to the individual case." No statement could be more fair than this. There are chapters on Prevention of Nervous Disease—Training the Child; on Treatment and Prevention of Alcoholism; Social Disease—Woman's Problem; Defectives; Medical Inspection of Schools and the School Physician; Truancy; Eugenics, etc. Physicians may find this a useful book to recommend to parents and teachers. It is worthy of a wide circulation.

SALVARSAN IN SYPHILIS AND ALLIED DISEASES. By J. E. R. MCDONAGH, F.R.C.S., Surgeon to Out-Patients, London Lock Hospitals. Price $3. London: Hodder & Stoughton, 1912.

OF all the publications on salvarsan, none are more comprehensive or practical than this work. The objects for which it was written are (1) to describe salvarsan and relate its history and that of its forerunners, (2) to explain the method of its injection, (3) to estimate its potency as a specific against the *Treponema pallidum*, (4) to state with impartiality what it does do and what it does not do, what are its uses and what its abuses, (5) to demonstrate these facts by actual cases cited as evidence, and thus to arrive at an accurate estimate of its value. In the chapter on Toxic Symptoms, he shows the necessity of using freshly distilled water, proper preliminary preparation of the patient for the injection, and explains the occasional increased toxicity of the drug by the presence in the human body of organisms other than those which salvarsan is destined to destroy. With regard to neurorecurrences, he believes that their occurrence were almost as frequent as when salvarsan was not used, hence he concludes that they signify inadequate treatment. A short section is given to the discussion of fatal cases due to 606 and contraindications for its use. The intravenous method of injection is given preference, but his syringe and technique are more cumbersome than other models. In considering the effect of salvarsan on Wassermann's reaction, attention is called to the far-reaching significance of Gennerich's (Kiel) and Miliar's (Paris) deductions from their observations that an injection of 606 occasionally changes a negative Wassermann to a positive. McDonagh testifies to the correctness of their observations and advises that repeated studies extending over a fortnight be made following this provocative injection. Adequate attention is given to the action of salvarsan in primary, secondary, tertiary, and congenital syphilis, and syphilis of the nervous system. The clinical histories are clearly written and not burdened with inconsequential details.

ESSAYS ON GENITOURINARY SUBJECTS. By J. BAYARD CLARK, M.D., Assistant Genitourinary Surgeon to Bellevue Hospital, Consulting Genitourinary Surgeon to the Elizabeth General Hospital, Fellow of the New York Academy of Medicine, Member of the American Urological Association, Member of the American Association of Genitourinary Surgeons, etc. Price $1.25. New York: William Wood & Company, 1912.

AN idea of the character of this book may be obtained by mentioning the titles of the essays: Cystoscopic Diagnosis in Vesical and Renal Surgery, Tuberculous Kidney, Gonococcic Infections and the Physician's Responsibility, Some Necessary Principles in the Diagnosis of Surgical Conditions of the Upper Urinary Tract, Gonorrheal Prostatitis, Comparative Value of Some Urethral and Other Germicides, On What is New in Genitourinary Surgery, Is Genitourinary Surgery Justified as a Special Branch of Medicine? The By-ways of Prostatectomy, and The Gonococcus. The first seven have been published in various medical journals. The essay on gonococcic infections is well timed and should be read by every practitioner since it shows statistically the devastations of the gonococcus; facts well known to the urologist and due to almost criminal ignorance of general practitioners. He ends this essay as follows: "It may be said, the largest, and surely the saddest, part of this great public evil has its origin in the peoples', our neighbors', our friends', our patients' ignorance of the subject. The only key to the situation is the light of true knowledge, and the only source at present of this light is the medical profession, of which you and I are members." The essay entitled "Is Genitourinary Surgery Justified as a Special Branch of Medicine?" is philosophic in nature. What is said therein of genitourinary surgery applies to any specialty, since a specialty only justifies itself, when as a body its members can show superior art and skill. The essays on Tuberculous Kidney, Gonorrheal Prostatitis, and Urethral Germicides have been excerpted in contemporary medical journals. The views and opinions expressed are rational and wholesome, the literary style is excellent.

HANDBUCH DER NERVENKRANKHEITEN IM KINDESALTER. Von Prof. L. BRUNS, Oberarzt a. d. Hannoverschen Kinderheilanstalt und Nervenarzt in Hannover; Prof. A. CRAMER, Geh. Med.-Rat. Direktor der Kgl. Univ. Klinik für psychische und Nervenkrankheiten in Göttingen; und Prof. TH. ZILHEN, Geh. Med.-Rat., fr. Direktor der psychiatrische und Nervenklinik der kgl. Charité in Berlin. Nut 189 Abbildungen im Text und 3 Tafeln. Price 30 marks. Berlin: Verlag von S. Karger, 1912.

THIS volume is a most comprehensive one. It deals not only with those nervous diseases that occur mostly in childhood, but it discusses also those nervous diseases that occur occasionally in childhood, though found chiefly in the adult. The first section, under the authorship of Cramer, takes up the following subjects: nervousness, hysteria, epilepsy, chorea, stuttering, and fits in childhood. The second section, by Bruns, deals with the diseases of the spinal cord and peripheral nerves, and also with with polymyositis, myositis ossificans, multiplex progressive, and ischemic muscular paralysis. The third section is written by Zielhen, who discusses the diseases of the brain and of its membranes in childhood. Each of the divisions is a veritable treatise on its particular group of subjects. Thus in the first section 244 pages are devoted to the functional neuroses. The second section on the spinal cord and peripheral nerves comprises 300 pages. The last section on the brain and meninges consists of 421 pages. It is difficult to pick out any one portion of the book for special comment, so admirably does the work cover the entire ground of the nervous diseases of childhood. There are many excellent illustrations and a complete index. The general practitioner, the neurologist, and the pediatrist will find this book useful both as a text and as a work of reference.

Society Reports.

SOUTHERN MEDICAL ASSOCIATION.

Sixth Annual Meeting, Held at Jacksonville, Fla., November 12, 13, and 14, 1912.

(*Concluded from page* 1053.)

THE PRESIDENT, DR. J. M. JACKSON, MIAMI, FLA., IN THE CHAIR.

Some Economic Questions Related to Syphilis.—Dr. ISADORE DYER, New Orleans, said he had employed salvarsan in a number of cases, and he had had no serious accidents, but he was still regretting that he was led to the indiscretion of employing a remedy which in his humble opinion had no advantage over other tried medications, properly administered, for syphilis. The States were deliberating the establishment of laws requiring health certificates before marriage licenses were issued. It was more important to protect marriage contracts by requiring treatment for such diseases as syphilis than it was to aim at a restriction on natural inclinations. Hospitals for syphilis should be established in every State, not, as was claimed, as an incentive to vice, but as a deterrent. If syphilities were required to be hospitalized for the treatment of their disease, it would reduce the occurrence of syphilis and would encourage proper treatment. The South had its peculiar problem in this regard with the negro population, which it was hard to educate in sanitary or moral prophylaxis. The whole question of syphilis was alive in our present society, and needed the careful study of those interested in the future generations of our people. While treatment might be of great importance, of more importance was the study of the ways and means to educate the profession and the public in the care and in the prevention of syphilis and its consequences.

Importance of the Recognition of Syphilis in Circulatory Disease.—Dr. JOHN T. HALSEY, New Orleans, said the conclusions to be drawn from facts, indicated, *first*, that syphilis very frequently produced lesions of any portion of the circulatory system, and that it did so during the early stages. A routine Wassermann test should be and could be made in all such cases, nor was there any doubt that if this be done, much unnecessary suffering and disease would be prevented. *Second*, those who treated syphilis in any stage, but particularly in the early phases, should be on the lookout for evidence of disturbed circulatory function, and, when such was found, they should not be satisfied to treat the syphilis alone, but should treat the heart as well. The coexistence of circulatory disease and positive or presumptive evidence of syphilis called for energetic antisyphilitic treatment, and it could not be too strongly emphasized that iodide of potassium alone was not sufficient. Such patients must be given mercury or salvarsan, the choice between which should be governed by various considerations.

Hygiene of Syphilis.—Dr. OSCAR DOWLING, New Orleans, pointed out that as a preventive measure, segregation of the prostitute class, while unsatisfactory and undoubtedly a legalization of vice, afforded opportunity for medical supervision and treatment. Stringent, practical regulations, humane, adapted to local conditions, and rigidly enforced, would give results worth the effort involved. But to be effective there should be no favor, no laxity, no escape. Certainty and justice should be the keynotes. The best means of getting rid of syphilis or any similar disease was to educate the people by energetic, practical work daily. Vigilance in the control of bad practices, activity in the practical things pertaining to home life, enforcement of every health ordinance and regulation were means which spread the gospel of cleanliness and health. The hygiene of syphilis was the same as the hygiene of other contagious diseases. From its nature, specific work should be done to enlighten everyone as to its origin and to correct the false notion that it was contracted only in one way.

Syphilis of the Ear.—Dr. N. M. HEGGIE, Jacksonville, Florida, had seen only eight cases of primary labyrinthine deafness within the year, two of which were probably due to mumps and one to traumatism, leaving but five to be classified as syphilitic. In view of the fact that labyrinthine syphilis was not amenable to local treatment, he would advise patients to avail themselves of the treatment recommended by a syphilographer, just as readily as were the lesions of another organ.

The Effect of Antisyphilitic Remedies on the Wassermann Reaction.—Dr. WILLIAM LITTERER, Nashville, Tennessee, drew the following conclusions: 1. From the serologic point of view, injections of the biniodide of mercury gave better results, while the protiodide pills were the least satisfactory. 2. Apparently there was no very great difference serologically between the administration of salvarsan intravenously or intramuscularly in treating secondary syphilis. 3. Neosalvarsan appeared to be more efficacious than salvarsan. 4. In the primary stage of lues, especially before the appearance of a positive Wassermann and chancre excised, repeated intravenous injections of salvarsan or neosalvarsan gave promise of aborting the disease in quite a number of cases. 5. Serologically a combination of mercury and salvarsan appeared to have a distinct advantage over the administration of either of the drugs. 6. The Wassermann test as a therapeutic guide in the treatment of syphilis was paramount if one wished to carry it to a successful termination; in fact, it was the only method available of controlling the external manifestations of the disease.

Syphilis of the Eye.—Dr. DUNBAR ROY, Atlanta, Georgia, said the longer he practised ophthalmology and the more extensive became his experience, the more he realized the importance of considering syphilis as the most important factor in connection with ocular diseases. Diffused interstitial keratitis was exceedingly rare in the acquired forms of syphilis, and yet a number of cases had been reported. Iritis in various forms was by no means infrequent during the secondary stage of syphilis, less frequently during the so-called tertiary stages. Paralysis of the various muscles of the eye was frequently caused by syphilis. Ophthalmoplegia interna or paralysis of the sphincter of the pupil, usually unilateral, was by no means an infrequent form of syphilis. According to Alexander, three-fourths of such cases were due to syphilis, while, according to Uhthoff, only one-fourth. Disease of the eye due to congenital syphilis frequently showed many of the symptoms which were seen in the acquired variety. Usually those cases of the congenital variety were comparatively mild because the severe ones died either *in utero* or soon after birth.

Syphilis of the Nose and Throat.—Dr. H. H. MARTIN, Savannah, Georgia, said the secondary lesions occurring in the nose and throat were interesting, and sometimes troublesome, but were usually self-limited and seldom caused serious or permanent damage. They were of considerable diagnostic value and furnished fairly accurate indications of the progress or arrest of the disease. The tertiary lesions, on the contrary, played havoc with the bones, cartilages, mucous membranes and fibrous tissues of the nose and throat, and since they most often made their appearance some years after all active symptoms of the disease had disappeared, we must be constantly on our guard against them. In the nose a tertiary lesion might exhibit merely the symptoms of a bad cold, but the secretions very rapidly became purulent and offensive, and a careful inspection would reveal the lesion in the form of a more or less diffuse infiltration, or in a periosteal or perichondral abscess. The treatment of syphilis of the nose and throat was essentially constitutional, but there were some local measures which had proven valuable in his hands, and among them the mixture of calomel and lime water, known as "black wash." This could be used as a douche, a spray, or a gargle, and was especially valuable in the specific coryza of the new-born, in ulceration and in necrosis. The tincture of iodine was very useful in treating ulcerations when they were accessible. The secondary lesions required no local treatment and were best left alone.

Chronic Nasal Diphtheria.—Dr. CLIFTON M. MILLER, Richmond, Virginia, reported three cases of nasal diphtheria. In one case the nasal discharge was blood-stained with a blood crust around the margin of the nares. The third case differed from the others in that the diphtheritic condition in the nose was chronic and lasted about six weeks, during which time the child had several attacks of follicular tonsillitis, which, in his opinion, were due to the mouth-breathing and lowered resistance. Bacteriological examination of the throat during one of the attacks showed the absence of the bacillus of diphtheria, which was present in the nasal discharge. The diagnosis in all of these cases was confirmed by bacteriological examination. All of them occurred in private practice. The circumstances surrounding the patients were good.

Treatment of Chronic Laryngeal Stenosis.—Dr. HOMER DUPUY, New Orleans, after giving a description of some specially devised intubation tubes, drew the following conclusions: 1. When a laryngeal stenosis is the result of hyperplastic changes, some form of dilatation is the most logical method of overcoming it. 2. Gradual, systematic dilatation by intubation offers very favorable prospects of success. 3. The tube with a low-retaining swell and a wide head would seem to meet a want in the

treatment of this form of stenosis. 4. In children, hypertrophic laryngitis is largely responsible for a chronic laryngeal stenosis. 5. In this particular affection tracheotomy is more apt to induce connective tissue changes than to effect a final cure.

The Surgial Importance of the Breast.—Dr. E. DENEGRE MARTIN, New Orleans, said that if one-tenth of the time and labor expended in the elaborate operations devised for the cure of cancer had been devoted to its prevention, more women would be alive to-day to sing our praises. An important duty was the instruction of patients as to the care of the breasts. The expectant mother or nursing woman should be taught how to care for the nipples, for infection through a fissured nipple would not only lead to abscess and sometimes to complete destruction of the gland, but would leave scars to light up at some future time into inoperable carcinomata. In an experience of more than 150 cases of cancer of the breast upon which he had operated, three-fourths being on colored women, the latter already malignant when operated upon, he was not able to-day to point out more than four of these who had lived over a period of six years, and only twelve whites. Here the percentage was larger because they were seen earlier. Every week he turned away from his clinic cases too far advanced for even temporary relief. The surgeon who picked his cases would of necessity get the best results, but the benefit should always be given to the patient, even if it meant but a short prolongation of life. The mortality from operations was less than two per cent., and his, with 50 per cent. in advanced cases, was less than one per cent. These statistics were improving daily, so far as cures were concerned. Still, the prevalence of cancer was on the increase, and we could and must reduce it.

Tubal or Extrauterine Pregnancy.—Dr. J. HUGH CARTER, Memphis, Tennessee, said we should operate in all cases as soon as possible, as we never knew when hemorrhage was going to take place, even after it had seemingly been stopped. The six cases he had seen, four of which were his own, operated on by himself, two being of about six weeks' duration, and the other two about four and one-half months, all recovered. The other two he saw while an interne at the City Hospital. One occurred at full term, the operation being done during shock. The patient died in a short time. The other one, about two months, recovered after a long convalescence from subsequent infection. As to what operations should be done, he did not believe one could say until the abdomen had been opened. Then the operator should do whatever he thought best. Each patient and the conditions found in the abdomen must be dealt with individually. He would insist upon a careful diagnosis of each case of suspected tubal pregnancy as early as possible, thereby giving the patient a much better chance for her life.

Clinical Value of the Tuberculins in the Diagnosis and Treatment of Tuberculosis.—Dr. WALLACE J. DUREL, New Orleans, said in his personal observation of several hundred cases, it was evident that of eighty cases which were treated previously to 1909, of all those discharged as apparently well, and who were given the tuberculin test, the test proving negative, not one relapsed, yet many of the cases showed a distinct positive reaction upon their discharge and afterward relapsed, and three died since. This evidence convinced him that repeated tuberculin tests would show whether treated and supposedly cured cases were free from any tubercular focus, active or latent, regardless of its size or location, and that the negative reaction meant more than a mere toxi-immunity in such cases. The clinical therapeutic value of the tuberculins was exemplified in the tabulated records of 80 cases of tuberculosis treated in Louisiana previous to 1909. In this report, in the first stage, 13 cases were treated, with recovery of all, and no relapse until 1912. In the second stage, 16 cases were treated, with recovery in 10 and arrested in 1. In the third stage, 30 cases were treated, 14 apparently well, and 16 arrested. In 1912 one of the apparently well cases had relapsed, and one died. Of the arrested cases, three relapsed and two died. Of the third stage, 21 cases were treated; not one got well, 9 were arrested, 10 were improved, and 2 non-improved. In 1912 16 of the 21 cases had died. These figures taught the practical lesson that the early diagnosed cases of tuberculosis could be treated with far better and more lasting results than the advanced cases.

Surgical Complications in the Abdomen During Typhoid Fever.—Dr. CHARLES M. REMSEN, Atlanta, said that if we would put typhoid on a true pathological and surgical basis, view it from this standpoint, and look upon it as a potential abdominal calamity, and if we would familiarize ourselves with the signs and symptoms of the normal typhoid abdomen and with each separate case, and if we would realize that with speedy operation under proper conditions there need be little fear for the safety of our patient, and, if we would make as our criterion for operation the absence of a certainty that perforation did not exist, rather than a certainty that it did exist, and if we would realize the fatal issue that was involved in delay, it was not possible, but certain, that many cases of typhoid dying from perforation, entirely unrecognized, would be reduced to a minimum, and the cases of recognized perforation would enter more and more into their true surgical sphere and be eliminated from the known causes of death in typhoid fever.

Some Modern Factors of Safety in Surgery.—Dr. J. SHELTON HORSLEY, Richmond, Virginia, in summing up the recent factors of safety in surgical operations, advised anoci-association, reducing infection by conserving natural immunity and by the elimination of dust, transfusion of blood, arterial suturing, and the practical application of the surgeon's knowledge of pathology to the diagnosis and extirpation of malignant tumors.

The Discrepancy between Clinical and Postmortem Findings in Cancer of the Stomach.—Dr. W. A. BRYAN Nashville, attempted to show how we might discover more cases of cancer before the post mortem, or, preferably, before they had passed the chance of successful operation. His answer to this question was by revising our conception of the symptoms of cancer of the stomach and getting rid of the notion that it could not be present until a lot of symptoms had manifested themselves, when, if we would stop a moment we must know that they grew out of necessarily late or at least well advanced changes. We must forget these and study stomach cases that came to us until we could be satisfied that the symptoms were due to stomach pathology, or were referred from elsewhere. We must cease to think in terms of indigestion and search for real causes. When such cases were found a careful study of them for a week or so would impress upon our minds the probability of a serious lesion and help to determine its nature. Laboratory methods and skiagraphs were to be employed in conjunction with clinical study. Finding a tumor by palpation was very important; but the patient was much more fortunate who had his tumor found before it could be felt, and lastly, if the case was indicative of cancer, the whole of the facts should be laid before him, and he should have the privilege offered by exploratory incision. Personally, it would take no very grave suspicion of cancer for him to request exploration.

Milk Ordinances.—Dr. V. H. BASSETT, Savannah, Ga., read a paper on this subject in which he advocated publicity as a factor in securing and enforcing ordinances providing for the control of the production and sale of milk.

Fly-Borne Typhoid and Its Control in Jacksonville.—Dr. C. E. TERRY, Jacksonville, Florida, said the flyproofing of privies was protection against infection, and he was convinced from inspections made of these places, prior to the passage of the screening ordinance, that, second only to stables, they furnished the most prolific fly hatcheries in the city. What was true of Jacksonville, was likewise true of many Southern towns and cities where the sewerage systems were inadequate to the requirements and where the old type of privy was in common use, and in such communities he was convinced that the screening of these places would bear fruit in reducing typhoid mortality as it had in Richmond, Asheville, and this city.

Medical Inspection of Schools in South Carolina.—Dr. L. ROSA H. GANTT, Spartanburg, South Carolina, said in her paper that in common with the 8000 club women of her State, and as a physician, she wished to enlist the members in the fight for the medical inspection of school children of the South, together with a more thorough teaching of personal hygiene and the laws of health in the public schools of the Southern States.

Serum Treatment of Cerebrospinal Meningitis.—Dr. CHARLES C. GREEN, Houston, Texas, said that in Houston they had 182 cases with 74 deaths, giving a death rate of 40.6 of all cases, including those treated with and those treated without serum. Out of the total number of cases treated, 29 did not have the serum, consequently the death rate ran up rather high; having 21 deaths out of 29 cases, giving the enormous death rate of 72.4 per cent., which, although high, was even lower than the usual death rate where the serum treatment was not used. But of the 153 cases treated with serum, 53 died, giving a death rate of 35.5 per cent., showing a reduction of 37.9 per cent. in favor of the serum therapy. He had taken the number of cases that had the serum within 24 and 36 hours after the onset, and the death rate in these was only a fraction over 20 per cent.

The cases from which these statistics were obtained constituted the entire number of cases which appeared in Houston last winter, and were not only treated by the health officers, but by the physicians at large, some of whom were not familiar with the disease nor with spinal puncture. He believed that if all of these cases could be treated by men who were familiar with this procedure, the death rate would be still lower.

Pediatrics.—Dr. WILLIAM WESTON, Columbia, S. C., said the study of pediatrics dealt with that period of development in which functional activity was greatest, and during that period occurred diseases which seldom or never occurred in later periods of life. During the first year of life there occurred the greatest development of the nervous system. The brain grew almost as much during the first year of life as during the rest of life. Dentition and many other steps in development all had a special significance and should receive careful consideration if the aims of the pediatrists were to be fulfilled. Some of the more important aims were: Preservation of the race by studying the anatomy, physiology, and pathology of infancy; the effects of heredity, of infant hygiene, and of feeding. Only after thoroughly familiarizing ourselves with these elementary requisites could we successfully equip ourselves for the practice of pediatrics and be able to interpret symptoms in a rational and satisfactory manner. Then the pediatrist could justify his pretensions by so lowering the mortality table as to be well within the bounds of reasonable expectancy.

Some Mooted Points in the Feeding of Infants.—Dr. JAMES D. LOVE, Jacksonville, Florida, said that for some years past it was his practice, when the co-operation of hospital attendants and intelligent mothers had to be secured, to employ a very simple form of milk modification, using top milk and a diluent in proportion varying from 1 to 4 to 1 to 1, sugar and salt being added to maintain the ratio these should bear to the other constituents. But intelligent cooperation was sadly lacking in most of the feeding cases, standard top milk unobtainable not infrequently, and in many particulars the simplest form of modification through the use of percentage formulæ and top milk was fraught with difficulties which had led him to the adoption in routine private practice of the still more simple dilution of whole milk with water or some cereal decoction. In this view he had the support of many eminent clinicians and pediatrists. His individual experience led him to the conclusion that the average child could be successfully fed on simple dilutions of whole milk, and that it was the exceptional child that required a system based on percentages and the employment of top milk. With the present unsanitary dairy methods in vogue throughout the South, and even with the quasi-sanitary precautions practised by a few of the dairies, he regarded the use of raw cow's milk, especially during the summer months, as the greatest menace known to children. His own practice was to boil milk during the heated season for from three to five minutes, and during the cooler months to employ pasteurization where such was practicable. Under suitable conditions and for limited periods he regarded condensed milk and some of the proprietary foods as highly useful adjuncts. It was his custom to employ condensed milk or some of the proprietary foods in certain cases where it became necessary to remove the baby from the mother's breast during the heated period of the year, to be followed later with the use of cow's milk.

Tamponade Treatment of Accessory Sinuses and Its Effect on Intraocular Inflammation.—Dr. WILLIAM S. MANNING, Jacksonville, Florida, said it was particularly in so-called "idiopathic" cases or those in which there was apparently no cause for the inflammation that he found this treatment of special value. In these cases the ordinary methods were almost valueless. He was thoroughly convinced that chronic frontal sinus and ethmoidal infection was the sole cause of many of these so-called idiopathic cases of choroiditis and retinitis. A tampon, of such length and size as would snugly fit between the middle turbinated body and the septum and extend from the exterior portion of the nose to the sinus posteriorly, was first saturated with an aqueous solution of argyrol, 40 grs. to the oz., and then introduced. Through capillary attraction, it would deplete the proximate soft tissues and drain the ethmoid cells and other sinuses. In order to drain the maxillary sinuses, these tampons should be placed under the scroll of the middle turbinated body and above the upper part of the inferior turbinated body. It was his custom to allow them to remain *in situ* for from 20 minutes to one hour. The first effect was congestion of the conjunctiva, sneezing, and nasal discharge. On removing the tampons when infection was present, they would be found to be bleached on the upper surface, and sometimes throughout, the bleaching being in proportion to the amount of infection. He had treated by this method five severe cases of idiopathic retinochoroiditis in which blindness threatened, and in every case had obtained splendid results. He had treated by this method twenty-six cases of iritis, and marked improvement followed in all except two, in which syphilis was an etiological factor. By far the largest class of cases that he had treated, however, had been those of obscure frontal headache variously diagnosed as malarial, gastric, refractive, etc.

Gangrenous Tonsil.—Dr. U. S. BIRD, Tampa, Fla., said that so rare was this disease that it was not a textbook nor reference book subject. Five cases only could be found in medical literature, all of which were fatal. In addition to these he now personally reported five cases, four in patients of his own, and one in the practice of a brother physician. These five cases, as compared to the five previously reported, suggested some interesting conclusions. In the first five cases the mortality was 100 per cent. The cases that he reported included two deaths, but neither of these was due to gangrenous tonsil, which in these cases appeared to be an intercurrent condition, more or less due to the general depression that had rendered them vulnerable to such attacks. In his fourth case only were operative measures indicated. When a small area was involved and the general condition was good, instrumentation was indicated; but in great depression and extensive involvement, two conditions that seemed to be associated, active interference might result unfortunately. Only one of his cases was of interest in connection with pathology, the noma bacillus being present. Unless his experience proved to be unique, it might be assumed that gangrenous tonsils, and the recoveries therefrom, were more observed than the literature suggested.

Thrombophlebitis of Orbits by Ozena Bacillus-Death.—Dr. M. FEINGOLD, New Orleans, Louisiana, said it was freely admitted that many an affection of the eye and the orbit was dependent upon a primary disease of the nose and its adjoining cavities, but certain points needed further discussion. He saw in consultation a girl of fifteen years who had an edema of the upper and lower lid, so extensive that the eye could not be opened voluntarily. There was a hard infiltration through the upper lid to the depth of the orbit. The temperature was about 101 degrees. The patient denied that there had been any previous affection of the nose. An operation was immediately performed, and an extensive focus of sticky, grayish, gelatinous pus was found and evacuated. Necrotic bone was also discovered in the orbit. The patient stood the operation well and spent a comfortable night. The next day, however, pulse and temperature gradually rose and patient complained of pain in the head. Probing revealed no further focus, but the edema on the right side had increased and dilated veins were visible over the forehead and nose. Atrophic retinitis was found in each side, with crusts and pus in the middle meatus, under them. On the following day the Killian operation was performed, and pus was found in the frontal and sphenoidal sinuses. After the operation the patient gradually grew worse and died on the night of the following day. The temperature had reached 106.1 degrees, with profuse perspiration and very labored respiration. The pus was found to contain a pure culture of bacillus mucosus capsulatus. No postmortem was obtained. The interesting points in the case were that a sinus affection might be latent for some length of time, and that orbital affection might be brought about by the affection of the adjoining nasal cavities.

Cesarean Section.—Dr. JOHN M. WILSON, Mobile, Alabama, said the most common indication for cesarean section was a contracted pelvis, but there might be other causes, such as uterine myoma, located at the lower part of the uterus, and ovarian cyst with adhesions, cancerous or undilatable cervix. This operation might be employed in some cases of placenta previa, as well as in some cases of eclampsia with a very rigid cervix. The success of cesarean section depended greatly upon the time when it was performed, the best results being obtained in those cases that could be given the proper preparation and operated on just before or at the beginning of labor. Those cases gave the worst results that had been in labor some time and had had repeated examinations made on them, which were likely to produce, as stated before, an exhausted patient and an infected uterus. Here was seen the importance of the obstetrician making an early diagnosis of any pelvic deformity, or obstruction of any kind that might call for a cesarean section. In this way we would have the chance of properly preparing the patient for a major abdominal operation.

The Early Beginning of Tuberculosis with Especial Reference to Its Confusion with Malaria.—Dr. William Redin Kirk, Hendersonville, North Carolina, said that without attempting to go into physical diagnosis in detail, he would like to call attention to a few points in connection with the recognition of tuberculosis in its early stage. Altered breath sounds were the rule, and not the exception in early cases. Lessened motion of the diaphragm was an early sign; William demonstrated it by the fluoroscope. It was also observed by Litten, whose shadow test was familiar; and Kronig had called attention to the fact that the motion of the lower border of the lung was diminished when the lung was involved to a small degree, and Pottinger claimed that the entire side lagged even in slight involvement of the apex. Exploration of the entire chest was always necessary, but especial care should be used in observing certain areas, the apices, front and back, the first intercostal spaces, the area under the scapula, which was partly uncovered when the hand was placed on the opposite shoulder, the area on each side of the vertebra between the scapula and the lower lobe of the lungs. Rist, in a recent paper, claimed the lower lobe was almost invariably the site of the initial lesion in children, and that the apex was involved secondarily in both children and adults, explaining that cough forced infectious material into the apex. Of the accessory means of diagnosis, he should have only a few words to say. Search for the bacillus should be thorough, and negative cases examined repeatedly, for while finding the bacillus was the only absolute proof, a negative result was not positive evidence of the non-existence of tuberculosis. Too often patients were assured they had tuberculosis upon this evidence alone. The general practitioner was not expected to make use of Arenth's method of differentiation of the nuclei of the neutrophiles, the opsonic index and other more difficult laboratory means of diagnosis, but in all suspected cases he could and should use some of the tuberculin tests, Moro's, Von Pirquet's, or the old method of the subcutaneous injection of Koch's old tuberculin.

The Diagnosis of Plague.—Dr. R. L. Wilson, Charleston, South Carolina, said that in plague work great care should be taken in handling infected animals, tissue, cultures and other material. Even persons accustomed to bacteriological laboratory work had to be reminded of danger, as several laboratory cases of infection were on record. The principal things to look out for were fleas from animals, skin abrasions, soiling of fingers, using of pipettes and smoking. To summarize the principal points in diagnosis. 1. Typical lesions, especially characteristic buboes. 2. Production of the disease in animals by inoculation. 3. The unmistakable presence of the plague bacillus in smears, cultures and in inoculated animals.

Symptoms and Clinical Diagnosis of Bubonic Plague.—Dr. J. Birney Guthrie, New Orleans, Louisiana, stated that the appearance of the patient sick with bubonic plague was somewhat similar to that of one under the influence of alcohol. The face was swollen, the eyes injected. There was a general loss of coordination, staggering gait, thick and stammering speech. This speech disturbance frequently extended into convalescence, and with persistence of lymphatic enlargement and recent scars of suppurating buboes, might furnish the clew to identification of a previously unreported case. The recognition of cases of bubonic plague, where it was known to exist, presented small difficulty to the physician. It was the identification of the first cases, especially if they were of mild type, which would present the severe problem in diagnosis. In a suspicious case careful and continuous observation of the superficial lymphatic glands should be maintained and puncture with the needle and examination of aspirated fluid made by smears and culture methods. Finally, let this be emphasized, the early identification beyond any doubt of bubonic plague depended upon the microscope. It was the duty of the attending physician to submit to the bacteriological laboratory slides made from the fluid aspirated from every suspicious bubo and from sputum in every case of pneumonia showing more than ordinary depression at the outset with a bright red sputum instead of the typical rusty sputum of ordinary pneumonia. The services of the public bacteriologist should be available. Possibly it might be wise to require the specimens to be submitted. The only hope of limiting an outbreak was that of a prompt diagnosis of the disease. To-day every seaport of the world was menaced by plague, and the menace would be still further increased by the opening of the Panama Canal. It therefore became the duty of every one of us who practised medicine in a seaport to keep constantly in mind the possibility of encountering the disease. To this end examination of the superficial lymphatic glands during the progress of every acute febrile case became a matter of necessary routine.

Treatment of the Plague.—Dr. Isaac Ivan Lemann, New Orleans, Louisiana, said unfortunately the story of the plague therapy was brief and discouraging. The mortality rate of those stricken, without previous prophylactic treatment, was still in the neighborhood of 90 per cent. Our chief and first attention must, therefore, in this disease above all others, be given to prophylaxis. Several methods of producing active immunity had been proposed. Haffkine, working in India in 1907, proposed his well-known prophylactic. This consisted of a bouillon culture of the pest bacilli, killed by heat and carbolized so as to represent a 0.5 per cent. solution of phenol. The dose of this varied from 0.5 to 1 c.c., and in special cases as much as 20 c.c. were given, according to Jackson. Llewellys Barker says: "Adult males receive 3 to 3.5 c.c., adult females 2 to 2.5 c.c., children over ten 1 c.c., small children 0.1 to 0.5 c.c. of the prophylactic injected subcutaneously. The reaction varied greatly in different individuals; as a rule, there was slight fever, malaise with local swelling and edema for twenty-four to forty-eight hours. Ten days later, a second, larger dose might be given, the size varying according to the reaction following the first dose." The protection afforded by the prophylactic was not absolute. When repeated several times it afforded a relative immunity for some months. "Four to 20 per cent. of the inoculated contracted the disease and from two to eight per cent. died." Passive immunization by means of sera derived from animals in whom an artificial immunity had been created, had been used prophylactically and therapeutically. The immunity produced by immune sera was said to last but a few days. Aside from the specific treatment the management of a case of plague was entirely symptomatic. Treatment was inaugurated with a brisk calomel purge, followed by a saline. The patient must be, of course, kept in bed in a well-lighted, well-ventilated room. The diet throughout the acute stage should be liquid, principally milk and water, with the addition of alcohol in cases where there was great prostration. Later a soft bland diet was permitted. In convalescence regard must be paid to the probability of change having occurred in heart muscle and in the kidney. The buboes must be dealt with surgically. As to the treatment of pneumonic plague, the authorities contented themselves with the vague suggestion that expectorants might prove useful. They laid much more stress upon the high degree of contagiousness of pneumonic plague and the great care with which these patients and their sputa must be handled in order to prevent the spread of the disease.

Resolutions.—The following resolutions were offered, referred to the Council, reported back to the Association, and adopted:

To President-elect Wilson, asking his support for the bill establishing a Department of Public Health.

To Congress, asking for the creation of a commission for the investigation of malaria, with a view to the recommendation of practical means for the extirpation of this disease.

To the press, asking its aid in the education of the public in matters of hygiene and sanitation.

Against fee-splitting, urging State and county medical societies to oppose the practice and to discipline any of their members who may be guilty of giving or receiving any fee or commission of this kind.

Officers.—The following officers were elected for the ensuing year: *President*, Dr. Frank A. Jones, Memphis, Tennessee; *First Vice-president*, Dr. Stuart McGuire, Richmond, Virginia; *Second Vice-president*, Dr. J. D. Love, Jacksonville, Florida; *Secretary-Treasurer*, Dr. Seale Harris, Mobile, Alabama.

Lexington, Kentucky, was selected as the place for holding the next annual meeting.

THE PRACTITIONERS' SOCIETY OF NEW YORK.

249th Regular Meeting, Held October 11, 1912.

Dr. J. W. Brannan, President, in the Chair.

Heart Murmurs and Patients.—Dr. B. R. Robinson read this paper (see page 1076).

Dr. A. A. Smith said he would gladly indorse a great deal of what Dr. Robinson had said, but he questioned if a patient suffering from organic disease could be protected by being told that he could not hear what his disease was. He quite agreed that the patient should not be told in a brutal way that he had heart disease. Patients had a particular aversion to hearing this. The physician disliked to say it. What should be said to the patient was

a difficult subject. He could not, however, take the broad ground that Dr. Robinson had taken and should answer the question himself in a different way. Serious harm might be done by allowing the patient to remain ignorant of a heart lesion. He would like to ask Dr. Robinson whether he had been able to convince people of his judgment by saying that he would not tell them anything about the diagnosis, and whether he had not left them in more doubt and anxiety by not telling them. If cardiac functions were properly performed the situation could be explained.

Dr. MEARA said he was not depreciating a cardiac murmur, but he would like to inveigh against the amount of importance that was placed upon cardiac murmurs. The importance of physical diagnosis was magnified to a great degree. When a fourth year student was given a cardiac condition for examination he always made a diagnosis in terms of a cardiac murmur and quite forgot the heart in the murmur, and the patient in the heart. The patient at once thought that a cardiac murmur was synonymous with disease. The student exaggerated the murmur and got no idea of cardiac efficiency. The physical signs were considered but rarely the physical efficiency of the heart, and indeed it was relatively a rare thing for even practising physicians to study the efficiency of the heart. Should a patient with a cardiac murmur fall into the hands of insurance companies he would be excluded from the risk because of the murmur, though his heart might be efficient; while another patient would be passed with a marked degree of cardiac deficiency, but no murmur.

Dr. CONNER said he could indorse what Dr. Meara had said as to the exaggerated importance so often given to auscultation in the examination of the heart. It seemed to him that it might have been better for our patients and for ourselves if the stethoscope had never been invented. In regard to Dr. Robinson's remarks as to the undesirability of telling patients of the existence of heart lesions, the only safe rule seemed to him the application of common sense. One patient you could tell, another not. Some patients were better for not knowing. On the other hand, as Dr. Smith said, serious damage could sometimes be prevented by a frank and tactful statement of the matter to the patient.

Dr. BRYANT said that the question seemed one of common sense and not of hard and fast method. Some people you could reason with, some you could not. It was unwise to draw conclusions and lay down rules in advance in matters relating to present and prospective human welfare and comfort. The protection of the patient from himself seemed quite as proper in this contingency as in those related to specific infections and the sequelæ of other human infirmities.

Dr. PARK said that certain people could be told the truth about their hearts without disadvantage.

Dr. ROBINSON said it was within the last few years that he had come to this conclusion. He told the patient, "I will examine you; I will do the best I can for you, but I shall not tell what I find except to your own physician; if my method displeases you, you can go elsewhere." He had seen too many people made unnecessarily unhappy by telling them of heart murmurs. He was indifferent as to what the other man said to his patient. A practical illustration of his procedure was the case of a man who had come to him last spring for examination. He had been told of his heart murmurs and was in pretty wretched condition in mind and body. He told him he would examine him and do the best he could for him, but would not tell him what he found. That man was now in better shape than he had been for a long time. It took weeks and months to find out his exact condition. His heart now functioned all right. It would have been wrong and worthless to tell this patient that he had a murmur. He did not care if the patient had one or not. He meant every word he had said in his paper.

The Sanitary Control of Local Milk Supplies through Local Official Agencies.—Dr. ERNST J. LEDERLE read this paper (see page 1063).

Dr. DANA asked how much it cost per quart to pasteurize milk; if it added to the expense per quart; if it was possible to have central plants for pasteurization, and if the 6,000 grocers still selling milk made a living.

Dr. MEARA asked what Dr. Lederle meant by "farmers complying with 75 per cent of the B. O. H. regulations"; if "vital regulations" had a value that did not permit the farmer to disregard them; if, aside from theoretical considerations, pasteurization of first-class milk produced a cleaner milk and gave a better milk than the original milk complying with 60 per cent of the B. O. H. regulations; if infant's milk, grade A, complied with the tuberculin test; how rigidly the tuberculin test was insisted on; if carrying out the infant's milk supply had not really involved the principle of paternalism; if the Dairy Demonstration Company was a business or philanthropic enterprise; and if cream was richer in bacteria than milk.

Dr. CONNER asked if pasteurization of milk was done in the city, on the farm, or at the creameries; where would be the best place; and what effect pasteurization had upon the bacterial count.

Dr. BRYANT said that in the 70's he was connected with the department of inspection and was often required with others to inspect milk. They had to ascertain its condition with reference to its properties, especially fat content, reaction and cleanliness. The bacterial count, for obvious reasons, never entered into the question. As to the manner in which the inspection was conducted the inspectors would carry round a canton flannel bag in which was a urinometer and a glass milk holder of suitable size. They went to milk stores and inspected dipped milk. The inspectors had to do a definite number of inspections per diem and turn over the results to the Department. In the light of modern methods he could not see that these inspections were of any other use than to provide the inspectors themselves with $100 a month, and the Department with an occasional fine or suit against milk vendors. However, it was the beginning which led to the present advanced state of affairs. The B. O. H. did the very best it knew how at the time. Those who sold milk either did their best, or, as now, tried to deceive the public. Those brought up on the farm could recall how, by the taste and odor of the milk, they could always tell if the cows had been in the pasture or not. He asked if giving the child top milk gave it more bacteria.

Dr. ROBINSON asked Dr. Lederle if pasteurization impaired the nutritive value of milk.

Dr. BRANNAN asked Dr. Lederle what had been the effect in increase in price of milk; he added that the price paid at Bellevue Hospital was now 6 cents per quart. Three or four years ago the price paid ranged from 6¾ to 7 cents, but in 1910 the specifications were changed so as to require only 12 per cent. solids, instead of 12½ per cent., and 3½ per cent. butter fat in place of 4 per cent., and the price since then has ranged from 6 to 6⅛ cents per quart. The loss in butter fat was made up by the addition of cream, when needed, for babies and young children. Up to ten years ago there had been, he thought, no bacterial examination of the milk at Bellevue or in any of the city hospitals. At that time, he thought, at the suggestions of Dr. Park, specifications were prepared limiting the number of bacteria to 50 or 60 thousand per c.c. in the winter and 100 thousand per c.c. during the summer weather. This regulation had prevailed ever since, the B. O. H. making examinations of samples of the milk supplied the various hospitals two or three times a week. It was Dr. Park's idea that our action would help the Department of Health in raising the general standard of milk in the city. The change in percentage of solids and butter fat to which he referred was made under instructions from the Committee on Standardization of the Finance Department, which was endeavoring to standardize the milk and other supplies for all the public institutions of the city. He asked Dr. Lederle what effect, if any, the regulations which he had described had had in increasing the price of milk for general consumption in New York.

Dr. LEDERLE, replying to Dr. Dana, said that most of the dealers had found that they were able to sell the pasteurized milk at the same price as the raw, the commercial advantages secured by pasteurization being sufficient to offset its expense. Central plants for pasteurization would require too many different pieces of apparatus. Milk came into the city at different times. A supply should be pasteurized immediately. Milk coming in at midnight must be pasteurized and sent out early in the morning. The large dealers had been able to raise capital to pasteurize milk, and if some means could be found for the small dealers to do so it would be of great benefit to the city. Municipal pasteurization had been suggested as a solution of the problem, but he was of the opinion that the dealers should do it themselves. In regard to groceries selling milk he said that if there were a smaller number of stores it would be possible for groceries to sell milk at a profit. Most of them sold milk to oblige customers. The smaller stores could sell bottled milk. In the poorer sections the sale of bottled milk was increasing rapidly. If loose milk dealers would pasteurize and bottle milk they could keep the trade.

In reply to Dr. Meara Dr. Lederle said that every item as to equipment and method was clearly specified and a copy of the findings was left with the farmer. He was advised as to the theoretical value of every point. His

dairy was graded, and if his scoring fell below in any point he was advised what he must do to raise it to the average. As soon as he came up to the requirements he obtained a permit. Creamery inspection was not a difficult thing to regulate from the city. The proper inspection of 45,000 farms, however, was almost impossible. It was thought at first that with farm inspection the milk regulations could be carried out, but the greater the experience the more doubtful this became; that was the cause of the desire of the B. O. H. to introduce general pasteurization. Even after that was accomplished they felt that they must still further insist on a cleaner milk supply. Proper pasteurization produced a cleaner milk, provided that the milk was not reinfected in the handling. Ideal pasteurization, however, would be in the bottle, and it was hoped that it would eventually be done that way. Raw milk classified under grade A complied with the tuberculin test. In the case of pasteurized milk it was not required. The amount of grade A milk coming under the tuberculin test requirement was comparatively small and was almost all certified and guaranteed. At present certified milk came from farms certified by the Milk Commission of the County Medical Society. Personally he believed in the necessity of *all* grade B milk being pasteurized.

The infant's milk supply did involve the question of paternalism at the start. They were really carrying out a great object lesson. Milk stations were the centers of education for mothers. Eventually he hoped that the grade of milk sold there would be generally sold throughout the city and that the stations would become purely educational centers. Here the element of price came in. Last year the milk stations sold milk for 7 cents a quart, which was probably no higher than the cost of production. This was made possible by the generosity of one of the dealers in the city. The following year dealers refused to bid and the Dairy Demonstration Company received the contract. They were trying to demonstrate that a safe, clean milk could be produced without large increase in cost. This milk was sold for very little more than ordinary milk. They were now selling milk in our stations for 8 cents a quart. The Dairy Demonstration Company was part of the work of the New York Milk Committee.

Replying to Dr. Conner Dr. Lederle said that some of the pasteurization was done in the country at the creameries; that theoretically the better time was before it left the farm, but there were many practical difficulties in the way of that. It required considerable skilled labor. The process was easier to control in the city. Pasteurization was not total sterilization, but Dr. Park told him that under the conditions of pasteurization which the B. O. H. required there was practical elimination of bacterial organisms. This required skillful management, and that brought up the question of requiring a definite bacterial standard. Pasteurization depended very much upon machinery. The whole subject of pasteurization upon a large scale was a new one. They had hesitated to make legal bacterial standards. If the bacterial content of grade B was too high the dealers received a warning.

In reply to Dr. Robinson Dr. Lederle said that he thought that the feeling that harm was done by pasteurization was dying out. The ill effects supposed to be due to pasteurization were really caused by sterilization. Sterilization had been practised abroad for a great many years. Many cases cited of infants having been harmed by pasteurized milk had, in fact, used sterilized milk. He said it was not so very long ago that the milk sold in hotels and restaurants and that used in hospitals was considered the poorest on the market, but a great improvement had taken place. More attention was now paid to hospital milk, and hotels and restaurants were now required to have a permit from the Department of Health which allowed the sale of grade A or B only in these places. Only last week he had addressed a meeting of the Association of International Hotel Stewards to explain the milk regulations, the system of grading and the best methods of keeping milk. Replying to Dr. Brannan, Dr. Lederle said that the increase in price had not been more than the natural increase in price as with other commodities. The increase could not be traced to the efforts of the Health Department to obtain clean milk.

Dr. Lederle said that the question of regulations for cream was not yet settled. The Health Department had intended to include cream with milk in the grading plan, but finally decided that milk was such an enormous problem that they would try to put that on a solid basis before going further with the cream regulations. A great deal of pasteurized cream came to the city. From the public health standpoint as stringent regulations should be made in the case of cream as in the case of milk. The flavor of cream depended on conditions of the green fodder. When cows were out to pasture in spring many weeds were in the grass that affected the flavor of the cream and lowered its value. Pasteurization tended to eliminate these flavors. From a commercial standpoint pasteurization of cream was an advantage. Such cream kept much better. It would interest the Society to know that cream for use on the 4th of July was gathered as early as March or April. Cream should be pasteurized. It was inconsistent to have milk pasteurized and not cream. Now that grade C milk had been degraded it would be used for making cream. Cream used for ice cream should also be pasteurized, as freezing was not a safeguard. There was a special grade of butter made from pasteurized milk called nursery butter. Another problem was the use of skim milk. The Board of Health did not permit the sale of skim milk in the city, even if so labeled. There was no other place in the world where this was done. Because of this restriction the commercial use of skim milk was for making a glue substitute. The casein was used and the whey was used in the preparation of milk sugar. A valuable food product had thus been diverted to other uses and that helped to keep up the price of milk. Some time he was sure the value of skim milk would be recognized in this city and it would be largely used.

Dr. Park said that he and Dr. Lederle were so closely connected that they had much the same point of view. It was in 1901 that this certified milk movement was begun. It was thought that the city should have a certified milk taken care of by the Health Department laboratories. Up to that time they thought that they could have the dealers place on their milk "certified milk" and "inspected milk," but the inspected milk never took. People asked, "What is the other milk you are selling?" Competitors would say, "Our milk is as good as yours," and people were not interested enough to find out the difference between inspected and certified labels. Inspected milk has been on the market since 1902 and is used by diet kitchens, hospitals, etc. Dr. Lederle took up this question to force the dealers to put on true labels. It was found that better class dealers wished to get a good clean milk. There had been tremendous pressure that Dr. Lederle had had to fight against to get this labeling done. The difficulty was to see if the labeling was true. Men would have all sorts of schemes to make their labels look right. This question was, however, up to the people as well. The Health Department would have done their share of the work if the people were able to know what they were buying. This was one of the greatest steps in advance if the public could be sure of what they were getting. As to pasteurization, besides the question of convenience to the city, he thought it was better to have one million dead bacteria than five thousand live ones. Even if the milk was shipped through thoroughly iced the city was the best place to urge for pasteurization. He said that pasteurization caused less change in milk than did sterilization. It was not so much sterilizing milk but keeping it after it had been sterilized that did the harm. An Englishwoman, Dr. Claypon, working here under the direction of the London County Council, had come to the conclusion, the more she studied this question in London and Paris, that no harm had come from the use of boiled milk. The Rockefeller Institute and the Good Samaritan Home used boiled milk and the results seemed just as good as with raw milk. Replying to Dr. Brannan he said that pasteurized milk would never catch up with raw milk in bacterial count. Bacteria occurred in any milk, pasteurized or raw, but pasteurization could bring 100,000 count down to 3,000. If the milk was not properly iced bacteria would occur, but 1,000,000 would come down to 30,000 or 40,000 under pasteurization and it would be delivered under 100,000. Replying to Dr. Meara he said that cream had as many bacteria as all the rest of the milk put together. In reply to Dr. Bryant he said the top milk gave a child more bacteria, but unless they were harmful bacteria there would be no harm done.

THE PHILADELPHIA PEDIATRIC SOCIETY

Stated Meeting, Held November 12, 1912.

THE PRESIDENT, DR. THEODORE LE BOUTILLIER, IN THE CHAIR.

THIS was a joint meeting of the Philadelphia Pediatric Society with the New England Pediatric Society, the Section of Pediatrics of the New York Academy of Medicine, and the New Jersey Pediatric Society. The meeting was held in Thomson Hall, College of Physicians, and was largely attended.

The Treatment of Hemorrhagic Disease of the New-

born.—Dr. Beth Vincent of Boston read this paper. He stated that but little progress had been made with the problem of the etiology and treatment of hemorrhagic diseases of the new-born during the past year. The use of serum therapy seemed to mark a distinct advance in the treatment of this condition. This treatment had been applied in the form of blood transfusion and by the subcutaneous injection of animal serum, human serum and whole human blood. While the number of reported cases was not large the results showed such a high percentage of recoveries as to justify the assumption that the employment of these various methods was of therapeutic value in this disease. A review of cases showed that in 11 cases treated by transfusion the immediate effect of the procedure was to check the bleeding and correct the anemia. Eight of the eleven cases treated by transfusion were cured. Of the three cases which terminated fatally, one died of diffuse peritonitis which was probably present before the transfusion, the second died of syphilitic infection about one month after the transfusion, and the third was moribund at the time of the transfusion. Four additional cases not treated by transfusion received injections of whole human blood and all terminated fatally, but the fatal result which occurred in all of them could not be taken as evidence that this method was ineffectual, since three of the cases were moribund at the time of the injections and in the other the injections were not repeated as prescribed in this form of treatment. Several cases in this series received animal serum subcutaneously without apparent result and were subsequently cured by transfusion. This agreed with the experience of other observers. While this experience did not justify the statement that animal serum was altogether ineffective, it confirmed the opinion that human blood or its derivatives was more valuable in the treatment of these hemorrhagic diseases. The good results obtained by Schloss, Cominsky and others who had used the human blood serum was sufficient evidence that these measures were effective in checking the disease. If the bleeding in many of these cases of hemorrhagic disease was due to a defect in the infant's blood, which was apparently improved by any of the three methods of treatment, it would seem that transfusion was the ideal method because it restored directly to the infant's circulation all the elements needed for coagulation. In addition, transfusion possessed the advantage of correcting the anemia by replacing the cellular elements which had been lost by hemorrhage. Transfusion was the only method from which results could be expected in the severe types of the disease in which the patients had been exsanguinated by continuous profuse bleeding. The uniform success which had attended the injection of whole human blood, blood serum, and the transfusion of blood would lead one to believe that the best line of treatment to pursue in these cases was a rational combination of all three methods. In cases in which the bleeding was rapid and profuse and which were usually quickly fatal an immediate transfusion was indicated. Where the disease began with trivial hemorrhage and was seen early, the easier and more simple methods of blood or serum injections were in order. Assuming that these two methods gave equally good results, it would be advisable to make the first injection of whole blood to save delay and at the same time to collect enough blood to furnish serum for further treatment. This treatment should be continued if the bleeding stopped or seemed to be diminished and the infant's condition remained good. Cases which did not follow so favorable a course, or were not seen until the patient was exsanguinated, were more safely treated by transfusion. When transfusion was once done the case might be left, with the assurance that the infant was in no immediate danger, which was of no small advantage where the case could not be kept under constant observation. There were two forms of hemorrhagic disease in which transfusion or any other method could not always be expected to effect a cure. The first class included those cases in which the underlying cause of the bleeding, as bacterial infection, syphilis, and ulcers of the stomach, or duodenum, was such as to be fatal in itself, while the second form comprised those cases with hemorrhage in the brain, adrenals, kidneys or liver, in which the location and not the extent of the bleeding was the vital factor. With these exceptions their experience seemed to show that by the proper application of one or a combination of the methods under discussion they could cure a large percentage of cases in this hitherto fatal disease.

Pyloric Obstruction, with a Comparative Study of the Normal Stomach of Infants.—Dr. Godfrey R. Pisek and Dr. L. T. LeWald (radiologist), New York City, presented this paper. They stated that their object in presenting the paper was to indicate how we may add, in an efficient manner, to the diagnostic resources already at hand. The controversial theories as to the etiological factor were still unsettled and little had been gained from them in the establishment of a definite form of treatment. By the use of Röntgen rays and bismuth one could determine, by the degree of positiveness, whether a given case should or should not be operated upon. Modern apparatus with the intensifying sheets securing instantaneous exposures made this study possible. The paper was illustrated with numerous lantern slides, showing the stomach and alimentary tract of infants with pyloric obstruction, taken at short intervals, the series in each case being completed at the end of approximately twenty-four hours. Comparative studies were made in a similar manner, using normal infants, breast and artificially fed. It was soon evident that the accepted conception of the shape and activity of the infant stomach needed revision. Heretofore these facts have been obtained mainly at the autopsy table and from the embryologist. The study showed that the normal stomach began to empty itself within a minute or two after the intake of food, and this fact was used to differentiate cases of pyloric obstruction in which the food, in cases of true stenosis, escaped very slowly and through an extremely narrow lumen, while in cases of pylorospasm it took twenty minutes to half an hour before the bismuth food passed into the duodenum. As a result of their findings they prophesied that in the future every suspected case of pyloric obstruction would be subjected to a radiographic study before a plan of treatment was determined upon, just as to-day no surgeon would think of putting up a fracture without the use of the rays.

Dr. Edwin E. Graham of Philadelphia said he was especially interested in the reference to the fact that a small portion of the stomach contents passed into the duodenum within one or two minutes after the bismuth meal had been introduced. He would like to know whether a sufficient number of cases had been examined to decide definitely as to whether this was the invariable rule. Was it possible that in these cases the amount of fluid introduced into the stomach was excessive? If this was the rule the portion so leaving the stomach could scarcely be appreciably affected by any gastric secretion.

Dr. Fritz B. Talbot of Boston said that anything that could assist them in the diagnosis of pyloric stenosis was very important. In some cases it was impossible to get these babies *x*-rayed and in these cases he was accustomed to give the baby subnitrate of bismuth by mouth. Subnitrate of bismuth was a crystallizable substance and if it passed through the intestinal canal could be readily observed microscopically in the stools. Absence of typical bismuth crystals from the stools meant that no food was passing through the pylorus.

Dr. Harry Lowenberg of Philadelphia reported one case of pyloric obstruction in which the bismuth shadow did not show beyond the spinal column. He also showed charts of two cases in which the daily and weekly gain was recorded; these were cases of partial obstruction. A point which he considered important and wished to bring before his audience was the diagnostic and prognostic value of the administration of charcoal. If this substance passed through the prognosis was hopeful, whether there was present a hypertrophy or spasm or a mixed condition. Dr. Lowenberg reported another case of a baby sent to him for pyloric obstruction. The patient had persistent vomiting and obstinate constipation. The *x*-ray was interpreted as demonstrating a large twist in the sigmoid which probably accounted for the constipation. The vomiting was probably reflex. The *x*-ray showed that the bismuth meal passed to the right of the spinal column and appeared within two minutes, showing that there was no pyloric obstruction. The dangers of the stomach tube should be emphasized; in this case he believed that the stomach had been perforated, as he could palpate the end of the catheter in the right iliac fosa, but an *x*-ray picture showed that the tube had pushed the lower border of the stomach down.

Dr. Henry L. Coit of Newark, N. J., spoke of the etiology and prevention of pyloric obstruction and believed that the abuse of the saturated boric acid solution, so generally used for washing out infants' mouths, was sometimes, if not often, to blame for the occurrence of pyloric spasm, stenosis and even gastric ulcer.

Dr. J. Finley Bell of Englewood, N. J., said that he had reported a case in 1889 which had been operated upon successfully. The absence of tumor at the pyloric region did not necessarily indicate that there was no obstruction present.

Dr. Walter Lester Carr of New York said that many of those cases of pouched stomachs in which the peristaltic wave appeared to the left of the median line were found in infants that were artificially fed and could not be classi-

fied as cases of pyloric spasm or pyloric obstruction, although showing a reversed peristaltic wave.

Dr. Godfrey Pisek of New York, in answer to Dr. Graham, said that in the normal stomach the contents invariably began to pass through in a short time within a few minutes from the time of ingestion. In the cases of pyloric tumor the meal remained for some time and this was a very helpful point in diagnosis.

In cases of pyloric obstruction in which there was no tumor felt it might be found that there was no bismuth extruded for a half hour; then suddenly, in pyloric spasm, it would gush through. This aided in making a diagnosis between true tumor and spasm and in making a prognosis as well. If there was a fair amount of bismuth in the small intestine soon after the test meal the prognosis was good. The cases to which Dr. Carr referred were introduced to show an effect produced by the *x*-ray. In artificially fed babies the stomach contents appeared to pass readily through the pylorus. Dr. Talbot's point regarding the use of bismuth subnitrate was very good, but of course this would only show that something could pass through the pylorus.

An Objective Method of Teaching Food Values and Food Requirements.—Dr. Clifford B. Farr of Philadelphia read this paper, presented lantern slides, and demonstrated his exhibit. He said that in teaching the principles of dietetics to the medical students, nurses, and to the general public, he made use of charts, graduated cylinders containing colored fluids and permanent specimens of foods preserved in graduated containers. The charts were worded as tersely and emphatically as possible, covering for example, the definition of foods and foodstuffs, the principal foodstuffs and their functions, the principles of the conservation of energy as applied to metabolism, the explanation of the use of the calorie as a unit of food (energy) values, the caloric requirements at various ages with special reference to weight and body surface. Cylinders graduated in cubic centimeters and containing colored fluids, with explanatory labels, were used to show the amounts of the chief foodstuffs (protein, fat, carbohydrate, water, and salts) needed at different ages, the composition of special dietaries and in a somewhat analogous manner, the relative cost of important foods from a caloric point of view. The permanent museum consisted of one hundred or more graduated bottles and jars, each containing a quantity of the food represented sufficient to produce one hundred calories (method of Irving Fisher). These were fully and distinctly labeled and formed into groups as follows: foods rich in protein, foods rich in fat, foods rich in carbohydrates, foods chiefly valuable for the salts contained, percentage mixtures and preparations used in infant feeding, diet for a child after weaning, various forms and preparation of milk (3) of equivalent food value, etc.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON SURGERY.

Stated Meeting, Held November 1, 1912.

Dr. Lucius W. Hotchkiss in the Chair.

Hypernephroma of the Kidney.—Dr. Charles Goodman reported this case. The patient was a man, forty-two years of age, admitted to Beth Israel Hospital on June 20, 1912, with a diagnosis of calculus of the right ureter; he gave a history of having had typhoid fever twenty-two years ago, and had been troubled with constipation for a number of years. He denied ever having had any venereal trouble. Six weeks previous to his admission to the hospital he had frequent micturition with bloody urine for three days; five weeks later he had a similar attack accompanied with pain in his right side. The day before admission he again suffered pain in the right flank, was nauseated, vomited several times, felt chilly, and again passed some blood-tinged urine. He had also some discomfort in the left testicle for about two weeks. Upon admission to the hospital, with the exception of some tenderness over the right flank, an enlarged spleen, and a slightly enlarged left epididymus, the physical examination was negative. He had a temperature of 99.4° F. and a pulse that varied from 80 to 100. There was a slight trace of albumin in the urine, some red and white cells, but no tubercle bacilli. The blood examination showed a white count of 9,800 leucocytes with 77 per cent. polynuclears. On June 25 cystoscopy revealed nothing abnormal about the bladder. He catheterized the ureters and injected .006 ings. of phenolsulphonephthalein into the muscles of the loin and made the following observations: During the first hour several c.c. of urine were obtained from the right catheter which microscopically showed a few red blood cells. There was a positive guaiac test. From the left catheter only a few drops of clear fluid were obtained, which showed nothing microscopically and which was also negative to the guaiac test. The fluid obtained from the right catheter showed a calorimeter estimation of 55 per cent. of phenolsulphonephthalein (equal to the normal output in the one hour of two kidneys). The fluid from the left catheter showed no phenolsulphonephthalein reaction whatever. On July 3 the ureters were again catheterized and practically the same results were obtained as on the previous examination with the exception of a slight diminution of the output from the right kidney. Several radiographic plates made of the case failed to show the presence of calculus anywhere in the urinary tract, and, although the patient was relieved of pain by his rest in bed, and his urine upon chemical and microscopical examination was now negative, he was induced on account of the phenolsulphonephthalein findings to explore the left kidney, in spite of the fact that the subjective symptoms were referable to the right side. On July 3 he explored the left kidney through a left lumbar incision and found it very much enlarged, hardened throughout the greater part, and firmly adherent to the vault of the diaphragm and spleen. In attempting to separate the tumor from the surrounding structures some large tortuous veins were injured producing a profuse hemorrhage, and in order to facilitate the delivery of the tumor he converted his incision into a "T" incision and made a rapid resection of the twelfth rib. The pedicle, which was found to be very short, was ligated and the kidney and tumor removed. The tumor showed that the function of the kidney was almost completely destroyed by the hypernephroma. Three weeks later an irregular temperature occurred (from 102° to 104° F. in the evening) and pain was complained of in the right upper quadrant of the abdomen. The blood culture was negative, the Widal test was negative, and the examination of the urine showed only a few red and white blood cells. Under local anesthesia he made an incision through the upper portion of the right rectus muscle and with the aid of nitrous oxide made an exploration. The right kidney on palpation appeared to be enlarged; otherwise nothing abnormal was noted and the wound was immediately closed. Strange to say, the day subsequent to the operation the temperature dropped to normal and two weeks later the patient was discharged from the hospital. Dr. Goodman saw this patient a few days ago and found him feeling well and able to work at his trade. The phenolsulphonephthalein injection made its appearance at the end of 11 minutes, with 50 per cent. output the first hour, 20 per cent. in the second hour, a total of 70 per cent., which showed that the functional activity of the right (compensatory) kidney equaled that of two normal kidneys. The urine upon a most careful examination of a centrifuged specimen was found to be negative.

This case emphasized the value of ureteral catheterization, and particularly the value of phenolsulphonephthalein in determining in cases of this kind the advisability of operative procedures. The results obtained showed that the right kidney was performing the function of two kidneys, while the left had no functional activity at all. Had he been guided entirely by the history of this case and the subjective findings he would have been led to operate upon the right side rather than the left.

Dr. Otto Kiliani asked Dr. Goldman what were the indications for operation, and whether *x*-ray photographs and other methods of diagnosis were used. It struck him as being rather strange that a tumor of the size presented could not have been easily and readily felt.

Dr. Goodman, in answer to Dr. Kiliani's remarks, said that he thought that he was dealing with an enlarged spleen, the symptoms referable to the right side misleading him. He recalled an instance that happened some years ago in his practice; a woman was admitted to the hospital with the diagnosis of appendicitis and with symptoms referable to the kidney. The radiograph showed a calculus in the right ureter and several large calculi in the parenchyma of the left kidney. The injections of phenolsulphonephthalein showed that the left kidney was only functionating about one-half of what the normal kidney should and that the right kidney was not functionating at all. He exposed the right ureter and removed the calculus that was causing the obstruction. The kidney was very much distended and contained purulent urine. He, therefore, did a nephrotomy. The result was that the function of the remaining kidney was restored to normal. On the second day after the operation an injection of phenolsulphonephthalein was given and it was followed by a large return. The right kidney within

six weeks appeared to be perfectly normal. Three weeks after the right ureterotomy and nephrotomy he operated upon the left kidney and removed three large calculi buried in its parenchyma so that the greater portion of that organ was destroyed. Had he been led to operate upon this kidney first instead of restoring the function of the right the patient could not, in his opinion, have survived. The use of this drug was very helpful in determining whether or not the kidney was doing the work that it was called upon to do.

Reversal of Circulation by Arteriovenous Anastomosis of Femoral Vessels.—Dr. CHARLES GOODMAN presented this case. The patient was thirty-five years of age, a storekeeper, and had had excruciating pain and an impending gangrene of the leg, for which amputation had been advised. He had had similar trouble with the right foot three years previously for which an amputation below the knee had been done. The history of his present trouble extended back a year, during which time he had suffered acute pain, particularly at night, and in spite of large doses of anodynes and hypnotics he had obtained very little sleep. About six months ago an ulcer appeared on the tip of the great toe; the toe became very much swollen, and the entire tip appeared gangrenous. Shortly afterwards an ulcer appeared on the shin. These ulcers refused to heal. He gave the history of cigarette smoking so common to this class of patients. Elevation of the limb was immediately followed by blanching of the foot, and when the limb was suspended it would become very red and mottled. Pulsation could not be felt below Scarpa's triangle in either the popliteal, tibial, or dorsalis pedis; there was no edema. The urine was negative, and also the Wassermann test. The radiograph did not reveal a calcareous condition of the vessels. It was decided to give the patient the benefit of a conservative operation. He was admitted to Beth Israel Hospital on July 12 and five days afterwards was operated upon. The femoral vessels were exposed at the lower angle of Scarpa's triangle, and the femoral artery and vein severed about 1 centimeter, respectively, above and below the point of anastomosis. The proximal end of the femoral artery was then anastomosed to the distal end of the femoral vein, with a continuous circular Carrel suture; the free ends of the vessels were ligated. After the anastomosis was completed and serrefines removed, the vein became distended and could be seen pulsating synchronously with the heart beat. The wound was closed with catgut for the deeper cutures and silkworm gut for the skin. A long splint was applied. During the first twenty-four hours after the operation the temperature was 100° F. and the pulse varied from 80 to 100. The second day after the operation the patient said he was more comfortable than he had been for a year. On the fourth day the dressings were opened, and to their satisfaction they found that the ulcer on the shin had taken on a healthy appearance and was healing. At the end of ten days this ulcer which had resisted all forms of treatment had become completely cicatrized. The swelling of the great toe was diminished and it had taken on a more healthy appearance. Two weeks after the operation a slight edema was present and the limb became mottled in appearance. On August 10, nearly three weeks after the operation, it was found that the operative wound, which had only apparently healed by primary union, showed evidence of fluctuation, and the introduction of scissors was followed by a gush of clear serous fluid, which must have caused pressure on the vessels, for after it was evacuated the edema disappeared and the toe began to heal. The toe was now almost healed and the patient was able to get about without discomfort, and to sleep without anodynes or hypnotics. For the last three weeks he had been getting light massage and an emolient ointment to the toe. There was a distinct thrill and bruit heard over the area of the anastomosis. It was fair to presume that in this case the relief of the pain and the healing of the wounds which had resisted all other forms of treatment were evidences that the circulation was reversed by the anastomosis and that the general trophic condition of the limb was improved. The possibility of the reversal of the circulation had been questioned by such men as Gallois, Pinatello, Coenen, and Hauke. They based their contention on experiments performed on the cadaver. Dr. Carrel and Dr. Guthrie, on the other hand, had shown that in an end-to-end anastomosis of the femoral vessels in a dog the resistance offered by the valves was overcome and the circulation reversed in the course of three hours. The results obtained in a living human being spoke louder than the results of any number of experiments on the cadaver. The following points in the technique might be emphasized: 1. The operation should only be undertaken in carefully selected cases, and under absolute asepsis. 2. The wound in the vessels should be clean-cut and freed from adventitia. 3. The edges of the wound should be approximated without tension. 4. The vessels must be very delicately handled and this was only acquired by plenty of previous experimental work on animals and with the cooperation of a well-trained assistant. Dr. Goodman said that in his twenty years' experience in Beth Israel Hospital, Mount Sinai, and the Montefiore Home he had come in contact with almost every case of this kind in the city at one time or another. He had seen every therapeutic means imaginable used, and yet every one of these cases would sooner or later come to an amputation of either one or both limbs. This seemed to be the experience of every surgeon who had had the treatment of this class of patients.

Dr. RICHARD LEWISOHN said that he had watched this case presented by Dr. Goodman with a great deal of interest, having observed the case for many weeks after operation. He could not agree with Dr. Goodman in all that he said, although he thought that the report of this case was a very important and instructive one. When Dr. Lewisohn saw the patient on August 1 (one week after operation) the limb was still blue and there was no pulsation in the popliteal or dorsalis pedis vessels. This blue condition, together with excruciating pains, persisted until the end of August. The pains were of such severity that the question of amputation arose, and he was very glad that this was not done. The result obtained by Dr. Goodman he considered very good, indeed. There was one point which he considered to be of great interest and importance—in looking up the history he found that the femoral vein was clotted, at least two-thirds of it being taken up by a clot. He doubted whether the operation performed cured the man. There had been employed a conservative treatment for at least four months.

Dr. WILLY MEYER said that they had all seen patients with sometimes one side and sometimes both sides afflicted and there was the persistent excruciating pain day and night. In cases of diabetic gangrene not infrequently it was possible to preserve the foot and leg by exposure to hot air. A number of cases had been reported by men abroad where excellent results were obtained from this same operation. Dr. Meyer believed that the man had been much benefited by the operation, more so than he would have been from any other known procedure. He believed that by means of this anastomosis the patient had been cured. In his hospital service he would not hesitate to have recourse to this nice and impressive operation.

Dr. LUCIUS W. HOTCHKISS said that he had seen many of these cases and had himself amputated several extremities. In one case a study of the amputated leg showed an advanced neuritis as well as the vascular lesion, and there was such a terrific amount of pain that amputation was gladly accepted. He said he was much impressed with the operation done by Dr. Goodman and with his results. Many cases were met with at Bellevue Hospital, all Russian Jews, and were very hard to deal with.

Dr. COHN asked if anything had been done to determine the patency of the vein. In the cases with which he had dealt and where amputation was done changes were found in the veins as well as in the arteries. In the veins there occurred a thrombophlebitis.

Dr. KILIANI asked what good, assuming that the vein was occluded two-thirds, would result by anastomosing the artery and vein when the blood would not pass through.

Dr. LEWISOHN called attention to a case that had been reported by Davis in which there was a distinct pulsation in the popliteal vein.

Dr. WILLIAM HENRY LUCKETT said he failed to see why the blood flow was reversed for he did not believe it could be reversed all the way. Again, he could not see what the influence of cigarettes had on the production of this condition. Vaseline could be introduced into the tissues without any serious effect, or serous exudate being produced.

Dr. GOODMAN closed the discussion. He said the pathologists told them that, in these instances, the arteries were first involved and later the veins. When he severed the vein he found in front a large valve complicating the operation more or less. He cut off a little less than 0.5 cm. of tissue, which the pathologist reported to be a thickening of the wall of the vein. No clot was removed. With regard to the circulation, Dr. Goodman said he would not attempt to state with any positiveness what took place when the femoral vein and artery were severed and united. However, if this was done, why should the limb be alive to-day? In this patient all forms of therapy had been employed and without any relief; after the failure of medicines, a surgical procedure was employed and to-day the man felt very comfortable. With regard to injections of vaseline, sometimes this would cause trouble in spite of statements to the contrary. As to the reversion of the circulation, having no pulse below Scarpa's triangle, how else

could he get circulation without doing what he did? There was no possible collateral circulation because the arteries had become obliterated. During the nineteen years that he had come in contact with these cases he had tried every known form of therapy that had been suggested. He had kept these patients in bed; he had tried the use of hot air, he had tried various other methods, but none were of avail. Every case ultimately came to amputation. This patient he did not present as a cured case. However, it had been four months since the operation and the wounds had healed and the man was without pain.

Angulation of the Junction of the Hepatic and Common Ducts After Cholecystostomy, Simulating Common Duct Obstruction.—Dr. De Witt Stetten presented this case. The patient was nineteen years of age, married, and had a child five months of age. For two months previous to her admission to the German Hospital on July 20 she had had frequent attacks of cramp-like pain in the right hypochondrium radiating to both sides and to the right scapula. The severe attacks were accompanied with nausea and vomiting. She had lost considerable weight during the past three months; her appetite was poor and bowels constipated. Examination showed great tenderness and some rigidity of the right hypochondriac region. There was a slight subicteric line to the conjunctiva. The temperature was 100.2° F., pulse 84, and respiration 20. The diagnosis was subsiding cholecystitis and cholelithiasis. On July 24 an incision was made through the rectus muscle. The gall-bladder was slightly congested, but not thickened. It was opened and found to contain three stones, which were removed. The ducts were carefully palpated and found empty. An attempt to bougie the choledochus was unsuccessful. As the gall-bladder was not much diseased a cholecystostomy was done by inverting the opened fundus of the gall-bladder over a drainage tube by means of a Lambert pursestring suture. The gall-bladder was then fixed to the abdominal wall by several sutures. Gauze drainage was inserted below the gall-bladder. On August 1 the tube was removed and the bile drainage stopped promptly. There was a mucopurulent discharge. From August 9 to 16 the patient had attacks of colicky pain and became slightly jaundiced. On August 17, the gall-bladder was reopened and a profuse biliary discharge was found. This continued together with clay-colored stools, and a diagnosis of common duct stone was made. On August 24, the old wound was reopened and the contracted gall-bladder freed down to the cystic duct. There were no stones in the gall-bladder or ducts. The gall-bladder was removed and then the kinking of the hepatic choledochus angle was found. Through the stump of the cystic duct there was a split into the hepatic and common ducts. A probe could easily be passed into the duodenum. The hepatic ducts were probed and found to be free. A tube was inserted into the hepatic duct for drainage. Gauze drains were placed to the ducts, the wound closed, and the angulation of the junction of the hepatic and common ducts was dilated and also the hepatic duct. There was some reaction after the operation, which was followed by a prompt recovery. There was poor drainage through the tube, but the dressings were saturated with bile. On August 30, the tube and drainage were removed, the stools were well-colored, and the wound was healing well. The wound was closed by September 17 and on September 28 the patient was discharged cured.

Dr. Hermann Fischer reported the case of a woman who came into the German Hospital with an acute cholecystitis with an empyema of the gall-bladder due to biliary calculi. As the patient was old and rather decrepit a cholecystotomy was done with removal of the stones. The patient made a good operative recovery, but the biliary fistula did not heal, and acholic stools persisted. She also complained of pain. It was thought that a stone in the common duct was responsible for the condition. On performing laparotomy again it was found that the common duct did not contain stones, but a kink was found in the common duct, a condition almost identical with that described by Dr. Stetten. Although her condition seemed to be a rare one, one must be on the lookout for it.

At a meeting of the New York Surgical Society last spring a case was shown of rapid recurrence after interscapulo-thoracic amputation for sarcoma, and in the discussion it was stated that practically every case of interscapulo-thoracic amputation for sarcoma showed a recurrence or metastasis within one or two years. Dr. Douglas therefore wished to report this case as one free from recurrence of the sarcoma for six years, the patient dying as a result of operation for carcinoma of the stomach.

Dr. Lucius W. Hotchkiss believed that in these cases it was unnecessary to attach the gall-bladder to the parietal peritoneum. He spoke of one case in which he thought he had to deal with a kidney stone, which a radiograph clearly showed. He opened the pelvis of the kidney and found nothing there, and had then opened the gall-bladder through the same incision and there he found a stone. In this case as there was practically a normal gall-bladder, after removing the stone he had closed the incision and dropped it back into place.

Dr. Stetten closed the discussion and added that he did not lower the operating table because it never occurred to him that in this case there could be any question of tension on the gall-bladder and ducts. As to using the tube method and dropping the gall-bladder back into the abdominal cavity, he did not think that this was a method of choice, as there might be leakage and the possibility of contraction, though much diminished, was by no means entirely absent. He understood, however, that the Mayos used this method and were satisfied with it. He had always felt that stitching the gall-bladder to the parietal peritoneum was considered the most approved method of performing cholecystostomy.

Sarcoma of the Shoulder.—Dr. Otto Kiliani presented this case. The patient was a woman, thirty-one years of age, who was admitted to the German Hospital and Dispensary September 10, 1912. Her chief complaint was a painful discharging growth on the right shoulder with lumps in the arm-pit. Her present illness commenced five years ago with swelling at the junction of the right arm and shoulder. It was not painful, tender, or inflamed. After three months she went to Mount Sinai Hospital, where the tumor was removed. Here she received *x*-ray treatment, during which she sustained a slight burn. After three years there was a recurrence in the same place. She went to Bellevue, where this tumor was removed. She was then free for a year, when ten or twelve months ago a mass appeared in the axilla. About three months ago an open wound appeared over the tumor in the same location as the former *x*-ray burn. Communication with Mount Sinai Hospital elicited the fact that in June, 1908, an osteosarcoma of the right subdeltoid bursa was removed and that the patient left the hospital in a relieved condition. Physical examination was negative except for signs of a thickened pleura at the right base. Local examination showed at the base of the right shoulder a cauliflower-like mass about 4 cm. in diameter and raised about 3 cm. The surface of the growth was ulcerated and discharging. The entire axilla was filled with a large soft mass, hot and non-fluctuating. Just above this a smaller mass was continuous with it. Over the insertion of the short head of the biceps was another mass about the size of a hen's egg and slightly tender. All of these masses were slightly reddened and the surrounding tissues somewhat indurated. The upper end of the humerus was felt to enlarge gradually towards the head and was slightly tender on pressure. The spine of the scapula was also made out and found to be thickened. The diagnosis was osteosarcoma of the humerus and scapular with axillary metastases. At the operation on September 16, 1912, an incision was made along the clavicle and continued in front and behind the shoulder to a point in mid-axillary line about the level of the eleventh rib. The clavicle was divided at the junction of the inner and middle thirds and turned out. The axillary vessels were ligated and cut. The brachial plexus was injected with a 2 per cent. solution of novocaine and suprarenin and severed. The pectorals were cut away. A small extension of sarcomatous tissue was found in the pectoralis major. The muscles of the back were cut and the arm scapular and clavicle were removed *in toto* with the tumor. The skin was closed with silkworm gut, no plastic being necessary. The operation lasted one hour and ten minutes. The convalescence was uneventful except for slight temperature for about eight days, at no time going above 102.2° F. The pathologist's report showed that the growth was a spindle-celled sarcoma of the shoulder. The specimen consisted of a right arm amputated between the scapula and the thorax. In the upper extremity occupying the muscle and the greater part of the axilla the limb was much enlarged by a nodular growth which everywhere was covered by skin except at one place over the apex of the shoulder where it was ulcerated and protruded as a blackened polypoid mass. The parenchyma of the tumor was soft and crumbling; it appeared to infiltrate the fascial planes diffusely, rendering dissection of the parts impossible. The cancellous portion of the humerus, corresponding to the greater and lesser tuberosity was almost entirely eaten away, there remaining only a shell of bone on the outside. The spine of the scapula was also extensively eroded. The microscopical examination showed a small spindle-celled sarcoma. The cells were closely crowded together and separated by a minimum

amount of granular and, in some places, fibrillar intercellular substance. The nuclei were dense and chromatic and the cytoplasm scanty. Scattered throughout the tumor were found hemorrhages and diffuse areas of degeneration and edema.

Dr. CHARLES GOODMAN said that four years ago he presented a similar case in which he had obtained a brilliant cosmetic effect. Unfortunately at the end of eleven months the patient developed sarcoma of the lung and died four or five weeks later. Up to that time the patient had done very well, and had had an artificial limb applied. It had been his experience that sarcoma of the long bones, when operated upon, was almost invariably followed by sarcoma of the lung or some other viscus within a year after the amputation.

Dr. JOHN DOUGLAS said that he had reported a similar case five or six years ago and practically the same operation as performed by Dr. Kiliani was done. The patient had a sarcoma of the scapula. Two years after the operation there appeared a lump under the clavicle, a neurofibroma of the brachial plexus, which was removed. Two years later, four years after the original operation and amputation, the patient had an alcoholic gastritis which was followed by the vomiting of much blood. Last spring he returned, giving a history of having had occasional vomiting and difficulty in taking large quantities of food. The examination by means of the *x*-ray showed an hourglass stomach. At operation there was found a large, very hard callus on the posterior wall and lesser curvature of the stomach, the result of an ulcer. This was adherent to the pancreas and to practically all the tissues about this organ. The ulcer, which was believed to be malignant, was resected with a good part of the stomach; this called for quite an extensive operation as a result of which the patient died three days later. The pathologist reported that what was removed was a carcinoma. Six years later the patient died of a recurring sarcoma.

Dr. WILLY MEYER said that the case reported by Dr. Stetten was a very important one. In order to avoid such kinks it seemed avisable always to have the patient placed flat on the operating table again by lowering the lifter before stitching the gall-bladder to the abdominal wall. If it proved too small and short and ectomy was not indicated Gopper's inverting method around the tube was preferable. He always adhered to this method. If the gall-bladder walls appeared normal the ideal cholecystotomy was a commendable procedure. He had done this immediate closure of the gall-bladder by suture after the removal of the stones in three cases and had been very well satisfied with the result.

Dr. W. H. STEWART said that he made a diagnosis of osteosarcoma in the case presented.

Dr. KILIANI believed that he had obtained very good results in his case and that they should always have in mind the possibility of a recurrence of the sarcoma in the lungs.

Demonstration of Methods in the Treatment of Simple and Complicated Fractures of the Jaw.—Dr. H. J. KAUFFER presented eight cases of fracture of the jaw, demonstrating the methods of treatment with splints on plaster casts and lantern slides showing *x*-rays and photographs of the patients. The interdental cap splints exhibited were worn in all cases where the fracture was in the mandible forward of the last remaining sound tooth in the lower jaw. Where the fracture was in the body of the bone, distal to the last remaining tooth, in the ramus or condyle, and immobilization of the temporomaxillary articulation became necessary, inter-wiring or intra-wiring according to the essayist's method was employed.

CASE I.—This patient was a male, 24 years of age, who had suffered a gunshot wound. The bullet entered in the region of the temporomalar canal on the right side, passed through the superior maxilla, and out through the left cheek at a place that could be described by a circle, the diameter extending from the distal border of the cuspid tooth to the maxillary tuberosity. *X*-ray plates showed that the bullet, being one of large caliber, mushroomed out as it passed through and deposited numerous splinters of lead throughout the entire tract, carried away about two-thirds of the superior maxilla, and destroyed more than half of the roof of the mouth. A plastic operation almost restored the roof of the mouth, and at the same operation all lead was removed, as shown by the *x*-ray plates. Considering that there were no solid bony segments with a fixed facial attachment in the upper jaw to which to fasten a splint, and that the period of cicatrization lasted over three months, the apparatus which he had devised for this case was unique in its simplicity and hygienics; it did not immobilize the temporomaxillary articulation; it held all the fractured segments in their proper anatomical relation, so that when osteogenesis was complete there was no deformity; the contour of the face was normal and there were no appreciable scars. The apparatus also being within the mouth, the patient was able to go about without embarrassment during the period of cicatrization.

CASE II.—This patient was a male, 34 years of age, who had suffered a fracture of the mandible at the symphysis. The *x*-ray showed comminution of the bone at the point of fracture, which necessitated the removal of the bone for the width of and including two incisor teeth. The interdental cap splint used in this case permitted the free use of the jaw and a semi-solid diet. The *x*-ray showed a good line of union, teeth articulating, and contour of the chin normal. The patient presented no facial deformity.

CASE III.—This patient was a girl, 4 years of age, who had sustained a fracture of the mandible. The crepitus was appreciable, but there was no displacement. The *x*-ray showed that the fracture extended through the mental foramen. The periosteum being only slightly torn held the fracture in apposition. No surgical interference was indicated and union took place without splint or bandage. Later the patient presented herself with an induration in the chin. The *x*-ray disclosed that a germ of an incisor tooth which was dislodged at the time of fracture was growing in the soft part of the chin. This case was cited as a curiosity.

CASE IV.—This patient was a boy, 12 years of age, who was run over by an ice wagon and sustained a fracture of the mandible between the cuspid and first bicuspid tooth. The interdental splint was inserted and the *x*-ray showed that good union took place with the teeth in good articulation. Deep laceration severed the malar and infraorbital branches of the temporofacial division of the facial nerve. The ultraviolet ray was employed and nerve anastomosis followed so that the patient now presented a cure.

CASES V, VI, and VII presented fractures of the mandible distal to the last remaining sound tooth. They were treated by wiring sufficient lower teeth to upper ones to secure fixation. Union took place with the teeth in normal articulation and there were no deformities.

CASE VIII.—This patient was a woman, 42 years of age, who had a multiple fracture of the mandible and superior maxilla. In the upper jaw the incisor teeth with a large segment of bone were fractured away from the body of the maxilla. The fractured portion was displaced outward and upward. There were seven fractures in the mandible. The incisor teeth with the alveolar process were torn away from the body of the bone. A fracture extended through the symphysis, there were two distinct fractures in the region of the second molar tooth, and one at the angle on the right side. On the left side there was a fracture through the angle and one which separated the condyle from the ramus. This case was treated by intra-wiring. Only one hole was drilled through the bone. The *x*-ray showed that there were two wire sutures passed through this hole, looped and twisted around the upper and lower teeth in such a manner that all the fractures in the upper and lower jaw were brought into apposition. Union took place without the slightest deformity; all the incisions for wiring were made inside the mouth.

Dr. KAUFFER expressed his appreciation of the *x*-ray work done for him by Dr. W. H. Stewart.

Dr. WILLY MEYER said that he admired Dr. Kauffer's perseverance and ingenuity in the treatment of these cases of simple and complicated fractures of the jaw; much time and much work had been spent by him on the study of these fractures and the result was that the patients had been left in such good condition; in short, the results obtained were fine. In complicated cases the surgeon could make an incision over the edge of the mandible and wire the fragments. Personally he would send these cases hereafter to Dr. Kauffer.

The "Gwathmey-Woolsey" Nitrous-Oxide and Oxygen Apparatus for General Surgical Work.—Dr. J. T. GWATHMAY presented and described this apparatus.

Arthritism and Anaphylaxis.—J. Galup defines arthritism as an anaphylactic diathesis caused by slight repeated intoxications chiefly of alimentary origin. Arthritism may be transmitted in the direct or collateral family line. It includes a large number of morbid phenomena. It manifests itself in definite modes of tissue reaction, such as nervous hyperexcitability, the response occasionally to minimal causes, the paroxysmal character of the attacks, and their interchangeability in the same subject. Other characteristics of this diathesis are the tendencies to congestions and to sclerosis.—*La Presse Médicale*

Books Received.

The MEDICAL RECORD *is pleased to receive all new publications which may be sent to it, and an acknowledgment will promptly be made of their receipt under this heading, but it must be with the distinct understanding that it is under no obligation to notice or review any publication received by it which in the judgment of its editor will not be of interest to its readers.*

MAN'S REDEMPTION OF MAN. By WILLIAM OSLER, 64 pages; cloth; price 50c. net. Paul B. Hoeber, Publisher, New York.

BEITRAGE ZUR KLINIK DER TUBERKULOSE UND SPEZIFISCHEN TUBERKULOSE-FORSCHUNG. By Dr. LUDLOPH BRAUER. Vol. XXIII. No. 1. 199 pages; illustrated; paper; price 6.50 M. Curt Kabitzsch, Publisher, Würzburg.

THE BLOOD. By G. LOVELL GULLAND, M.D., F.R.C.P.E., and ALEXANDER GOODALL, M.D., F.R.C.P.E. 360 pages; illustrated; cloth; price $5.00 net. E. B. Treat & Company, Publishers, New York.

LIFE AND LETTERS OF DR. WILLIAM BEAUMONT. By JESSE S. MYER, A.B., M.D. 317 pages, with 58 illustrations; cloth. C. V. Mosby Company, Publishers, St. Louis.

OBSTETRICS. By J. WHITRIDGE WILLIAMS. Third Edition. 977 pages, with 16 plates and 668 illustrations in the text. D. Appleton & Company, Publishers, New York.

THE PRINCIPLES AND PRACTICE OF MEDICINE. By Sir WILLIAM OSLER, B.T., M.D., F.R.S. Eighth Edition. 1225 pages; illustrated; cloth. D. APPLETON & COMPANY, Publishers, New York.

SURGERY OF THE RECTUM FOR PRACTITIONERS. By Sir FREDERICK WALLIS, M.B., B.C., F.R.C.S. 351 pages; illustrated; cloth; price $5.50. Oxford University Press, Publishers, New York.

CONSUMPTION IN GENERAL PRACTICE. By H. HYSLOP THOMSON, M.D., D.P.H. 335 pages; illustrated; cloth; price $5.50. Oxford University Press, Publishers, New York.

SYMPTOMS AND THEIR INTERPRETATION. By JAMES MACKENZIE, M.D., LL.D. Second Edition. 304 pages; cloth; price $3.00 net. Paul B. Hoeber, Publisher, New York.

DISEASES OF WOMEN. By ARTHUR N. H. LEWERS, M.D., F.R.C.P. Seventh Edition. 540 pages; illustrated; cloth; price $4.00 net. Paul B. Hoeber, Publisher, New York.

KOHLENHYDRATKUREN BEI DIABETES. By Dr. GEORG ROSENFELD. 64 pages; paper. Vol. IV. No. 3. Price 1.80 M. Carl Marhold, Publisher, Halle.

THE CHEMIC PROBLEM IN NUTRITION. By JOHN AULDE, M.D. 410 pages; cloth; illustrated with 4 plates; price $3.00. John M. Aulde, M.D., Publisher, Philadelphia.

INTERNAL SECRETION AND THE DUCTLESS GLANDS. By SWALE VINCENT, M.D. 464 pages; illustrated; cloth; price $3.50 net. Longmans, Green & Company, Publishers, New York.

THE MOSQUITO. ITS RELATION TO DISEASE AND ITS EXTERMINATION. By Alvah H. DOTY, M.D. 79 pages; illustrated; cloth. D. Appleton & Company, Publishers, New York.

CLINICAL BACTERIOLOGY AND HÆMATOLOGY FOR PRACTITIONERS. By W. D'ESTE EMERY, M.D., B.Sc. Fourth Edition. 274 pages; illustrated; cloth. P. Blakiston's Son & Co., Publishers, Philadelphia.

A CLINICAL MANUAL OF THE MALFORMATIONS AND CONGENITAL DISEASES OF THE FŒTUS. By Prof. Dr. R. BIRNBAUM. Translated by G. BLACKER, M.D., B.S., F.R.C.P., F.R.C.S. 379 pages, with 58 illustrations in the text and 8 plates; cloth. P. Blakiston's Son & Co., Publishers, Philadelphia.

MORTALITY STATISTICS 1909. 810 pages; cloth. Department of Commerce and Labor. Bureau of the Census, Publishers, Washington.

ATLAS DER OPERATIONEN—ANATOMIE UND OPERATIONEN—PATHOLOGIE DER WEIBLICHEN SEXUALORGANE. By Dr. W. LIEPMANN. 35 plates; cloth; price 24 M. August Hirschwald, Publisher, Berlin.

THE BLOOD OF THE FATHERS. A Play in Four Acts. By G. FRANK LYDSTON. 241 pages; cloth. The Riverton Press, Publishers, Chicago.

A GUIDE TO SOME OF THE HYGIENIC FEATURES OF NEW YORK CITY PREPARED FOR THE XV INTERNATIONAL CONGRESS ON HYGIENE AND DEMOGRAPHY. By CHARLES F. BOLDUAN, M.D. 66 pages; paper. Department of Health of the City of New York, Publishers.

A PRACTICAL TREATISE ON FRACTURES AND DISLOCATIONS. By LEWIS A. STIMSON, B.A., M.D., LL.D. Seventh Edition. 930 pages; illustrated; cloth. Lea & Febiger, Publishers, Philadelphia and New York.

HEALTH AND HAPPINESS. By ELIZA M. MOSHER, M.D. 203 pages; illustrated; cloth; price $1.00 net. Funk & Wagnalls Company, Publishers, New York.

THE PEOPLE'S MEDICAL GUIDE. By JOHN GRIMSHAW, M.D., 839 pages; illustrated; cloth; price $3.00 net. The MacMillan Company, Publishers, New York.

THE CARE OF THE BODY. By R. S. WOODSWORTH. 359 pages; cloth; price $1.50 net. The MacMillan Company, Publishers, New York.

THE HUNTERIAN LECTURES ON COLOR-VISION AND COLOR-BLINDNESS. By Prof. F. W. EDRIDGE-GREEN. 76 pages; illustrated; cloth; price $1.50 net. Paul B. Hoeber, Publisher, New York.

STATE BOARD EXAMINATION QUESTIONS AND ANSWERS. Fourth Edition, 827 pages; cloth; price $3.00 net. William Wood & Company, Publishers, New York.

A MANUAL OF AUSCULTATION AND PERCUSSION. By AUSTIN FLINT, M.D., LL.D. Sixth Edition. Revised and Enlarged by Haven Emerson, A.M., M.D. 361 pages; illustrated; cloth. Lea & Febiger, Publishers, Philadelphia and New York.

INFECTION AND IMMUNITY. By CHARLES E. SIMON, B.A., M.D. 301 pages; illustrated; cloth. Lea & Febiger, Publishers, Philadelphia and New York.

GENERAL CHEMISTRY OF THE ENZYMES. By HANS FULER. Translated by Thomas H. Pope. First Edition. 311 pages; cloth; price $3.00 net. John Wiley & Sons, Publishers, New York.

TEXT-BOOK OF GENERAL AND SPECIAL PATHOLOGY. By HENRY T. BROOKS, M.D. 1127 pages; illustrated; cloth; price $6.00 net. F. A. Davis Company, Publishers, Philadelphia.

NUTRITIONAL PHYSIOLOGY. By PERCY G. STILES. 271 pages, illustrated; cloth, price $1.25 net. W. B. Saunders Company, Publishers, Philadelphia.

PRINCIPLES OF HYGIENE. Fourth Edition. By D. H. BERGEY, M.D. 529 pages; illustrated; cloth; price $3.00 net. W. B. Saunders Company, Publishers.

A TEXT-BOOK OF OBSTETRICS. Seventh Edition. By BARTON COOKE HIRST, M.D. 1013 pages, with 895 illustrations, 53 in color; cloth; price $5.00 net; half morocco, $6.50 net. W. B. Saunders Company, Publishers, Philadelphia.

DISEASES OF THE STOMACH, INTESTINES, AND PANCREAS. By ROBERT COLEMAN KEMP, M.D. Second Edition. 1021 pages, with 388 illustrations; cloth; price $6.50 net; half morocco, $8.00 net. W. B. Saunders Company, Publishers, Philadelphia.

THE PRACTICE OF GYNECOLOGY. Fifth Edition. By W. EASTERLY ASHTON, M.D., LL.D. 1100 pages, with 1050 original line drawings; cloth, price $6.50 net; half morocco, $8.00 net. W. B. Saunders Company, Publishers, Philadelphia.

THE COURSE OF OPERATIVE SURGERY. Second Edition. By Prof. Dr. VICTOR SCHMIEDEN. Translated by Arthur Turnbull, M.B. 345 pages; illustrated; cloth; price $4.00 net. William Wood & Company, Publishers, New York.

NEURASTHENIA SEXUALIS. By BERNARD S. TALMEY, M.D. 196 pages; illustrated; cloth; price $2.00. The Practitioners' Publishing Co., Publishers, New York.

THE SOUL AND SEX IN EDUCATION. By JIRAH D. BUCK, M.D. 175 pages; cloth; price $1.25 net. Stewart & Kidd Company, Publishers, Cincinnati.

SEX EDUCATION. By IRA S. WILE, M.S., M.D. 150 pages; cloth; price $1.00. Duffield & Company, Publishers, New York.

THIRTY-FIFTH ANNUAL REPORT OF THE BOARD OF HEALTH OF THE STATE OF NEW JERSEY 1911 AND REPORT OF THE BUREAU OF VITAL STATISTICS. 678 pages; cloth. State Board of Health, Publishers, Trenton, N. J.

THERAPEUTICS, MATERIA MEDICA AND PHARMACY. By SAMUEL O. L. POTTER, A.M., M.D., M.R.C.P. 956 pages; cloth; price $5.00 net. Twelfth Edition. P. Blakiston's Son & Company, Publishers, Philadelphia.

INTERNAL MEDICINE. By DAVID BOVAIRD, Jr., A.B., M.D. 618 pages, with 109 illustrations in the text and 7 colored plates; cloth; price $5.00. J. B. Lippincott Company, Publishers, Philadelphia.

MAKING GOOD ON PRIVATE DUTY. PRACTICAL HINTS TO GRADUATE NURSES. By HARRIET CAMP LOUNSBERY, R.N. 208 pages; cloth; price $1.00 net. J. B. Lippincott Company, Publishers, Philadelphia.

DER KOHLEHYDRATSTOFFWECHSEL UND DIE INNERE SEKRETION. By Dr. PAUL HOCKENDORF. 120 pages; paper; price 2.40 M. August Hirschwald, Publisher, Berlin.

SELECTED PAPERS ON HYSTERIA AND OTHER PSYCHONEUROSES. By Prof. SIGMUND FREUD. Second Edition. 215 pages; paper; price $2.50. The Journal of Nervous and Mental Disease Publishing Company, Publishers, New York.

Miscellany.

Shakespeare's Allusions to Syphilis.—Sir Henry Morris states that there is ample evidence that during the Tudor and the Stuart and Commonwealth periods of English history syphilis was rampant in England as well as in France and Italy. It is sufficient for proof to quote Shakespeare in regard to the first, and Wiseman in reference to the latter periods. The word pox reminds one of the frequent use Shakespeare made of it. It occurs at least four or five and twenty times collectively, in fifteen of his plays. He used it as a curse, or an imprecation of impatience or evil. Thus, Iago says to Roderigo, who talked of drowning himself: "A pox on drowning thyself." Sir Andrew in "Twelfth Night," referring to a certain knight who was a celebrated fencer, says: "Pox on't, I'll not meddle with him." In "Measure for Measure," Barnardine in his prison exclaims:

"A pox on your throats! Who makes that noise there?"

In "Love's Labor Lost" we find even ladies of quality—ladies in attendance on the Princess of France—making similar exclamations, such as, "A pox of that jest!" In "All's Well That Ends Well" a French lord in a camp near Florence says of a soldier: "Let him fetch off his drum"; and he is answered by another French lord:

"A pox on't, let it go, 'tis but a drum."

In "Two Gentlemen of Verona" the servant of one of the gentlemen says to him of the other: "A pox of your love letters." In "Henry IV," in "Hamlet," in "Cymbeline," in "The Tempest," and other plays there is similar employment of the word, which is equivalent to the "Damn," or "Damn it" of the present day. This use of the word seems to prove conclusively that syphilis was very common in Shakespeare's day, and that the constitutional and local symptoms of the disease must have been quite familiar to the man in the street and to the ordinary person in society. It is quite obvious from the context of several of the passages in which the word occurs that it was the great-pox and not the small-pox which had given it currency and to which allusion was made. For example, in "Pericles, Prince of Tyre," the virtuous Marina, the daughter of Pericles, who had been taken captive by pirates and sold to a brothel keeper, is cursed in the following manner by a Pander of the Bawd, for not yielding her honor on the solicitation of the customers: "Now the pox upon her green sickness for me!"; and the Bawd replies to him: "Faith, there's no way to be rid on't but by way to the pox." Shakespeare was quite alive to the pains of periosteal nodes, to tendon gummata, to ozena, to the loss of hair, to the voice changed by syphilitic laryngitis, and to the sallow, withered look of the skin of the face in late syphilis. He speaks of "a pox of wrinkles," and the makes Timon tell Phrynia and Timandra, in language which shows a considerable knowledge of the characters of secondary and tertiary syphilis:

"Consumption sow
In hollow bones of man; strike their sharp shins,
And mar men's spurring. Crack the lawyer's voice,
. . . . . down with the nose;
Down with it flat; take the bridge quite away
Of him, that his particular to foresee
Smells from the general weal; make curl'd-pate ruffians bald;
And let the unscarred braggarts of the war
Derive some pain from you. Plague all;
That your activity may defeat and quell
The source of all erection."

—*Proceedings of the Royal Society of Medicine*, October, 1912.

The Successful Doctor in the Seventeenth Century.—Bernier, in his *Histoire Chronologique de la Médecine* (Paris, 1695), gives a summary in verse of the whole duty of medical man. The doctor who aspires to success, he says, must not be modest, but must do all he can to push himself forward, talking confidently with his brethren. He need not bother about further study, but should use every effort to establish useful connections. For introduction into families women are useful. Fashionable ladies, devout women, coquettes—all should be conciliated. Every one, even the meanest servant, should be cultivated. The young doctor should bring all his science to bear on satisfying fools. Let him remember that what one says of him another will repeat, and it is from this gossip that celebrity springs. To get the reputation of having much business he must take care not to be found at home; when he is in bed, let his servants say that he has been called out to a case. Let him give out that he has to be up whole nights; that the longest days are too short for him; that he is called everywhere; in short, that the practice so much sought for by others comes to him against his will and overwhelms him. Even when his trouble is poorly paid, he should speak of the big fees that are forced upon him for a visit. This hint scattered among good friends may wake up those who are asleep. The young doctor should dress as much like a man of fashion as possible that he may gain the good graces of the ladies. In the street he should bow to one side and the other, courteously saluting every one he passes. He may ride in a chariot or be carried in a chair; two carriers in the street attract much attention. Let his successes be attested by dukes and marquises. Everything, it is urged, that can advance one's interest is legitimate; even self-praise is allowed. If some parts of this exhortation remind one of the arts of Mr. Robert Sawyer, late Nock'emorf, one has the satisfaction of knowing that at the present day the arts which were considered necessary to success in medicine in the seventeenth century are extinct. The puff, direct and oblique, self-assertion, subtle detraction, intrigue, and the whole art of scheming to attain the lofty ideal *monstrari digito et dicire, Hic est*—of course all these things are unknown in this age of professional probity, or at any rate are condemned by all high-minded practitioners as obsolete and dishonorable.—*British Medical Journal*, November 23, 1912.

Rich Man's and Poor Man's Gout.—F. W. Langridge notes that in talking of cases of arteriosclerosis and cardiac pain associated with the toxemic conditions which give rise to heightened arterial tonus, Alexander Morison says: "It calls for treatment by the recognized diet and regimen. The wealthy, overfed, and idle might do worse than follow Abernethy's advice to such a patient, namely, to live on sixpence a day and earn it, with a little balneological treatment thrown in by way of consolation for their temporary and exemplary self-denial! 'Poor man's gout' is usually a consequence of the excessive imbibition of malt and other alcoholic liquors, taken to enable him to cope with the excessive labor which is generally his lot, or to procure for him a transient exhilaration and oblivion in his struggle for existence. The treatment of this condition is educational and political rather than medicinal, although in *statu anginoso* the measures which are found to relieve Dives will also be of benefit to Lazarus. A touch of colic makes the whole world kin.'"—*The Clinical Journal*, September 11, 1912.

Medical Record

A Weekly Journal of Medicine and Surgery

Vol. 82, No. 25.
Whole No. 2198.

NEW YORK, DECEMBER 21, 1912.

$5.00 Per Annum.
Single Copies, 15c.

Original Articles.

MARGINAL SOUNDS IN THE DIAGNOSIS OF PULMONARY TUBERCULOSIS.

By G. E. BUSHNELL,

COLONEL MEDICAL CORPS U. S. ARMY.

MARGINAL sounds are sounds heard at the base of the lung during deep inspiration. The writer has already discussed the subject in a previous paper[1] which, so far as it relates to marginal sounds, is to be considered as a preliminary study to the present communication. Reference is made to that paper for an account of the work of other writers. Before considering marginal sounds in the diagnosis of tuberculosis, it is desired to submit some anatomical and physiological facts which have a bearing upon the theory as to the causation of these sounds, and also for the convenience of the reader, a brief résumé of some of the experimental results which were reported in the earlier paper as well as two hitherto unrecorded experiments.

The following account of the anatomy and physiology of the pleural sinus is condensed from Gerhardt.[2] The lower margin of the lung forms a line running at nearly equal height about the thorax. At the mammillary line it is at the upper border, at the axillary line at the lower border of the seventh rib. Between the lower lung margin and the bottom of the pleural sac the pleura diaphragmatica and the pleura costalis lie in contact with one another over a surface which, according to Luschka, amounts to 2 cm. in the parasternal line, to 4 cm. in the mammillary line, to 9 cm. in the axillary line, and to 3 cm. beside the spine. This complemental space, as Gerhardt has named it, is filled in deepest inspiration so that the lung margin thrusts itself between the leaves of the pleura to their point of transition in front and behind; in the axillary line, however, only when the subject lies horizontally upon one side and breathes as deeply as possible does the lung margin (of the upper side) descend to the lower limit of the pleural sac, fill completely the complemental space and give a clear, full sound on percussion to within 2½ cm. of the costal arch.

According to Leichtenstern, quoted by Gerhardt, the excursion of the lung margins from the position of rest may be increased in expiration above that of inspiration, but often only after repeated practice. Usually there is greater mobility for inspiration than for expiration. The importance of active expiration for the production of maximum differences between expiration and inspiration is not always appreciated. Persons who have acquired great mobility of the thorax accomplish this by learning to increase the force of expiration. Men whose occupations require vigorous and continued use of the respiratory organs learn instinctively to expel the air forcibly in expiration. The wood chopper breathes out with an audible grunt as his axe descends upon the log, and is able to continue his exertions indefinitely, while the tyro is breathless after a few strokes. Becker has shown that the capacity for maximal emptying of the lungs is more than usually well developed in the players of large brass instruments.

Donders assumed a perfect elasticity of the lungs. Tendeloo,[3] however, has shown that the lung, not being a homogeneous organ, is not perfectly elastic. It returns only after an interval to its position of rest after maximal distention. It results from this fact that repeated distentions of the lung lead to an increase in its volume, temporary if the distentions are few in number, more lasting if the distentions are frequently repeated over a considerable time. Raither[4] quotes Durig, who found an increase in lung capacity immediately after a mountain trip, which disappeared in two days, and Hasselbach, who caused his servant to practice with the spirometer daily, determined the lung capacity and found that it was increased by 500 c.c. after a half-year, but that it soon returned to normal after discontinuance of the exercises. Similar observations have been made on men training for athletic exercises.

The object of the complemental space manifestly is to permit expansion of the lungs, not only temporarily during violent exercise, but during the continuance of conditions that put a strain upon the respiratory apparatus for periods of some length, the increase in lung volume being necessary to provide the larger respiratory surface requisite for the increased needs of oxygenation.

It follows from the foregoing that continued deep respirations will result in a distention of the lung unless the individual actively employs the expiratory muscles and thus equalizes the force of the two portions of the respiratory act.

Hofbauer and Holzknecht,[5] studying by means of the *x*-ray the changes of position and extent of the excursions of the diaphragm in various postures of the body, found that the arch of the diaphragm stands the highest in the dorsal decubitus, the lowest in sitting, and in standing has an intermediate position. Also that the excursions of the diaphragm are the greater the higher its position. When the subject lies upon the side, the half of the diaphragm upon the dependent side has a maximum elevation and makes large excursions. The upper half has a maximum depression and makes almost no excursion. This they explain by the fact that since the abdominal organs on account of their movability practically obey the laws of hydrostatics, their weight exercises a pressure upon the diaphragm in the dorsal decubitus which disappears in the erect position. This pressure varies for the two halves of the diaphragm in the

lateral recumbent position, being very large for the lower, very small for the upper half. The excursions of the diaphragm are the greater the more it is pressed passively upward, because the dome is the insertion of the muscle, and the movable insertion of a muscle acts with the greater amplitude of movement and greater force the farther it is removed from the point of origin.

Marginal sounds are best studied over the flexible thorax of a young and vigorous man. Mark the level of forced expiration and of deepest inspiration at the anterior axillary line. Instruct the subject to inspire deeply, but not very rapidly, and to breathe out as forcibly as possible in expiration. During inspiration numerous crackling sounds or sounds of a moister quality resembling closely medium sized or smaller moist râles are heard over the entire surface between the levels determined. The sounds are heard at the beginning of inspiration immediately below the line of forced expiration, at the close of inspiration immediately above the line marking the level of fullest inspiration. They are heard but once at a given level during a single inspiration. They follow the shadow of Litten downward and are heard only as this shadow is passing the point of auscultation, and may be obtained simultaneously along the line of this shadow by two observers over different intercostal spaces.

Attach the bell of a stethoscope to each of the two rubber tubes of a binaural stethoscope, and closing the free arms of the bells with the thumbs place the bells over the pleural sinus, one bell slightly below the level of expiration, the other slightly above the level of inspiration. Auscultate during a deep inspiration, and if marginal sounds are present and the inspiration is not too rapid it will be distinctly apparent that the crackles are heard first by the ear connected with the upper bell and only a moment later by the other ear.*

These observations establish beyond doubt the fact that the marginal sounds are developed only in a single line advancing from above downward during inspiration. Since they are never heard above the expiratory level and continue down nearly if not quite to the inspiratory level of the lung, the place of their production can be no other than the inferior margin of the lung. If the subject succeeds in following instructions so that the force of expiration equals that of inspiration, the sounds continue indefinitely with their original force. More usually, however, they become more and more faint and finally disappear. In this case, if the levels of inspiration and expiration are determined as before, it will usually be found that both the level of inspiration and of expiration have descended. Direct the subject to breathe out as fully as possible and to breathe in as little as possible, and it will be found after a few respirations of this kind that the former levels have been regained and that when deep respirations are again resumed the marginal sounds have returned. These results can only mean that the production of marginal sounds is dependent upon a free movement of the diaphragm and ceases when a preponderance of inspiration over expiration has caused the lung to become over-distended so that the diaphragm can no longer move freely. In other words, marginal sounds occur in the healthy lung during every deep inspiration if efficient contraction has taken place in the preceding expiration. Marginal sounds may be heard at all points around the base of the lungs. They are heard with more regularity over the base of the right lung because a distended stomach may interfere with the free movement of the diaphragm on the left side. They are loudest in the axillary line, the reason of which, of course, is that the complemental sinus is here deepest.

*The writer is indebted to Dr. E. H. Bruns, U. S. Army, for this experiment.

The marginal sounds when perfectly developed constitute a striking phenomenon. But it must not be expected that the results described will be readily attained even in all athletes. Stupidity and nervousness often constitute a barrier to effective breathing during examination. It may be of assistance to cause the subject to blow noisily during expiration or to cough at the end of the expiratory act. But we shall always find, among sick and well persons, a certain proportion of poor breathers who breathe the worse the more their attention is directed to the act. In such cases the marginal sounds may not be heard at all, or if heard cannot be brought back after disappearance. The absence of marginal sounds, therefore, in cases in which they might be expected, is of no value in diagnosis.

It remains to inquire how marginal sounds are affected by posture. A subject upon whom marginal sounds have been demonstrated while standing is caused to lie upon a high couch provided with an aperture so placed that the dependent portion of the thorax is accessible from below when the subject lies upon his side. Determine the level at rest of the base of the lung upon the superior side. It will have descended one-half to one inch below the level previously marked in the erect position, while the inferior lung will have ascended approximately half an inch. This demonstration is only successful when the body is not bent laterally. If the thorax is permitted to descend to fill the aperture of the couch, the relation of the parts is so changed that alteration of the lung level cannot be made out. The findings on the superior side are less affected by slight changes of posture. When the subject takes a deep inspiration the level of the base of the lung descends about two inches lower on the superior than upon the inferior side, and the complemental space is resonant almost to the costal arch. Examine for marginal sounds on the superior side and it will be found that they have, as a rule, disappeared, being present only in the most vigorous breathers and in them much diminished in loudness, while examination of the dependent side shows that they are present with sometimes increased intensity. If the subject turns to the other side the findings are reversed, the marginal sounds disappear in the formerly inferior now superior side, they are present in a marked degree on the other side.

Morrison[6] describes these peculiarities of the marginal sounds in the lateral recumbent position under the name of "reversible crepitations." He considers the cause of the crepitations to be a passive hyperemia of or an exudation into the alveoli and smaller bronchi dependent upon weakness of the heart. Our results, however, were obtained with exceptionally vigorous young men.

The fact that marginal sounds may be increased in intensity on the dependent side agrees with the observation of Hofbauer and Holzknecht already cited, that the dependent half of the diaphragm is pushed up by pressure of the abdominal viscera, for the greater separation of the insertion of that

muscle from its origin pointed out by him affords a better opportunity for the efficient contraction which is requisite for producing marginal sounds most distinctly. The abdominal viscera doubtless fall toward the inferior side in all cases. Whether they exert much or little pressure on the lower half of the diaphragm will, it is thought, depend upon the degree of relaxation of the abdominal wall and upon the precise position of the subject. Holzknecht states that the pressure of the abdominal viscera upon the upper half of the diaphragm is very small. But our observations show an actual descent of the margin of the superior lung. This can only be accounted for by the supposition that the viscera in their descent toward the lower side of the abdomen exercise no pressure upon the upper half of the diaphragm, but instead a suction which causes the low level of the diaphragm noted by Holzknecht, and the descent of the lung margin determined by us by percussion. The superior lung is passively distended to fill the vacuum produced by the displacement of the viscera. Though capable of filling the complemental space, the superior lung in its respiratory inflation moves through a comparatively small distance and marginal sounds are producible with difficulty or usually not at all. The "reversible" marginal sounds of the lateral position thus furnish an interesting corroboration of the theory advanced to explain the phenomena attendant upon their production in the erect position. They are present if the lung can expand freely in inspiration, absent if it cannot.

As for the causation of marginal sounds, being a physiological phenomenon and strictly confined to the extreme margin of the lung, the only possible explanation of their production is that they are in some way connected with the progress downward of the lung margins. It has been shown in the preceding paper that marginal sounds generally occur with Litten's phenomenon. Sahli's[7] explanation of Litten's phenomenon is undoubtedly the correct one. "As the diphragm in its descent begins to peel off from the thorax it exerts a suction upon the intercostal spaces just below the margin of the lung. This produces the shadow." The fact that the soft parts of the thoracic wall are depressed during inspiration, thus producing the shadow of Litten, proves that, as might be expected, the apposed moist surfaces of the diaphragmatic and costal pleura offer some resistance to their separation. The "peeling off" of the diaphragm tends to create a vacuum which the pressure of the atmosphere fills by indenting the soft parts of the intercostal spaces. But the resistance soon gives away and sounds are produced as the moist surfaces are torn apart which are the marginal sounds. It is evident that the more suddenly and forcibly the separation of the pleural leaves is effected, the more marked will be the preliminary depression and the louder the marginal sounds. This is corroborated by the fact that the production of Litten's shadow and of marginal sounds both depend upon a vigorous inspiration.

Marginal sounds in the vigorous breather resemble rather loud, dry crackles. In persons who breathe less forcibly they are more like moist râles, fine or medium coarse. While other writers may not make just this distinction, it is evident that variation must exist in the quality of these sounds, for they have been likened to dry crackles, moist râles, crepitant râles, and friction sounds. Cabot states that after the age of forty-five it is unusual not to find marginal sounds. It has appeared to the writer from examination, it must be admitted, of comparatively few cases of persons beyond that age that the sounds are relatively dry, resembling crackles rather than moister sounds. This would be most obviously explained by a relative dryness of the pleural surfaces resulting in a slight "tackyness," and hence a crackling sound when those surfaces are pulled apart. But the same quality has been noticed in the young if the inspiration is forcible. Is there any relation between rapidity of separation of the pleural leaves and the "dryness" of the resulting sounds? This question, in the writer's judgment, may be answered affirmatively, for the following reason: The pulmonary margin must, of course, always remain closely applied to the angle formed by the free portion of the diaphragm with the costal pleura and must, therefore, in rest have the same amount of lubricating moisture. Now, the great expansion which takes place in the lower lobe during deep inspiration leads to a relative dryness of its pleura because the same amount of moisture is necessarily distributed over a much more extensive surface. The margin of the lung, therefore, becomes drier as it expands, and being constantly drier because constantly expanding drinks up, as it were, the moisture at the juncture of the pleural leaves which would otherwise permit the separation of the apposed surfaces with sounds resembling moist râles, and produces instead a series of drier, more crackling sounds. Hence, the more powerful the inspiration the drier, and, therefore, the louder the sounds, and the more they resemble as respects quality those produced in the chests of persons of advanced years.

Marginal sounds have been interpreted in every conceivable way, but almost without exception as a morbid phenomenon. They have been considered a sign of tuberculosis of the bronchial glands, of apical tuberculosis, of dry pleurisy, of marginal pleurisy excited by an accumulation of infectious fluids which escape from apical lesions and collect in the pleural sinus, as relics of former pleurisies or influenzas, as due to the presence of mucus aspirated into the lung margin from above, as a sign of atelectasis, which atelectasis has been ascribed to compression of the base of the lung by the bending of the body forward, as in mechanics, or to disuse of the lung margins in the obese and the bed-ridden. The uncritical way in which these sounds have been declared without adequate examination or proof to indicate this, that or the other morbid condition is a rather melancholy exhibit. Many of the items of the above no doubt incomplete list need not be taken seriously. The one unanswerable argument against all these suppositions is that marginal sounds are best elicited in the most vigorous specimens of mankind. Still something may be gained by a consideration of these sounds in connection with the diagnosis of pulmonary tuberculosis, the allied condition of pleurisy and the supposedly allied condition of atelectasis of the base of the lung.

It has been held that marginal sounds bear some direct relation to early apical tuberculosis, and that they are heard only on the affected side. The experience of the writer, however, convinces him that in small apical lesions, whether those of initial or arrested tuberculosis, marginal sounds are produced practically to the same extent as in health.

But when the disease involves any considerable portion of the upper lobe, it is found that while present on the healthy side, the marginal sounds are often heard more easily over the base of the affected lung, and, moreover, that they are generally evanescent.

According to von den Velden[8] the anatomical cause of what he calls "a fine, small equal râle very similar to crepitations (Knisterrasseln)," occurring at the base of the lung at the end of inspiration is a pure marginal atelectasis. Citing as extreme cases the atelectases demonstrated by Traube as the result of upward pressure from abdominal affections, von den Velden goes on to say that "there is a series of gradations which depend on a more or less restricted power of excursion of the ribs and diaphragm. If this excursion is wanting or lessened the inspiratory expansibility of the lungs suffers, especially those parts affected by the first respiratory widening of the thorax, *i.e.* the margins. Clinical observation finds them (the atelectases) between the mammillary and axillary line because this part normally has the greatest capacity for mobility and accordingly must first become atelectatic." He finds the marginal sounds absent in patients with strong and frequent cough in which cases "there is ventilation of the margins," also in "the so-called compensatory emphysema of the lower lobes." He finds marginal sounds present in 60 per cent. of cases of apical tuberculosis. He thinks the sounds depend upon a pure marginal atelectasis and that their cause is a diminished activity of the diaphragm. Aside from the superficial breathing of the phthisical, the reflex arrest of the movement of the affected side and stomach and intestinal troubles as causes for defective breathing, marginal sounds in apical tuberculosis of the same side are, he says, in many cases to be regarded as the auscultatory equivalent of Williams' phenomenon. De la Camp could only demonstrate an exactly measurable inspiratory retardation of the diaphragm in one-third of his cases, whereas von den Velden's 60 per cent. of cases with marginal sounds shows, he thinks, the marginal sounds the finer test. Williams' phenomenon is defined by Oestreich and De la Camp[9] as a sign of incipient phthisis, consisting in diminished or absent excursions of the diaphragm of the affected side in inspiration, the diaphragm of both sides appearing alike in the position of expiratory rest. That is the diaphragm of the diseased side lags in inspiration. De la Camp ascribes the phenomenon to paralysis or paresis of the phrenic nerve implicated in pleuritic processes where it passes over the dome of the apical pleura. The more usual explanation of Williams' phenomenon is that it is due to loss of elasticity of the lung through disease of the upper lobe. When the upper lobe is the seat of a fairly well-marked tuberculous lesion or is more or less fixed by pleural adhesions it has lost a material portion of its elasticity, it no longer expands as readily as the healthy lung. Hence, during ordinary respiration, the healthy lung assumes part of the work of the diseased lung. This is, therefore, habitually more distended and the diaphragm may occupy a lower level on this than on the diseased side. But if the lower lobe is not involved in the disease and there are no pleural adhesions over it, the diseased lung is still capable of fairly full expansion, though such expansion is only possible with greater effort than formerly and takes place chiefly at the expense of the lower lobe. The lower lobe having an excessive function to perform quickly becomes over-distended during deep breathing as ordinarily practised. The diaphragm which at first descended fully during inspiration and in so doing was instrumental in producing marginal sounds abundantly, soon finds its movement checked, the over-distention, the temporary emphysema, of the lower lobe prevents the collapse of the lung in expiration which is necessary if the lung is to move freely in the succeeding inspiration, and marginal sounds are no longer producible. Hence the initial abundance of the marginal sounds and their speedy disappearance. On the healthy side, the lung being relatively over-distended at the beginning of the examination, is capable of producing marginal sounds, but with less distinctness than the diseased lung at the outset because the lung has a larger volume at the beginning of inspiration. The law of production of marginal sounds in the condition under consideration is thus seen to be the same as in health. That lung is best capable of producing marginal sounds which can expand most freely in inspiration. Marginal sounds then are the equivalent of Williams' phenomenon in so far as the presence of disease of the upper lobe tends to diminish the use of the lung in ordinary respiration and thus make certain that when it is called upon for deep inspirations there will be no over-distention to prevent its free expansion.

The correctness of the view set forth above can be easily demonstrated, for the marginal sounds of the tuberculous lung may be brought back after their disappearance and the marginal sounds of the healthy lung may be increased in distinctness by the same expedient as that already described, *i.e.* by causing the patient to exhale during several expirations more strongly than he inhales. This procedure is not, however, to be recommended in the presence of active and extensive tuberculosis.

It has been said that marginal sounds are absent in advanced tuberculosis. They will, however, be found present more frequently than is generally supposed, if they are sought for at the beginning of the examination; in other words, they are often evanescent rather than entirely wanting. But excessive coughing, if it leads to a distention of the lung margins, prevents the occurrence of marginal sounds, and they are, of course, absent in the case of pleural adhesions over the lower lobe or of advanced tuberculosis of that lobe, conditions which prevent the necessary free expansion of the lung. On the other hand, the presence of marginal sounds is a proof of the absence of extensive adhesions and of advanced tuberculosis of the base.

For those who consider all sounds resembling râles as pathological there exists the manifest danger that marginal sounds may be interpreted as evidence of an extension to the base of a tuberculous process in the upper lobe. And the opinion which has been expressed that tuberculosis of the lower parts of the lung occasionally runs a benign course probably arises from the misinterpretation of marginal sounds. It is well known that sparse miliary foci occasionally become fibrous in this location, and it seems to be true that tuberculosis of the lower lobe of greater extent pursues at times a sluggish (hardly a benign) course, provided that the lung is restrained from movement by pleural adhesions. Tuberculous lesions of the base of any considerable extent are never benign if such adhesions are absent or are inadequate to check respiratory movements. The diagnosis of a benign

tuberculosis of the base in a case in which the lung margin is freely movable should, therefore, be looked upon with suspicion. If the auscultatory signs are due to marginal sounds they may be recognized as such by the aid of the criteria already mentioned. On the other hand, if the lung is bound down by adhesions, sounds heard at the base are not marginal sounds. The accurate determination of the mobility of the lung margins and of the range of the respiratory movements is, therefore, of much importance in the study of early basal tuberculous lesions.

Pleural friction sounds are distinguished from marginal sounds by their occurrence above the level of forced expiration in the individual case, by their presence in expiration as well as in inspiration, usually by the character of the friction sound. In pleurisy there is to be expected a lessening in the vigor of the inspiratory movements. The pleural friction sounds will usually be heard in cases in which the respiratory excursions are slight, the marginal sounds in cases in which they are ample. The marginal sounds are evanescent, but may be brought back by deflation of the distended lung, pleural friction sounds are more constant. Attention to the position of the lung margin at the time when the sounds are heard will often serve to discriminate marginal from friction sounds. Thus sounds heard toward the close of an inspiration at a point above the position of the lung margin at the moment cannot be marginal sounds. In short, what might be called the obedience to fixed laws of the marginal sounds affords the best criterion by which to distinguish them from signs of disease.

Koll[10] has described a sinus pleuritis in which the symptoms were abdominal, the signs thoracic, the latter consisting in a fine friction sound heard "during the second half or at the height of a deep inspiration and at the beginning of expiration" and limited to the pleural sinus. The diagnosis was in no case confirmed by autopsy, and the friction sounds as described by him are practically identical in their mode of occurrence with marginal sounds. It is interesting to note that at the beginning of his investigations Koll raised the question whether the sounds heard were not physiological sounds, and even considered the hypothesis that they might be due to the unfolding by the intruding lung surfaces of the damp pleural surfaces which lie upon one another in ordinary breathing. But he rejected this idea after examining a large number of other patients because though he sometimes heard fine "pleural crackles" they always disappeared after one or two deep breaths, the evanescence of the marginal sounds in poor breathers thus proving as misleading to him as it has to many other investigators.

In the pleural sinus localized pleurisy is not as often seen at autopsy as elsewhere in the pleural cavity. It is not uncommon to find but partial adhesions in the sinus in cases in which the lung is firmly fixed to the chest wall by old universal adhesions. It is to be expected from the pathological law that localized pleurisies develop over local pulmonary lesions, that, at least in tuberculosis, pleurisies of the complementary space would be of less frequent occurrence than pleurisies of the pulmonary pleura. Dry pleurisies limited to the pleural sinus do occur however. Those recognized by the writer have presented friction sounds quite different in their quality from marginal sounds.

Von Ziemssen[11] has described a rare form of dry pleurisy which he designates as circumscribed indurating pleurisy. It is characterized by its unusually long duration and the extraordinary intensity of the pleuritic friction, inflammatory and febrile symptoms being absent. The harsh friction perceptible to the physician as well as the patient by palpation may continue for many weeks with undiminished intensity but without pain. The disease usually has its seat in the anterior and lateral portions of the complementary space.

True râles often, no doubt, mistaken for friction sounds are the râles from atelectasis dependent upon a pleural effusion. According to Lichtheim[12] it is not necessary that the effusion shall be large enough to actually compress the lung. A smaller effusion permits the retraction of that part of the lung which lies beneath the surface of the fluid. No longer following the respiratory movements the affected portion of the lung loses its air completely by absorption and becomes of a leathery consistency, but may still be capable of expanding during deep inspiration with the production of râles which, according to Janowski,[13] may even be heard through the effusion if the layer of fluid is not too thick. If edema supervenes, according to this author, there may be heard in addition to the fine crackles from the expansion of the atelectasis which occur only on inspiration very numerous small, moist râles in both expiration and inspiration.

Writers on physical diagnosis recognize the fact that friction sounds may simulate râles. It is not desired to deny this absolutely, at the same time, however, the frequency with which marginal sounds are taken to be evidence of pleurisy and the very markedly different quality of the unmistakable pleuritic rub justifies the question whether the supposed friction sounds which simulate râles, if they are not of the nature of the râles just mentioned, are not really after all usually marginal sounds which persist during the early stage of pleurisy, and when the diagnosis has been confirmed by other signs, are considered to be proved thereby to have been a sign of early inflammation of the pleura, *i.e.* friction sounds. Certainly sounds like râles occurring in the pleural sinus should not be regarded as a sign of pleurisy in the absence of other signs of that disease.

While the notion that marginal sounds are due to an atelectasis of the base of the lung, complete or incomplete, has been widely accepted, it is unnecessary to say that such an explanation in the absence of pleural effusion, of certain rare pulmonary conditions or of extreme abdominal distention has no anatomical facts in its support. No one, it may be confidently affirmed, would have anticipated that atelectasis could occur from slight causes in the part of the lung which is most used in respiration. The interpretation of marginal sounds as the râles of an expanding atelectasis has simply been accepted for the lack of a better explanation of this, at first sight, puzzling phenomenon.

Recalling the phenomenon of the reversibility of marginal sounds in lateral recumbency, we may point out that in the absence of competent organic causes for the condition atelectasis of the pulmonary margins is unlikely to occur in the recumbent individual, however weak or obese, provided that he is able to turn in bed, for every change from one to the other side brings with it the passive inflation of the margin of the superior lung. The

possibility of the origination of atelectasis from disuse of the pulmonary margins would, therefore, seem to be excluded in cases in which the lateral decubitus is possible.

The expert clinician learns by experience to attach no importance to the marginal sounds, whatever his theory of their causation may be. Perhaps marginal sounds were in mind when Janeway[14] said, "we may hear fine crepitation which does not mean anything much," and when Lawrason Brown[15] adopted the rule that "physical signs at one apex should be considered as due to tuberculosis until the contrary is proved: physical signs at one base should be considered non-tuberculous until the contrary is proved."

But for many physicians the marginal sounds have constituted a veritable stumbling block, to the removal of which it is hoped that the investigations here reported may in some small degree contribute.

REFERENCES.

1. MEDICAL RECORD, Jan. 20, 1912.
2. Auskultation und Perkussion.
3. Studien über die Ursachen der Lungenkrankheiten.
4. Studien über Emphysem. Beitr. zur Klinik d. Tub., Vol. XXII.
5. Mitteilungen aus d. Lab. f. radiolog. Diagnostik, Heft 2, Zur Physiologie und Pathologie der Atmung.
6. *Lancet*, May 6, 1911.
7. "Diagnostic Methods." Second American Edition
8. Ueber Randgeräusche, Beitr. z. Kl. d. Tuberkulose, Vol. IV.
9. Anatomie u. Physikalische Untersuchungs Methoden, Berlin, 1905.
10. Ueber Sinuspleuritis, *Deutsch. Archiv f. Klin. Med.* 1896, Vol. 57.
11. Ueber seltnere Formen des Pleuritis, p. 281, Internationale Beiträge zur Wissenschaftlichen Medizin, Festschrift Virchow, Band III.
12. Versuche über Lungenatelektase, *Archiv f. exper. Path. und Pharm.*, Vol. X, p. 54.
13. Ueber Knisterrasseln (Krepitationen) bei Vorhandensein von Flüssigkeit i. d. Pleurahöhle, *Zeits. f. Kl. Med.*, Vol. 36, 1898.
14. Proc. 1st Meeting Nat. Assn. for Study and Prevention of Tuberculosis, p. 274.
15. *Albany Medical Annals*, April, 1906.

FORT BAYARD, NEW MEXICO.

THE MECHANISM OF THE HEART BEAT, WITH A CONSIDERATION OF SOME OF ITS FUNCTIONAL DISTURBANCES.*

BY WALTER R. STEINER, A.M., M.D.,

HARTFORD, CONN.

VISITING PHYSICIAN, THE HARTFORD HOSPITAL.

THE mechanism of the heart beat has been of absorbing interest since the earliest time. In the sixteenth century the pious Fracastorius, unable to solve it, dismissed the question, saying God alone could understand it. Since then the pia mater of many a distinguished physiologist and clinician has been stretched more than once to the aching (to borrow a quaint expression from Sir Thomas Browne) in the effort to explain it. In the last century the neurogenic theory was long in vogue, which considered the nerves to be responsible for the origin and transmission of the heart beat. Later, in the myogenic theory, this function was assigned to the muscles, and the solution of the problem is not yet in sight. However, if we remember, as Lewis emphasizes, that the walls of the heart are composed of a syncytium of muscle fibers closely interwoven with nerve fibrils and ganglia, and if we speak of these fibers as in full functional connection with the nerve elements surrounding them, then it is immaterial to the subjects considered and to the conclusions arrived at, whether one or other view is held.

It has long been known that in the lower vertebrates the origin of the heart beat was in the sinus venosus, which is in them a distinct and well-defined chamber. In the mammalian heart, on the other hand, the sinus and auricles are fused into one cavity which is designated by the latter's name.

According to Keith, the auricles and ventricles are merely outgrowths from the primitive cardiac tube of the embryonic state, and are formed as pouches from the tube after it becomes bent upon itself. When the tube ceases to exist as such, remnants of its primitive tissue are found in the auricles in isolated masses, at the superior cavo-auricular junction, where it is known as the sino-auricular or sinus node, in the vicinity of the coronary sinus, in remnants in the auricular septum, in the valve of Eustachius, and at the mouths of the pulmonary veins. The tissue which unites the auricles with the ventricles and is known as the bundle of His or the atrio-ventricular bundle is thought to belong to the same system. It represents that portion of the heart muscle which is most irritable or that in which rhythms are most readily developed. These fibers differ from the cardiac muscle elsewhere, having a fusiform character and a great structural similarity. They seem, also, to have a remarkable glycogen content.

The sinus node, above referred to, is normally, as Keith has well shown, the pace maker of the heart or the site where cardiac impulses to contraction first normally arise. It lies at the junction of the superior vena cava and right auricle, and has generally a length of 2 cm. in man and a thickness of 2 mm. Keith's work has been amply confirmed by Lewis, Lewis and Oppenheimer, and Cohn and Kessell. Unfortunately the pathology of this node has not been extensively investigated, but in the type of arrhythmias to be described later and known as perpetual, or termed auricular fibrillation, Koch and Draper have reported extensive sclerotic changes.

In 1892 Kent published an imperfect account of a muscular connection in the mammal between the auricles and ventricles. A year later His, Jr., independently described this muscle bundle and Retzer, Braeunig, Tawara, Erlanger, and other investigators have subsequently much amplified their work. The auricular fibers join at the base of the auricular septum, near the coronary sinus, a specialized structure known as the auriculo-ventricular node. It is situated at the posterior and right border of the septum. At this node the bundle of His, or the atrio-ventricular bundle, commences and is directed at first almost horizontally forward and to the left. Then pursuing a course directly to the right of the central fibrous body of the heart, it goes to the pars membranacea of the ventricle, being ensheathed in a fibrous canal throughout its whole course. At the anterior part of this membrane, the bundle divides at a point a little in front of the anterior end of the attachment of the median or septal segment of the tricuspid valve, the left division perforating the membrane while still ensheathed upon the upper border of the muscular septum. It then enters the sub-endocardial space of the left ventricle immediately beneath the union of the anterior and right posterior cusps of the aortic

*Read before the Franklin District Medical Society, Greenfield, Mass., January 9, 1912.

valve. Subsequently it continues its course downward and under the endocardium until it undergoes arborization upon the septum, where it distributes its main branches to the papillary muscles of the mitral valve. The right branch is also directed downwards and subendocardially entering the so-called moderator band or its representative and going thence to the papillary muscles, where it begins its arborization. These arborizations on both the right and left sides of the heart are directly continuous with the complex network of Purkinje fibers, by which it comes in direct communication with the ventricular muscle fibers. The junctional tissue thus described has a different histological structure in its several divisions, for first there is a diminution in the size of the fibers, especially at the sinus node, then an increase, especially in the network of Purkinje, and finally a decrease. The fibers of the bundle are conspicuous on account of their pallor.

The impulse to contraction then normally has its origin at the sinus node and is transmitted from it to the auricular fibers. These contract and carry the impulse to the auriculo-ventricular node from whence it is, in turn, conveyed to the papillary muscles of the ventricles by means of the muscle of His, and consequently the ventricles themselves finally contract. This represents the normal course of the mechanism of cardiac contraction, but impulses leading to pathological contraction may arise in the irritable primitive tissue located, as I have above described, in other areas of the heart's musculature. From their onset irregularities in the rhythm or arrhythmias arise. Formerly these were classified according to the five cardiac functions of rhythmicity, excitability, contractibility, conductivity, and tonicity, for any interference of these properties was thought to cause them; but more modern knowledge considers any such abnormality insufficient to differentiate precisely the functional disturbances of the heart. At times more than one of the functions is at fault. We shall consider briefly heart block, extra-systole tachycardia, auricular fibrillation, respiratory arrhythmia, and alternation. Other forms of irregularities also exist, but are less frequent and consequently less deserving of mention.

For a separation of these different forms, a study of the pulse both arterial and venous is most necessary. The arterial pulse was the first recognized, but no instrument was made to study it by tracings until Vierordt devised a sphygmograph for this purpose in 1855. Since then Marey, Dudgeon, and Jaquet have invented excellent instruments to accomplish this. Our knowledge of the venous pulse, though more recent, is yet of antique date for venous pulsations are referred to in the writings of Lancisi and Morgagni, in the eighteenth century. Later, in 1865, Friedreich took the first venous curves from pathological subjects and Potain, two years later, obtained simultaneous tracings of the apex beat, carotid, radial, and jugular pulses from his sister. But the first impetus to the scientific study of the venous pulse was given by James Mackenzie, now of London, who, in 1893, published his first investigations upon this subject. His scholarly book on "The Study of the Pulse" appeared nine years later, and stands as a wonderful example of the work a general practitioner can do to advance the science and art of medicine. For as he states in the preface of that book, he had seldom opportunity in the midst of his busy everyday practice to devote an hour's uninterrupted study to its preparation. In spite of this difficulty in its composition, it stands to-day unrivaled, for it yet remains the standard book on the study of this subject. The tracings from the venous pulse show the time of onset of the auricular systole, while tracings from the arterial pulse reveal that of the corresponding ventricular contraction. By a study of the tracings from both, the onset of contraction in each is given, as well as their time relationships.

The venous pulse is recorded by Mackenzie's special attachment to the Dudgeon sphygmograph, by Mackenzie's ink polygraph, by Jaquet's or Uskoff's polygraphs, or by other instruments. The tracings in both man and animals are very similar and show, like the auricular curve, three main elevations and three main depressions so that similar factors are concerned in the production of both of them. In addition to the above-mentioned instruments for the study of the pulse, the electrocardiogram first introduced by Einthoven, in 1903, should be mentioned, for it can also register the human heart beats. It consists of a single conducting strand between the poles of a powerful magnet. The movements of the string are observed by projecting its shadow upon a screen. The string is connected with a carrier at the upper and lower ends of the cleft between the magnetic poles and through it communicates with the two wires which transmit the current to be examined to and from the instrument. The readiness with which it can be used and the absolute reliability of the curves predict for it an extremely useful and important future. Its cost, however, is a serious drawback.

1. *Heart Block.*—By heart block we mean atrio-ventricular allorrhythmia or independent auricular beats without corresponding ventricular contractions. This irregularity has been known since the time of Harvey, the illustrious discoverer of the circulation of the blood, but it was not experimentally produced until recent years. In 1895 Graupner apparently destroyed, with success, the muscle of His in a rabbit's heart, obtaining a dissociation in the rhythms of the auricles and ventricles. Later the investigations of Hamblet, Hering, Retzer, Tawara, Erlanger, and his associates, Tabora, Briggs, Cohn, and Trendelenburg have extended our knowledge of this condition so that we can now safely affirm that the muscle of His or the atrio-ventricular bundle is the path of the conduction of impulses from the auricles to the ventricles. If the dissociation of the normal sequence of ventricular contractions following those of the auricles is complete then both upper and lower chambers of the heart will contract absolutely independently of one another, for the ventricles have a dormant, inherent rhythm of their own, which is called into action, when they can no longer receive impulses from the auricles by means of the muscle of His. If, on the other hand, the block is incomplete, that is, if some of the impulses can pass through the muscle of His, the dormant ventricular rhythm is not aroused and we get two or more auricular systoles to one ventricular or in other words we have two to one, three to one, four to one ratios, etc. (a ventricular contraction at different regular intervals). In the still lighter forms, the transmission of the stimulus to contraction may be merely delayed through this muscle, and be manifested, in a jugular tracing, by the prolongation of the intersystolic period (the interval between the con-

traction of the auricle and the contraction of the ventricle, which normally is fairly constant and one-fifth of a second in duration). This arrhythmia does not necessarily result from tissue destruction, for it may ensue from a stimulation of the vagus nerve, be due to the injection of poisons (especially digitalis, aconitine, adrenalin, muscarine, and physostygmine) and occur directly from asphyxia.

The first case of clinical heart block was observed in 1875 by Galabin, who reported at this time a case of slow ventricular action (25 to 30 per minute) and stated in his paper "we have here a heart, the auricle of which sometimes contracted twice in the interval between two ventricular pulsations and sometimes singly in the midst of a long pause instead of just before the systole of the ventricle." He made this diagnosis from his study of the case by auscultation and by cardiac apical tracings. Chauveau, Wenkebach, His, and Mackenzie have subsequently advanced our knowledge of this subject, and during the last few years many cases have been published. In them the radial pulse is slow with forcible beats and a high blood pressure. Occasionally an indication of auricular contractions may be observed in the radial tracings, while by auscultation distant sounds, due to auricular contraction, may be detected, as in one of Osler's cases. By venous curves we find waves from the contraction of the right auricle distributed frequently and uniformly in the tracings, exhibiting a 2, 3, 4 or more rhythm as compared with the ventricular contractions. If the block be partial, some ventricular contractions are preceded by those of auricular origin, but if the block be complete there are regular auricular contractions without corresponding one on the part of the ventricles. The electrocardiographic tracings, however, are the best means to show the block, for the separate systoles of the auricles and ventricles are here most readily revealed and their time relationship to each other most easily distinguished.

Lewis has recently collected fifty cases of clinical heart block, in which the bundle has been carefully examined and in none of them has it been shown to be absolutely intact histologically. The findings have varied from gummata, circumscribed areas of fatty degeneration or fibrosis (the latter being frequently combined with calcareous degeneration), anemic necrosis, ulceration, atheromatous degeneration, lymphocytic deposits, calcareous nodule on the bundle's path, or a stretching and subsequent obliteration of this muscle. The fatty and fibroid changes in the myocardium may show a peculiar predilection for the specialized tissues. Some of these cases exhibited slow pulses, associated with syncopal or epileptiform seizures. They form a comparatively small yet distinct clinical group which has been included under the term Adams-Stokes syndrome. I have seen five such cases and reported three of them before the Hartford County Medical Association, April 3, 1906. These patients present nervous symptoms as shown in attacks of a vertiginous, syncopal, or epileptiform nature, which are accompanied by a slowing or standstill of the ventricular rate. The nervous symptoms thus seen are due to an anemia of the brain, as has been substantially proven by experimental observations, while the cause of the ventricular slowing must be in the heart itself or in its nervous connections. If the duration of this slowing continue only for from two to two and a half seconds, then little or no nervous disturbances will follow; if a longer period of from three to five seconds be seen, then unconsciousness will ensue; if the standstill period lasts fifteen to twenty seconds, epileptiform phenomena will occur, while an absence for ninety to one hundred and twenty seconds rarely results in recovery. The epileptiform seizures are more frequent in partial than in complete heart block and seem to be due in the former to some alterations in conductivity, resulting in a slowing of the ventricle; while in the latter it appears to result from some factors which influence the pace-maker of the ventricle, situated in the immediate neighborhood of the lesion producing the dissociation. A partial block may be increased by (1) a sudden increase in the auricular rate and (2) vagal inhibition. Heart block from the use of digitalis or vagal stimulation appears to be due to the result of the drugs or nerve action upon tissues already deficient in the power of conduction.

The prognosis of Adams-Stokes disease is always grave, yet need not be immediately fatal, but when death does occur, it is most apt to be sudden. One of Osler's patients had a slow pulse for thirty years. There is no specific treatment. In the younger patients, where a syphilitic taint may be present, the iodide of potassium should be employed. Its use has apparently cured a number of cases.

The milder forms of depression of conductivity occur in infectious diseases, especially influenza and acute rheumatic fever. Their appearance should be a warning against the further use of digitalis, if this drug is being administered, as its further employment might lead to the production of a severe heart block.

When there is a complete dissociation between the auricular and ventricular systoles, then, after an interval, which varies with the rapidity of the block's onset, the ventricle will contract spontaneously for it possesses a dormant, inherent rhythm of its own (the idioventricular rhythm). Its rate is slower than that caused by the sinus node, the normal pace-maker of the heart, as it is thirty to the minute against seventy-two of the latter. This former rhythm is also termed physiological or homogenetic. It seems to be especially connected with the so-called primitive cardiac rests, which are the seat of the rhythmic discharges. The cardiac muscle can also respond to external causes of irritation, and when such stimuli have ceased to act, can resume again its homogenetic rhythm. These external causes, which are pathological, may give rise to a premature beat or to contractions which are rhythmically repeated in a series of beats. They are always different from those of a homogenetic type and have been designated heterogenetic. They are not seen at regular intervals, as the idioventricular beats, but are haphazard or premature in their time of occurrence so that the interval between their onset and the preceding systole is customarily very short, and the subsequent pause of diastole long, generally exceeding the distance between two beats of the sinus rhythm. The homogenetic types differ from the heterogenetic in that that the former "signals the birth of the impulse which promotes the idioventricular contraction, while the latter actually initiates the premature beat or promotes its special impulse." Again, the former are associated with the normal nutrition of the heart, while the latter result as a consequence of a gross disturbance of this nutrition. They also

differ in their rates, for the homogenetic rate is slow, while that of the heterogenetic is rapid, rarely being less than one hundred and thirty and sometimes surpassing four hundred to the minute. If the increase in beats comes on gradually, the new rhythm is probably identical with the old, except for its more rapid rate. If the rate rises suddenly and those before and after this increase are constant, then some new factor must have appeared.

2. *Extra-Systole.*—By extra-systole we mean that type of cardiac irregularity in which there are additional contractions of the heart which accompany those of a normal cardiac rhythm. By tracings we find a contraction occurring before its time, followed by a pause (the compensatory pause). Knoll has shown that the distance from this premature to the preceding and succeeding systoles is equal to the distance occupied by two whole cycles of regularly beating ventricles, while Engelmann explains it as having arisen independently of an auricular contraction. The auricular impulse succeeding the extra-systole, he thinks, reaches the ventricle when in systole and consequently in the so-called refractory period. As a result, the ventricle fails to respond to this impulse and waits for the next one, so the long pause is produced. If, however, the heart rate be slow and the premature contraction be sufficiently early, then no response may be missed and the extra beat may be merely interpolated. This irregularity may be of ventricular or auricular origin or arise in the auriculo-ventricular node (nodal extra-systole). Experimentally it may be produced when pressure in the ventricle is abruptly raised by clamping the aorta, by rendering the heart muscle anemic, by deliberate obstruction of the vena cava, by ligation of a branch of the coronary artery, or by the injection of certain poisons (digitalis, adrenalin, aconitine, muscarine, and physostygmine). It occurs when all nervous connections between the heart and the central nervous system are severed, and is seen in isolated and perfused hearts.

Clinically, ventricular extra-systoles are characterized by the presence of a full compensatory pause and the absence of permanent dislocation of the spacing in the recovered rhythm. The venous and arterial tracings proclaim them to be of the ventricular type, and by the electrocardiagram a further localization in the walls of the ventricles may now be made.

Premature auricular contractions are recognized by the relative shortness of the pause which follows them, although this pause is relatively longer according as the seat of the disturbance moves from the pace-maker or sinus node to the ventricle. In addition to the general absence of the compensatory pause we have also a permanent dislocation of the spacings of the succeeding systoles. Unfortunately we do not know their method of production.

Premature beats arise in the junctional tissues when simultaneously a premature contraction is seen in both auricle and ventricle. The systoles are thus more or less coincident but there may be considerable variations in the relation of one to the other. The measurement of the interval between the onset of the systoles in the auricles and ventricle will aid in the differentiation of this variety of premature contractions.

Extra-systoles are seen in neurotic individuals as well as in those who suffer from rheumatism, cardiosclerosis, dyspepsia, or tachycardia. They have no specific treatment.

3. *Tachycardia.*—Increased frequency of the heart beat occurring periodically, as a common clinical phenomenon. It is caused normally from stimuli arising at the pace-maker or sinus node under the influence of emotion or exercise; and is also seen in persons who exhibit an instability of their nervous system, as well as in those whose myocardium is involved in a disease process, as in tuberculosis. But apart from these varieties it occurs in a specific form, which is a grave and not infrequently fatal malady. It is characterized by the abrupt appearance and disappearance of the attacks and is brought on in a haphazard manner. It is due to pathological or heterogenetic contractions which occur rhythmically in a series of beats. Experimentally it may be produced by induction shocks or mechanical stimuli as well as by the other methods employed to cause single premature contractions. It may be of ventricular or auricular origin. If the latter, it is consequently of ectopic origin and the rate proclaims it as pathological. Fully established, it may be of a few minutes' duration or continue for half an hour or more. Eventually the heart generally recovers and the pace-maker's rhythm becomes dominant again. The tachycardia, however, may become progressive in rate so that finally the ventricles may no longer beat coördinately and death follows. The paroxysms appear to be formed in the heart wall as a result of local disturbance. They are of rare occurrence and their foci of origin can be identified by the knowledge we have of the type of electric curves resulting from the experimental stimulation of various portions of the ventricular walls. Each series of premature contractions is apt to be followed by a pause of considerable length.

Tachycardias of auricular origin are almost due to heterogenetic contractions arising in the auricle. They are more common than those of ventricular origin and may last from a few seconds to an hour, several days or weeks or months. They are identical in their paroxysms, however they may vary in duration, and are recognized by polygraphic tracings.

The third type arising in the vicinity of the auriculo-ventricular node, now designated as nodal rhythm, is the rarest of the three.

Lewis has classified the tachycardias upon their clinical pathology as follows:

(*A*) Homogenetic tachycardias, the result of alterations in the rate of physiological impulse formation at the site of the old pace-maker.

(*B*) Heterogenetic tachycardias:

I. Regular tachycardias springing from single foci of the musculature.

(*a*) Arising in the pace-maker (as yet unobserved).

(*b*) Arising in the central regions of the auricular tissue.

(*c*) Arising in the neighborhood of the auriculo-ventricular node.

(*d*) Arising in the right ventricle.

(*e*) Arising in the left ventricle.

II. Irregular tachycardia probably springing from many foci in auricular musculature.

4. *Auricular Fibrillation.*—Instead of a return of the tachycardia to a normal pulse rate, a still higher grade of disorder may be seen, characterized by a perpetual and absolute irregularity of the arterial pulse. This is designated as auricular fibrillation or auricular delirium. In this condition, the auricle is in the diastolic position and its mus-

cle is in an extremely active condition of movements or is fibrillating. The auricular tissue appears to be broken up into a variable number of small areas, which can originate, independently and spontaneously, heterogenetic impulses.

This condition is the most common of all the causes of persistent cardiac irregularity, being met with in about fifty per cent. of all such cases. It has been called the mitral pulse, pulsus irregularis and perpetuus, and has been attributed to delirium of the heart. Formerly the pulse in this type was characterized with the adjectives irregularis, inæqualis, deficiens, and intermittens. A prominent systolic pulsation is also seen in this condition, which has been considered as due to tricuspid incompetence. The irregularity has been long known, but the chief progress of our knowledge concerning it dates from the appearance of Mackenzie's book on "The Study of the Pulse," which appeared in 1902. At that time he considered it due to auricular paralysis and correlated the two chief phenomena in this type, viz., gross irregularity of the heart and the systolic venous movements, which he called the ventricular form of venous pulse. For, in venous tracings of these cases, the auricular wave is missing and the pulse is of the so-called ventricular type.

Later Hering described its arterial pulse and included this class of functional disturbances under the title pulsus irregularis perpetuus, and the subsequent introduction of the electrocardiograph has fully substantiated its specific nature. Finally Mackenzie found evidence that the auricle in these cases was active, for (1) at autopsy the hearts were found to be hypertrophied and (2) in certain instances the normal rhythm reasserted itself. In 1904 he published a paper in which he located the seat of this rhythm in the junctional tissue lying between the auricle and ventricle, which has been termed the auriculo-ventricular node and which we have previously described. Consequently he designated this irregularity nodal rhythm, thinking that it originated from the simultaneous contraction of both auricle and ventricle. This view, however, has not met with favor and has been generally abandoned, even by Mackenzie himself.

In this irregularity the pulse may present many variations. It may be fast or slow, averaging between 30 to 200, although the faster type is the more frequent of the two. The heart rate in the latter is double the normal, varying from 110 to 150, and presents a most disorderly character, for we see in the tracings an absolute irregularity and an absence of a definite and continued relationship between the strength of a beat and the length of the pause which precedes it. Many of the beats do not reach the wrist, so the radial pulse is but a poor index of the rate of the ventricular contraction. The electrocardiograms also yield specific findings.

5. *Respiratory Arrhythmia.* — By respiratory arrhythmia we refer to the arrhythmia which occurs as the result of vagal influence, in which we get a variation in the length of the diastolic period. It occurs in normal respiration when the pauses increase in length in expiration and decrease in inspiration. It may be experimentally abolished by section of the vagi or saturation with atropine. In children this type is the rule, and on this account it has been termed by Mackenzie the youthful or infantile type of arrhythmia. By a jugular tracing, the right auricle and ventricle show an irregularity similar to that seen in the radial pulse. It is a true intermission and disappears with an increased pulse rate. Pathologically it is seen in convalescence from acute fevers, in neurasthenia, in brain disease, and in meningitis, and may be recognized by the continually changing pulse rate, although the beats are the same.

6. *Alternation.*—In 1872 Traube described a condition which he termed pulsus alternans, in which we have large and small beats alternating, with or without a higher rate. It varies much in degree, so much so in fact that the smaller beats may be imperceptible in the arteriogram. According to Traube the interval separating large and small beats was greater than that separating small and large beats, but subsequently the incidence of the beats has been shown to be perfectly regular. This arrhythmia occurs in overtaxed healthy heart muscle, especially in paroxysmal tachycardia, and in hearts whose muscle has previously been seriously affected, being especially frequent in progressive fibrosis of the heart. It may also be produced by the injection of certain poisons (digitalis, antiarin —a closely allied body—aconitine, glyoxyl, and hemolytic serum), and is frequently accompanied by anginal pain. It indicates both structurally and functionally a precarious cardiac condition. Unfortunately its pathology is still wrapped in mystery.

These recent advances in our knowledge of cardiac irregularities, thus briefly outlined, promise much for our better understanding of them. We should all avail ourselves of this knowledge, for it will enable us to treat our patients with these functional difficulties more efficiently and intelligently.

4 Trinity Street.

SELECTION OF FEMALE RISKS IN WHOM HYSTERECTOMY AND OVARIOTOMY HAVE BEEN PERFORMED.*

By P. H. INGALLS, M.D.,

HARTFORD, CONN.

ASSISTANT MEDICAL DIRECTOR, THE ÆTNA LIFE INSURANCE COMPANY.

The improvement in modern surgical methods, and the wonderful results obtained in operations within the abdominal cavity, have been the means in recent years of admitting to the class of operable cases many persons who before were considered hopelessly incurable, and not only have these persons been successfully operated upon, but have been restored to health with all that this term implies.

We have considered at these meetings in previous sessions applicants from whom the gall bladder has been removed and have formulated ideas of what treatment should be accorded them in the field of life insurance applicants.

We are receiving applications, oftener than one would believe possible, from persons in whom one kidney has been removed and before long, experience will demonstrate to what extent their vitality and power of resistance has been lowered by the loss of that organ.

And we have also taken up and thoroughly discussed the subject of appendicitis, operated and not operated, and have been able to form definite ideas of what treatment should be accorded applicants in this class.

*Read at the twenty-third annual meeting of the Association of Life Insurance Medical Directors of America, October 10, 1912.

Operations on the female genital organs have for many years played a very important part in the field of surgery, and it is for a brief consideration of this class of cases that, at the suggestion of the president, I have ventured to submit this small contribution to the proceedings of this association.

For many years now I have been devoting my attention in private work to this class of cases and, while the whole field of gynecology is a very wide one and has no part in the questions which I intend to outline in this paper, I am going to ask your consideration of those applicants for life insurance on whom the operations of hysterectomy and double ovariotomy have been performed. When I began work in the life insurance field I found that my seniors promptly rejected all female applicants of this class, and reference to their applications shows that in many cases they had applied to other companies and had also been rejected by them.

The surgeons in our large centers who so often only see their cases just before operation, and as soon as their convalescence has been completed have them drop out of sight and go to their homes, scattered all over the country, have not as good an opportunity to observe the ultimate results of their work as those of us who operate in the hospital which draws its patronage from territory adjacent, and who have to follow up and look after the cases for a long time subsequent to their operation, and as for over twenty-five years I have been following this class of work in one of our smaller hospitals and have been able to see and live in a community with a fairly large number of this class of cases, I came to the conclusion that many women were being denied the privileges of life insurance who could safely be taken and would make good and profitable risks.

What are the undesirable features of this class of cases?

The most prominent characteristic, and the one which I think has been the greatest bugbear, is the disturbance to the nervous system owing to the fact that in all these cases we bring about a premature and forced menopause. True it is that this is an important condition and sometimes leads to distressing and even permanent nervous instability. The modern operation for hysterectomy in which the ovaries are left in position has relieved to a very marked extent this class of symptoms, while they still persist in the cases of double ovariotomy—but with the exception of a very small majority of cases these symptoms all disappear within a year or eighteen months after the operation. I can recall personally but one of my own cases in which any permanent nervous disability has resulted from the operation while, like every other surgeon with much experience in this class of work, I have had some rather disturbing manifestations within the first few months following the operation.

Malignant degenerations have not appeared in any of the cases where we were satisfied that such degeneration did not exist at the time of the operation.

Changes in other organs of the body have not been observed. The effect on the general health has been one of steady and gradual improvement and no fear need be had on that score.

Hernias are no more apparent than after any other abdominal section and need have no part in any objection to these cases by the time they are accepted.

Much was written in years past about the great changes in personal appearance, mental characteristics and changes in temperament as a result of the so-called unsexing of women. Gynecologists the world over have given this matter their painstaking and careful consideration, and I feel that I can say with great positiveness that this is an objection which need not receive any serious consideration, that no such condition is found to exist, and that it is not possible to pick out from any observable change in physical or mental characteristics those women who have had these operations performed. I have not attempted in this article to obtain any vast number of statistics from various operators, but from my experience in our special medical societies I know that my own experience is an average one and that statistics obtained from many operators as to the ultimate results would not change the results of my own observation. Neither have I asked for a tabulation of experience from other companies as to their results with this class of applicants. I have felt it would be fairer to state my experience and deductions as a basis to bring this matter before you for discussion, and maybe we will all be agreed on the general principles with which to regulate our selection in this class of applicants.

I must confess that when I went through the papers in our own office I was rather surprised that I did not find more of the cases on which to base my deductions, but I have tried to be careful in selection, as I will demonstrate later, and as a result a very small number appear on the books.

In the last ten years we have taken thirty-four cases which come under this classification. This does not include any cases of myomectomy or single ovariotomy, or plain removal of tubes, ventral fixations or suspensions. I have limited the observations here absolutely to those women in whom the uterus and ovaries—the uterus alone or the ovaries alone—have been removed.

We have twenty-three cases of double ovariotomy and ten cases of hysterectomy representing a total exposure in the thirty-three cases of 167 years. These exposures are subdivided as follows:

10 years	3 cases
9 "	2 "
8 "	4 "
7 "	3 "
6 "	4 "
5 "	2 "
Less than 5 "	15 "

Strange as it may seem, I find but one death in this class of cases, and as that was so manifestly a case of fraud and has so many peculiarities about it I will give that special consideration later on. It may be that the particular requirements which have been insisted on in accepting these cases has had something to do with the good mortality record, but I am not yet ready to advise any greater liberality in the acceptance of this class.

In the first place, we have taken all pains at our command to find out that no malignancy was suspected or found out in all the cases operated on.

Secondly, that no complications were found in the operative work.

Thirdly, that at least two years had elapsed from the time of operation until the acceptance of the risk, and that in that time there had been no evidence of any return of the growth or symptoms referable to the conditions, and that all symptoms, nervous or general, due in any way to the operation, had abso-

lutely disappeared, and naturally, we insisted that the applicant was up to the required standard in all other physical characteristics.

The one death which occurred in our series of cases presents to my mind enough of peculiar characteristics to warrant a brief outline of the circumstances attending the issue of the policy and the investigation of the death record.

This applicant was 49 years of age and applied for insurance May 16, 1911. She had had one child with normal labor in 1884 and had never miscarried. The medical examiner made statements that eight years before he had performed a complete hysterectomy for fibroids. The recovery was complete and she had enjoyed the best of health since the operation and he had kept the case under observation personally. She was accepted and the policy was issued June 12, 1911. On October 11, 1911, she died and the certificate of death, from a neighboring town, gave the cause of death as cancer of the uterus and the duration of the illness three months. I immediately wrote to the doctor who examined her and he said she had been under his observation and always had told him that she had been in good health, and distinctly told him at the time he examined her for insurance that she had been in good health and was in good health on that date.

By various tracings of her proceedings in the year previous we unearthed the fact that she had applied for admission in July (two months after taking her insurance) to one of the large hospitals where she gave a history that six years following the operation she had pain in the lower abdomen. One year before, *i.e.* July, 1910, she had to wear a napkin on account of the discharge, and six weeks before that, *i.e.* early in June, had a hemorrhage from vagina and was admitted with diagnosis of cancer of cervix and bladder wall.

Subsequent investigation showed that she had put herself under treatment for pelvic discharge and pain in November, 1910, and that the doctor who treated her did not tell her that he suspected cancer although he affirms that he did inform her husband of the fact.

This was so evidently a case of fraudulent representation that our adjuster had no difficulty in denying the claim, and a compromise was made for a very small sum.

This case would seem to indicate that the general rules we have been following in the selection of these risks would not stand the test of time, but it is sufficiently peculiar and out of the ordinary to be classed as a notable exception. In the first place, I do not recall any case in my operative experience where malignant disease appeared at so long an interval after the operation, and I am forced to believe that she might have had cancer any way. In all my work where cancer has been found or suspected all returns have been noted within eighteen months—and in the second place, this applicant was so crooked in making her application that we might have been deceived at any date subsequent to operation. This is one of the risks every company runs in dealing with applicants who are willing to make fraudulent statements to procure insurance.

The matter then resolves itself into the question: Can we safely write these risks and under what circumstances? I believe we can if we follow out a few simple rules.

1. A sure and accurate knowledge that no malignancy was expected or found at the time of operation.

2. That the operation did not reveal any abdominal or other complications existing.

3. That sufficient time has elapsed—at least two years—to be sure that all nervous and physical disturbances as a result of the operation have entirely disappeared.

4. That the applicant is up to our required standard in all other respects.

This may involve some correspondence and special investigation concerning each application. The number of cases is bound to be small, and will make no large difference in the volume of the business written, but my point is,—cannot we grant to these women desired insurance without running any greater risk than we do in many other classes now accepted by us?

SACRAL KIDNEY SIMULATING ACUTE APPENDICITIS.

By M. S. KAKELS, M.D.,

NEW YORK.

ATTENDING SURGEON TO LEBANON HOSPITAL, CONSULTING SURGEON TO ROCKAWAY BEACH HOSPITAL.

While anomalous situation of the kidneys must be considered of moment to the general practitioner, and especially to the surgeon when making a diagnosis or operating for some obscure tumor in the abdominal cavity, a congenital misplaced kidney must still be regarded more or less as a curiosity. Although recent literature records numerous cases of anomalies in number, form, and size one does not see reported many cases of dystopia of this organ.

Formerly most of the anomalies were discovered only after death, but now that operations upon the kidney are of more frequent occurrence more instances are being observed and therefore more interest has been shown in the subject from both the surgical and from the pathological standpoint. From the literature of the cases reported one learns the fact that a misplaced kidney seldom gives rise to serious symptoms and generally escapes observation during life, and therefore is rarely diagnosed.

Most frequently, if not attended by mobility and not encroaching on important neighboring organs, an abnormally situated fixed kidney is discovered only accidentally in making a physical examination of the abdomen. Furthermore, when a fixed displaced kidney does give rise to symptoms it does not as a rule point to the displaced organ, but generally to the neighboring organs upon which it may lie. Grave symptoms and serious complications may arise especially when pressing upon the bladder, rectum, or uterus.

Munroe (*Boston Med. and Surg. Jour.*, 1910) relates of having seen four cases of renal ectopia, in none of which were the symptoms referable to the urinary tract. One of the cases was discovered at an operation for acute appendicitis.

The more pronounced displacements are rather rare, and when anchored in the iliac fossa or situated on the promontory of the sacrum are most likely to cause serious complications. Especially in females, when lying over the sacroiliac synchondrosis, are they apt to cause error in diagnosis for the reason that they are readily mistaken for a pelvic or abdominal tumor arising from the genital organs.

Of the frequency of misplaced kidney Henry

Morris states that "out of nearly 13,000 post-mortems there were found 13 instances of misplaced kidney, thus averaging one out of every 1,000 bodies examined." The peculiarities in the origin, number and distribution of the blood-vessels, and the course and length of the ureter, as is found in these fixed malpositions, favors the theory of the congenital nature of the displacement.

As the renal ectopia is a condition which takes place prior to birth, during the process of fetal development, the presumption is that the gland does not ascend but becomes fixed in its abnormal situation owing to the shortness of the ureter and vessels, although the latter (blood-vessels) have been found of normal length in some instances, when springing from the aorta and not from the iliacs. Thus anchored in its position it does not become unduly movable. If not submitted to undue pressure from neighboring organs, and there is no interference with its blood supply and no impediment to the escape of urine, the natural conformation of the kidney is preserved, but on the other hand any interference or impediment to the vessels or ureter or any undue pressure upon it during the progress of growth may cause a malformation of the organ to ensue.

Newman in his "Monograph on Movable Kidney and Other Displacements and Malformations," classifies displacements of the kidneys without mobility into (1) congenital displacements without deformity, (2) congenital displacements with deformity and (3) acquired displacements.

Morris ("Surgical Diseases of Kidney and Ureter") states that "fixed displaced kidneys have seldom been diagnosed *intra vitam*, as they rarely give rise to symptoms or even inconvenience during life."

Ectopic kidneys have frequently simulated many other conditions in the abdomen and given rise to errors in diganosis and disagreeable surprises. Because they are so frequently mistaken for abdominal or pelvic tumors, the surgeon, gynecologist, and obstetrician may be brought face to face with unexpected obstacles. One can readily imagine the varied complications of diagnosis which a diseased kidney placed in an anomalous position might give rise to, and furthermore it is plainly evident that such complications would be greatly increased if the right kidney should be so anomalously situated.

Hochenegg (*Wiener klinische Wochenschrift*, 1900, No. 1) reports a case of an obscure tumor pressing upon the rectum, causing for many years obstinate constipation and distress with psychic disturbance, the true nature of which was only revealed at operation (by the sacral route) as a congenital dystopia of the kidney.

Israel ("Nieren Chirurgie," 1901) diagnosed a resistant mass in a woman, producing pronounced intestinal symptoms, as an ectopic kidney. This mass, from the symptoms and the physical signs, had been previously diagnosed by others as a carcinoma of the cecum. This case is, so far as the casual perusal of the literature shows, the first one correctly diagnosed *intra vitam* before operation.

Cragin (MEDICAL RECORD, 1898) reports a case of vaginal nephrectomy for a congenital pelvic kidney obstructing the parturient canal which had in previous confinements been the cause of dystocia.

That an ectopic kidney should simulate an acute attack of appendicitis is rare and unusual, although Newman (*Scottish Med. and Surg. Journal*, Vol. I, No. 1, p. 53) reports a case of fixed displacement of the right kidney above Poupart's ligament simulating a perityphlitic abscess. "The patient was admitted to the Glasgow Royal Infirmary in 1894, complaining of pain in the right iliac region with a previous history of pain with more or less persistence since 1890. He noticed a swelling in the abdomen about seven months before admission to the hospital. There was a slight fullness of the abdomen in the right iliac and lower lumbar regions and a rounded swelling was felt. It appeared to be fluctuant. There was dullness on percussion over an area of about two inches in breadth running parallel with Poupart's ligament. The swelling was cut down upon and as soon as the muscles were cut through the sense of fluctuation was lost. The incision was then enlarged, when the swelling was found to have a rounded outline with a distinct hilum toward the inner and upper aspect, and being semielastic but firm immediately suggested a displaced kidney.

In a casual search of the literature of reports of true ectopia of the kidney I have found no instance in which the displaced organ simulated, from the objective and physical signs, an acute attack of appendicitis. I feel, therefore, prompted to place on record the following case which came under my observation, especially as it illustrates an unusual error and a rare form of ectopia of the kidney. Furthermore, the report of the case may put others on their guard when dealing with an indefinite abdominal mass.

Sadie J., age 19, born in Italy, married two months, was admitted to my service in the Lebanon Hospital on the evening of June 19, 1912, with the following history.

Four days before admission she was seized with general abdominal pain, cramp-like in character, and radiating toward the right side. There was constipation, but no nausea or vomiting. The following day the pain localized itself to the right iliac fossa, where it remained, increasing in severity till the time of admission to the hospital. She had been having chilly sensations since the beginning of the attack. Her past history had no bearing on the present condition. Her menstruation was regular, without pain, the flow lasting four days; the last menstruation was eighteen days ago.

Her family history was negative. The patient looked acutely ill. The head and chest revealed nothing abnormal. There were marked rigidity and tenderness over the whole of the right side of the abdomen, and an indistinct mass, tender to pressure and intolerant to careful manipulation, was palpable in the right iliac fossa. Nothing could be felt per vaginam. The temperature was a little less than 101°, pulse 96, respiration 22. The blood count showed: White cells 14,800, polynuclears 73 per cent. The urine showed a trace of albumin, few epithelial casts, no blood, no sugar; in fact, nothing in the urine to give a clue as to the diagnosis.

The clinical picture and subjective symptoms of sudden colicky pains extending over the entire abdomen and radiating to the right side, in conjunction with the other signs such as rigidity and an indefinite mass, tender on pressure and intolerant to careful palpation, led us to believe we had to deal with a case of acute appendicitis.

Accordingly the patient was submitted to operation. A Kammerer incision was made, and only after the abdomen was opened and a slightly congested appendix removed was the true nature of the mass revealed. By pushing the coils of intestines

aside a retroperitoneal mass was exposed to view situated over the right sacroiliac synchondrosis a little to the right of the median line. An incision into the posterior parietal peritoneum was made when the kidney was recognized fixed, congested, rather small in size, with its hilus directed toward the median line and apparently not diseased. Exploration in the abdominal cavity with the hand showed that the right kidney was not present in its proper site, but that the left kidney was. We thus had to deal with a sacral kidney.

The condition of the patient precluded any further dissection of the ectopic organ in order to demonstrate the nature of the vessels and ureter, although the pelvis of the kidney was not felt to be enlarged. Consequently the organ was left *in situ*.

The posterior parietal incision was sutured with a runing catgut suture and the abdomen closed without drainage. The patient made an uneventful recovery, with no rise of temperature, and was discharged July 1, 1912, twelve days after her admission.

The history and the symptoms were the usual ones that pointed to an acute attack of appendicitis; consequently, this rare and unusual error in diagnosis affords considerable interest and is, to say the least, instructive.

Taking into account the rarity of sacral kidney and all the evidence at hand the error in diagnosis was excusable. A subsequent careful inquiry elicited the fact that the patient suffered from a slight frequency of urination before she entered the hospital. This may have some bearing upon the cause of the symptoms which simulated an attack of appendicitis. Other than this acute illness the patient was never cognizant of the fact that she had a mass in her abdomen, nor did she suffer any inconvenience from the location of the same. Only after the operation was she made aware of the existence of an abnormally situated kidney.

We do not presume to be able to explain positively the pathological condition of the kidney which produced such symptoms as were evidently mistaken for appendicitis, as a free exposure of the kidney at the time of operation was not made. We can only conjecture that the patient may have had a renal colic in an ectopic kidney, due to calculi, with an acute congestion of the kidney with reflected pain and spasm of the abdominal muscles and rigidity of the same. This surmise may be more than reasonable and not seem so strange when one considers how often the passage of a calculus through the ureter from a normally situated kidney, especially on the right side, has been mistaken for an acute attack of appendicitis.

The recording of this case may cause one to bear in mind, in diagnosing acute abdominal conditions, the possible existence of an ectopic kidney.

71 East 66th Street.

THE POST-OPERATIVE TREATMENT OF LAPAROTOMY, WITH COMPLETE WOUND CLOSURE.

By RUSSELL S. FOWLER, M.D.,

BROOKLYN, N. Y.

CHIEF SURGEON, FIRST DIVISION, GERMAN HOSPITAL OF BROOKLYN; SURGEON, METHODIST EPISCOPAL HOSPITAL OF BROOKLYN.

General Considerations.—The post-operative treatment of all acute abdominal conditions and many chronic ones begins when the patient is first taken ill, and consists in early recognition of the possible need of surgical intervention and the intelligent pre-operative treatment of the condition. This is particularly true in perforations and acute infective processes. The so-called operative mortality can be very materially lessened by the observation by the medical attendant of a few simple rules. In acute conditions of the abdomen all feeding by stomach is contraindicated. Nothing, not even water, should be given, for the reason that the ingestion of anything in the stomach results in peristalsis with its accompanying spread of whatever infection is present. However, the tissues must not be deprived of water, as the possible operative procedure might otherwise have a disastrous effect upon the general metabolism. *Fluid* is given by rectum either by slowly administered, frequently repeated enemata or by the Murphy proctoclysis or, in urgent cases, by hypodermoclysis. Morphine must be withheld until a diagnosis is reached. If these three rules are followed out, an earlier diagnosis is possible and if a surgical operation is indicated the patient is in the best possible condition for it.

The general after-treatment of operations on the abdomen differs but little from the after-treatment of operations in general. The difference depends upon two or three underlying principles which, if understood, simplify the after-treatment to a great extent. Removal of a patient from the operating table to the bed is done with the usual care that no additional injury be inflicted or strain put upon the operated part. The treatment of shock is as for other operations and the treatment of the wound itself is as for wounds of a similar nature in other parts of the body. It is to be noted, however, that kidney complications and lung complications occur more frequently after laparotomy than after operations on other parts of the body, and that shock is a more frequent complication. For these reasons it is best to give saline solution by the rectum following all laparotomies. Either repeated enemata or the Murphy proctoclysis may be used.

Our knowledge of these cases has so increased of late years that the three main complications, shock, nephritis, and pneumonia, are rarely met with. With care in the preparation of patients, with the anesthesia, and with proper technique and speediness in operating, they will become less and less common. In former years the complication of intra-abdominal hemorrhage and of postoperative intestinal obstruction and peritonitis in various forms were the commoner complications. Nowadays, because of earlier diagnosis in inflammatory lesions, better technique at the operation and of increased care in the handling of tissues these complications are seldom met with.

The lesser complications of vomiting and distention are still frequent, but not so common as formerly. Careful anesthesia precludes the one and an efficient preoperative preparation excludes the second in most cases.

Given a *clean laparotomy* in which no operation has been done upon the intestinal canal and in which the abdominal wound has been properly made and sutured, the after course should be as uneventful as an operation upon any other part of the body. Irrespective of what operation has been done intra-abdominally there is usually no complication. The postoperative treatment is the same as in operations elsewhere. The patient is kept quiet for twenty-four hours or until the anesthetic

nausea has ceased and may then sit up or be propped up in bed. Wound quiet is maintained by the use of a tight-fitting abdominal bandage of adhesive plaster after the method of Boldt, reenforced by a snug fitting abdominal binder. The intraabdominal pressure acts in conjunction with the extra abdominal support to maintain rest of the wound. Abdominal tension is relieved by placing pillows beneath the knees. The period of rest in bed depends almost entirely upon the patient's general condition. If the patient has lost a large amount of blood at the operation, or is anemic from long-continued illness, general conditions which affect wound healing, it is best to keep him quiet in bed until such time as the blood examination showed rapid improvement in the blood condition. It is well known that wounds in anemic persons do not heal with the rapidity of wounds in robust persons. Such a wound would need support and rest for a longer time. Barring this complication, however, there is no reason why such patients should not be allowed up in bed at the end of twenty-four hours, out of bed in a chair in two or three days, and to take a few steps on the following day. The size of the wound does not contraindicate this, providing the wound has been suitably made and sutured and properly supported to insure rest. In hundreds of laparotomies treated in this manner I have not had one untoward symptom. In fact, convalescence has been hastened and wound repair made more rapid. If infection occurs it will occur irrespective of the position of the patient. Should infection occur it is treated on general wound principles and the patient is kept in bed until the infection has cleared up. When the wound has reached the condition when it can be strapped the ambulatory treatment can again be initiated.

Diet in this class of cases should be brought as rapidly as the condition of the stomach will permit to the normal diet. For the first twenty-four hours the diet is as in all postanesthesia cases; following this the diet is rapidly increased. It is to be remembered that the stomach is in a weakened condition following the use of any anesthetic and that feeding must not be forced. Nor should the ingestion of large quantities of fluid at one time or at frequent intervals be allowed, as this is apt to result in a dilatation of the anesthetic weakened stomach.

Bowels.—The bowels should be moved daily for the first few days by a copious enema of soapsuds and water. After the first few days some form of pill may be given, preferably containing aloin, belladonna, and strychnine in just sufficient doses to produce evacuation without purgation. Distention is not apt to occur in these cases except in debilitated subjects or in elderly people, or in cases in which very large intra-abdominal growths have been removed. In such cases distention is carefully watched for and its relief by enemata initiated before great distention has occurred. In the case of large growths a preventive consists in filling the abdomen with saline solution after removal of the growth. In this and in the other two cases mentioned above the distention is due to a paretic condition of the intestine. Of all the drugs which act in this regard atropine is the best. Atropine sulphate gr. 1/50 given hypodermically will aid in toning up the afferent intestinal nerve impulses. Opium or any of its derivatives should be avoided in these cases. If the distention does not subside following an ordinary enema of soapsuds and water an efficient enema is one quart of warm water in which one ounce of alum has been dissolved. This enema will succeed in bringing away the gas unless paresis is complete or unless a mechanical obstruction exists.

Pain in the first few hours following the operation is due to distention or to the traumatism inflicted at the operation, either to the wound itself or to the retraction of the abdominal muscles during the operation. In the former event the pain is relieved by enema; in the latter event one dose of one-quarter of a grain of morphine may be administered hypodermically. One does not like to use morphine because of its after effect in favoring intestinal distention. If, however, the enema fails to relieve the pain one-quarter of a grain of morphine sulphate and 1/150 gr. of atropine sulphate may be given. This dose should not be repeated except in rare instances.

Operations upon the gastrointestinal canal should be treated as above except as regards diet and catharsis. In general it may be said that following intestinal resection, repeated small doses of magnesium sulphate, one dram of saturated solution every hour or two may be given in order that the contents of the intestinal canal may be kept liquid and that impaction at the site of the Murphy button or suture line may not occur. Active cathartics should not be administered before the ninth day, at which time intestinal wound healing is complete. Intestinal wounds are supported for the first three days by the sutures; on the third to the fifth day, which is the weakest time, the sutures loosen somewhat and the parts are held together by weak union; from the fifth day on the union is firmer, until by the ninth day it is complete. During this period no cathartics should be administered which will act in a forceful manner on the musculature of the intestine. Following appendectomy, on account of the nature of the intestinal wound, this rule is not so important; it is a good plan, however, to employ enemata for the first ten days even in these cases. The diet should not be forced in intestinal resection cases but the patient should be kept on fluid and farinaceous diet until the ninth day.

Posture in Operations upon the Upper Abdomen.—Following all operations upon the upper abdomen, if the patient is placed in the semi-sitting posture or in the elevated head and trunk posture a smoother after course will be noted than if the patient is kept flat. There is distinctly less reaction following the operation, the stomach emptying itself more easily into the intestine, breathing is easier, pulmonary complications are not so frequent, and the patient is very much more comfortable.

301 DeKalb Ave.

MISTAKES IN THE DIAGNOSIS OF TYPHOID FEVER.*

By CHARLES EDWARD NAMMACK, M.D., LL.D.,

NEW YORK.

VISITING PHYSICIAN TO BELLEVUE AND TO ST. VINCENT'S HOSPITAL; PROFESSOR OF CLINICAL MEDICINE IN CORNELL UNIVERSITY MEDICAL COLLEGE AT NEW YORK.

THE average patient expects a physician to make a correct diagnosis of his ailment at the first professional visit. The younger the physician the more insistent is this demand, and an honest acknowledg-

*Read before the Williamsburgh Medical Society October 14, 1912.

ment by the doctor of his inability to comply with the demand at this time often results in his involuntary retirement from the case. An older physician may be pardoned for his honesty and permitted to continue his observations, especially if he is one of the diplomatic brethren whose clients are frequently told that they are "threatened" with a serious disease. When the "threatened" calamity does not subsequently develop, its defeat is then attributed to the superior methods of treatment adopted. But typhoid fever, at its outset, is so protean in its manifestations, and shows so many variations in its symptoms and course, and is simulated by so many different febrile and inflammatory affections that its immediate diagnosis at the bedside may be impossible. It is only by keeping its possibility always in mind that the chances of overlooking it, of mistaking it for other diseases, or of mistaking other diseases for it, will be minimized. The typical text-book case will usually be promptly recognized, but the typical case is usually found in the text-books rather than at the bedside. A recital of some of the mistakes, my own as well as those of others, that I have encountered, may serve to fasten the differential points in your memory as they have in mine. Many of these mistakes would not occur in a well-equipped hospital with excellent laboratory facilities, but we have not yet become sufficiently paternalized in this country to be able to afford to relinquish all our typhoid patients to the care of the well-endowed hospitals and laboratories. The careful clinical observations of a qualified practitioner, corroborated by the simpler laboratory blood tests and blood counts which every recent graduate is taught to make, will steer us aright in most cases. It is only their neglect which serves to emphasize the truth of the old remark, that nine-tenths of the mistakes in differential diagnosis are made by not looking, and only one-tenth by not knowing. Blood cultures, which need an elaborate laboratory equipment, are rarely necessary. The Widal reaction, available after the seventh day, and the differential leucocyte count, available on the first day, will furnish all we ought to ask—data to disprove the existence of most of the simulating diseases. Given the general picture of a febrile infectious disease, there are only six acute infections in which leucocytosis is absent, to wit: malaria, typhoid fever, influenza, measles, mumps, and leprosy. To these may be added most cases of uncomplicated tuberculosis, except the meningeal form. Let us consider some differential points.

1. *Tuberculosis.*—Acute miliary tuberculosis may present all the symptoms and signs of typhoid fever, even including the rose rash. But the respirations will be more frequent, the pulse will be proportionately rapid instead of proportionately slow and dicrotic, cyanosis will be more apt to appear, the abdomen may be flat instead of tympanitic, the temperature will be irregular instead of definite in type, phonophobia and photophobia will be notable, petechiæ may be present instead of rose spots. Widal reaction will be wanting, and a tub bath will produce a greater drop in the temperature than 2° F. A case in Bellevue Hospital at present also shows tubercles in the choroid, but this is very rare. Lumbar puncture may show tubercle bacilli in the spinal fluid.

2. *Malaria.*—In the past the term malaria has covered a multitude of diagnostic sins, but the present generation hears less of "typhomalarial fever" or "bilious remittent fever" than we did thirty years ago when hematology was an infant science. Still, estivoautumnal fever, with its continued temperature, its septic aspect, and the difficulty of finding the crescents in the peripheral blood, may keep us guessing for some days. At St. Vincent's we get many seafaring men from Southern ports with the estivoautumnal type of fever and are on the watch for it. But it may arise also in our latitude. I have seen cases that originated on the shores of Jamaica Bay, in the Borough of Queens.

3. *Typhus Fever.*—The sporadic cases of typhus fever that we see in this vicinity are of the attenuated type, so well described recently before this society by one of your members. It seems to be more prevalent among certain of your neighbors than with us across the Williamsburgh Bridge. I have seen but two cases in Bellevue in the last two years and none in St. Vincent's. It is easily recognized when once known.

4. *Septicemia.*—Originating after labor or after abortion, this condition is often miscalled "typhoid fever," especially by that class of practitioners who have "never lost a woman after confinement." Leucocytosis and an increase in the polymorphonuclears will assign the proper label to this condition. A fatal case of gonorrheal septicemia with ulcerative endocarditis, occurring in a young man with old rheumatic simple endocarditis, was sent into our wards at Bellevue with a diagnosis of typhoid fever, but leucocytosis suggested and blood culture proved the actual conditon. An additonal reason, if any were needed, why young people with chronic endocaditis should avoid tacking on an acute gonorrheal infection.

5. *Endocarditis.*—As in the supervention of gonorrhea, the addition of typhoid bacilli to the circulating blood of a patient with old endocarditis renders the liability to ulcerative lesions of the heart lining very grave. An undamaged endocardium usually resists their invasion.

6. *Influenza.*—Many cases of influenza are so typhoidal in their aspect at the onset that only the subsidence of the influenzal symptoms in a few days dispels our anxiety. Some cases may require a blood culture to decide.

7. *Febricula.*—Many of the cases of short continued fever formerly classified under this head and some of the so-called "gastric fever" cases would now be demonstrated by the Widal reaction to be mild forms of typhoid.

8. *Intoxication.*—The various autointoxications which for want of more definite knowledge we regard as ptomaine poisoning can usually be differentiated by their suddenness of onset, the violence of their initial symptoms and their reference to an obvoius dietetic indiscretion.

9. *Osteomyelitis.*—A case seen by me was that of a young man who, suffering from a crop of boils, worked at a hand drill all the week, pitched baseball on Sunday, and was taken ill with chill, sweats, high fever, and pain referred to the shaft of the humerus. He was treated four days for malaria, three days for rheumatic fever, three days for typhoid fever, this by four different physicians. The leucocyte count was 26,000 with 89 per cent. polymorphonuclears, and trephining the shaft of the bone at St. Vincent's Hospital confirmed my diagnosis. This case had almost become one of the tragedies resulting from "not looking." Osteomyelitis has been called "bone furunculosis." It is one of the diseases we should always think of in childhood and adolescence.

10. *The Acute Exanthemata.*—Measles, scarlet fever, and variola will soon clear up their own diagnosis and need no description here.

11. *Trichinosis.*—Cases of trichinosis are frequently sent into hospitals with a diagnosis of typhoid fever. Leucocytosis with abnormal eosinophilia will point the way to, and excising a piece of muscle will establish, the correct diagnosis.

12. *Syphilis.*—Secondary syphilitic fever with macular eruption will not be mistaken when associated with sore throat and adenopathy. The absence of the Widal and the presence of the Wassermann reaction will decide the doubtful cases.

13. *Cerebrospinal Fever.*—Leucocytosis and the results of lumbar puncture have recently placed the diagnosis of this condition on much firmer ground. In my earlier days mistakes were common. The same diagnostic procedures will be of much service in the recognition of other forms of meningitis and also in a variety of diseases with nervous manifestations in which fever with more or less stupor are prominent features.

14. *Pulmonary Conditions.*—The initial bronchitis of typhoid fever may be so severe as to concentrate our attention on that condition. Or typhoid may set in with an unmistakable attack of acute lobar pneumonia which may entirely overshadow, or even obliterate, the usual low leucocyte count and slow pulse of typhoid. No amount of care will save us from this mistake, if it can justly be so called. The term pneumotyphoid should not be used for these cases.

15. *Abdominal Conditions.*—An Italian suffering from typhoid fever was admitted to my service in Bellevue who was seized in the middle of the night with violent gastroenteritis after a supper into which green peppers had largely entered. He had been treated for five days by a physician of his own nationality for appendicitis. This was a pardonable error with the given history of sudden onset and violent symptoms. The first typhoid patient of my own upon whom I had mistakenly advised an operation for appendicitis caused me considerable chagrin, although I had only sustained the diagnosis of a man of sufficient experience to be chief of clinic at a college dispensary, and we had both been sustained by the operating surgeon. Study of the literature lessened my shame, when I found that the same error had been often made by the best surgeons. Richardson of Boston emphasizes the most important differential point, to wit: *Muscular rigidity is wanting.*

16. *Renal Conditions.*—A young policeman came to my office one evening complaining of headache, dimness of vision, and scanty urine. I had incised a suppurative tonsillitis for him ten days previously. His urine presented the characteristic physical, chemical, and microscopical evidences of acute desquamative nephritis, and he was sent to Bellevue with that diagnosis. He afterward ran the typical course of typhoid fever. This was one of the so-called nephrotyphoid cases.

17. *Varieties of Typhoid.*—As stated at the outset, age cannot wither nor custom stale the infinite variety of typhoid, and he who studies his typhoid cases attentively will not only acquire a fund of knowledge regarding the working of the acute infections in general, but also a knowledge of the sanitary intelligence of the community in which he resides. Cases may be classified as the malignant, which are usually fatal from cardiac degeneration, severe toxemia, or intestinal hemorrhage and perforation; the mild, which are only dangerous in so far as they may be the means of communicating the disease to others; the ambulatory, which are dangerous to themselves because of their marked liability to hemorrhage and perforation; the hemorrhagic, by which is meant those in which bleeding occurs from various parts of the body, and of which the majority of cases die; the afebrile, which I have never seen; the obese, who, as a rule, do badly.

18. *Paratyphoid Fever.*—The diagnosis of this condition is made only in the laboratory. Symptomatically, diagnostically, or therapeutically, it does not differ from ordinary typhoid, and it need not cause the working practitioner any more doubt or delay than does the particular organism producing a felon on the finger, whose quietus he knows that he can make with a bare bodkin, without calling in a laboratory man to identify the germ.

42 East Twenty-ninth Street.

A NEW GASTROESOPHAGOSCOPE.

By JULIUS LONDON, M.D.,

NEW YORK.

ADJUNCT VISITING GENITOURINARY SURGEON BETH DAVID HOSPITAL; GENITOURINARY SURGEON, O. P. D., LEBANON HOSPITAL; ASSISTANT GENITOURINARY SURGEON, O. P. D., MOUNT SINAI HOSPITAL.

In this article I desire to describe a new gastroesophagoscope which I have devised. It consists of three major parts. The outer sheath is simply a straight, round, metallic tube, 23½ inches long and one-half inch in its internal diameter. It is beveled at its distal end and flattened in one diameter so that the distal opening is oval instead of round, as the proximal one is. This tube is used as an introducer for the other parts, but can also be used as a direct esophagoscope with an external source of illumination, such as a head reflector or a handle reflector, as in the Bruning apparatus.

The middle sheath is oval in shape and 26 inches long. At the proximal end of this sheath are attached two cocks for distention of the stomach and a catch for electric connection. At the distal end of this sheath is a cluster of lights for illumination of the entire horizon and a terminal rubber tip, which acts as an introducer into the pharynx, esophagus, and stomach. The distal end, just described, is connected to the main body of the middle sheath by two slender rods which carry the electric connections.

The inner tube contains the optical system. This is composed of a straight telescopic system and my objective lens, which is placed in front of the telescope and connected to it by two slender rods.

This objective is made in two forms, one the biconvex lens and the other the perfect sphere. One-half of this lens is silvered, the unsilvered portion being nearer the telescope, so that rays of light reflected from the mirrored surface can enter the telescope and be conveyed to the eye. This spherical objective has an angle of vision of 150° in water and 100° in air and it shows the entire horizon in the same field without any rotation of the instrument. This objective has a practical marking near its point of one-quarter of an inch.

763 East One Hundred and Fifty-sixth Street.

Acquired Hemolytic Icterus.—Oulmont and Boidin report a case of this condition presenting the well known clinical and hematological phenomena. Syphilis seemed to be the important etiological factor. A striking manifestation in this case was the marked diminution in the amount of cholesterin in the blood.—*La Presse Médicale.*

MEDICAL RECORD.

A Weekly Journal of Medicine and Surgery.

THOMAS L. STEDMAN, A.M., M.D., EDITOR.

PUBLISHERS

WM. WOOD & CO., 51 FIFTH AVENUE.

See fourth page following reading matter for Rates of Subscription information for Contributors and Subscribers.

New York, December 21, 1912.

VACCINE VIRUS.

IT is strange that the exact form of the germ or poison of smallpox remains unknown, because it, that is the virus, was the first to be used to produce artificial immunity. In the century and a half just passed only two important advances have been made in the methods for obtaining immunity to smallpox. The first was made with the discovery by Jenner in regard to cowpox: this led to an entirely new method which superseded the previous method of direct inoculation with smallpox virus. The second advance, made in a negative way, came with the control of the production of vaccine virus by excluding as far as possible the admixture of other pathogenic germs and the attenuation of the thousands of extraneous germs which are present by exposing them to the action of glycerin for a certain period.

As to the details of the method of vaccination itself and the after-treatment we have not even kept abreast of Jenner if we accept the general practice throughout this country as a criterion; for it does not seem to be generallly known that a single scratch is sufficient for inoculation and that it is perfectly proper on the fifth day when the vesicles appear to apply any of the mercurial ointments just as Jenner did, and thereafter to treat the local inflammation with a view to curing it. From the widespread practice of permitting vaccination shields there would seem to be a general deep-rooted conviction that vaccinia must run its course undisturbed. Such a conviction is not founded on the fullest knowledge of vaccinia, and the practice of leaving the vesicles exposed to infection is the cause of most of the secondary inflammations which have been the real source of developing antagonism to vaccination, on the part of a large portion of the laity.

This antagonism, together with ordinary neglect, has permitted the occurrence of epidemics of smallpox. Every step toward preventing such occurrences is to the honor of medicine; especially any attempt to perfect the method and to remove the dangers of vaccination. Recently Teissier, Duvoir, and Gasinel (*Journal de Physiologie et de Pathologie générale*, Vol. XIV, No. 5, 1912) report the results of experiments with vaccine virus introduced into the system by different routes. These experimenters used rabbits. Some of these they inoculated intravenously. By this method they always succeeded in obtaining the development of immunity to subsequent epidermal inoculations. Others were inoculated by subcutaneous injection, intraperitoneal injection, or the administration of the virus by the digestive tract. By all of these methods immunity was developed and in no case was there a generalized eruption. When the virus inoculated in the peritoneal cavity was placed within collodion sacs, the immunity was slower in its developing and much larger doses were required for its production.

Although these results are very striking in experiments upon animals, the authors are of the opinion that they are of only experimental value and conclude in recommending the epidermal as still the method of choice. We have noted their results as they serve to emphasize that much of the diagreeable part of vaccination is due to extraneous infection. It is to be hoped that research along this line will be continued until some material advance over the crudeness of vaccination as new practised is reached. No other infectious process is so accessible to research students, and much work has been done in studying the morphology of the lesions and the biological properties of the virus. The fact that the latter resists some of the ordinary antiseptics, passes through a filter, and acts in extreme dilutions has caused it to be regarded as of the nature of an enzyme by some students, while others have explained its properties by regarding it as a protozoan. Life-cycles have been described for the Guarnieri bodies, the cellular inclusions found in the corneal cells of the rabbit's eye when inoculated with vaccine virus, and for parasites as small as the *Chlamydozoa* of Prowazek.

THE ESTHETIC ASPECTS OF MEDICINE.

IT was Socrates who taught that beauty is one with utility. Whether or not modern philosophers agree with this conception, there can be little doubt that beauty is incompatible with disease. The human form which has appealed to both the plastic and the graphic arts as the highest type for representation depends for its perfection upon the maintenance of health. Whether the artist's ideal is one of strength or of grace, of symmetry or of agility, it is certain that none of these attributes can be delineated apart from the normal organism. If the physicians' highest aim is the guidance of the individual in the preservation of health, then the former becomes, if not the artist, at any rate the honest servant of art.

In spite of the truth of the above statements, it must be admitted that some of the sublimest phases of art that were the product of subtle flights of the imagination were nevertheless the offspring of minds that were not entirely normal. The sparkling reveries of De Quincey or of Coleridge betrayed the narcotic influence of opium, and the enchanting romanticism of Keats or of Stevenson evinced the stimulating effects of tuberculous toxins. These and other instances provide the exceptions that prove the general rule that health and beauty are almost equivalent terms.

In his recent work on "Conduct and Its Disorders" Mercier states that "from the point of view of pure biology—of the preservation of the stirp—the appreciation of beauty, and the considerable department of conduct that is based upon, and prompted by, the appreciation of beauty are not easily explicable. Grace of motion, indeed, means ease of motion. It implies complete and efficient mastery over the movements, so that the maximum of effect is produced with the minimum of effort; and it is clear that this is biologically advantageous. *Cæteris paribus,* graceful movement is economical movement.

"We recognize form by ocular movements, and the application of the term 'graceful' to form as well as to movement rests upon an inarticulate, unexpressed recognition, that the appreciation of both is at bottom the same. Esthetic conduct is no exception to the rule that all conduct is ultimately based upon the motive of reproduction of the race. The earliest glimmerings of esthetic conduct in the human race are exhibited in personal adornment for the attraction of the opposite sex, and whatever esthetic conduct is exhibited in the lower animals, whether in the decoration of their haunts by the bower birds; in the display of their adornments by birds of beautiful plumage; in the exhibition of brilliant colors, or graceful movements or attitudes, by other animals; all are limited to the period of courtship if they are not confined to the actual pursuit of courtship. Esthetic conduct actually owes its origin, in fact, to the motive of sexual attraction, and is the earliest, as it is the most efficient, means of purging the approaches of courtship of their grosser elements or signification and elevating the whole process to a higher plane. Once the value of beauty and the love of beauty as aids to the fundamental function of courtship are established, in process of time beauty becomes, by anticipation of motive, an end to be pursued for its own sake."

One cannot overestimate the importance of certain esthetic details in the physician's *entourage* that contribute an appreciable share to his efficiency. The personality of the doctor should provide the pleasing combination of strength and refinement, of dignity and condescension. No other calling demands from its votaries such studied attention to the correctness of dress and of manner. The person who is ill is more susceptible than any other to the apparently trifling factors of the physician's environment. The orderly appearance of the latter's home, particularly of his waiting and consulting rooms, and the taste displayed in their decoration and furnishing, cannot but impress the patient with the prosperity and good judgment of the physician, and create that ease of mind and that confidence which are important factors in the successful outcome of any form of treatment.

The secret of artistic decoration is to be sought in its unobtrusiveness. Simplicity is to be chosen in preference to elaborate display. The pictures should not suggest any of the painful episodes in the history of medicine nor should there be any ambitious exploitation of the nude in art. Physicians who indulge in the laudable though expensive avocation of collecting art objects frequently convert their rooms into a veritable museum—whether of old mosters, tapestries, Japanese urns, or rare bindings. There is a growing and commendable tendency to banish as much as possible from the consulting room all outward evidences of the physician's calling—such as by concealing surgical instruments behind the stained glass doors of cabinets. Some gynecologists have found that the decoration of, or even the fastening of framed pictures upon, the ceiling, may aid in distracting the attention of the patient upon the examining table. There is, however, nothing that can add to the physician's rooms a cheerfulness as great as that afforded by the presence of fresh flowers, which bring the beauty and the repose of the outer world and help to counteract the mental depression of the ailing individual.

THE MOISTENED TRANSFER SLIP.

THE hygienic aspects of the street-car transfer constitute one of the few subjects that were not discussed at the recent Congress of Hygiene in Washington. There is a growing tendency to minimize the danger of transmission of disease through the agency of fomites of currency, and of books. There is perhaps small likelihood that the street-car transfer may be a means of carrying contagion. Street-car conductors at any rate constitute a healthy group of individuals. Nevertheless, the fact that millions of the little slips of paper daily pass from hand to hand in the larger cities is sufficient basis for the elimination of all danger of thereby disseminating disease, however slight this danger may be.

There is a peculiar irony in the advice printed on the back of transfers issued on some of the car lines of New York: "If you have tuberculosis do not give it to others by spitting in this car." Yet the very transfer that is made the vehicle of this important bit of hygienic information is in nearly every instance moistened with the saliva of the conductor who hands the slip of paper to the passenger. The latter, if careful, may avoid bringing his fingers in actual contact with the ominous moistened area on the paper. The physician with his knowledge of the potentialities of tuberculosis sputum, of the secretion from mucous patches, and of the secretions from throats and mouths that may harbor virulent strains of pneumococci or of other microorganisms, will at least hesitate to accept a transfer saturated with the conductor's saliva.

It would not be a matter of insuperable difficulty to put an end to this evil. The officials of the car lines should prohibit this practice on the part of their conductors. If the pad of transfers were constructed with a beveled edge, the single slip could be easily grasped without the necessity of moistening the finger. Would it not be a distinct advance in public hygiene if all people would avoid the practice of moistening the fingers before taking up articles such as wrapping paper, and if all mercantile establishments would make this a stringent rule with their employees? Both esthetic and hygienic needs would in this way be satisfied.

Chemistry of Cancer "Soil."

The analogy which must subsist between the chemical constitution of tissues disposed to tumor growth and infection with germs on the one hand and that of artificial culture media on the other, has long been remarked. A familiar concrete example is seen in diabetes in which the saturation of tissues with the saccharated plasma may be likened crudely to the addition of sugar to bouillon; in either case certain germs thrive the better in the soil because of the sugar content. In the Freund and Kaminer reaction in which cancer cells are not attacked by the patients' own serum, but are destroyed by the serum of a healthy subject, some definite chemical substance is evidently responsible for this result. At a recent session of the Royal Imperial Medical Society of Vienna (*Berliner klinische Wochenschrift*, November 4) Freund announced that this substance is a fatty acid soluble in ether and containing no nitrogen. The absence of this reaction in the cancerous they impute to the presence of a protective nucleoglobulin. It is by no means impossible, therefore, that this latter substance sensitizes the tissues to cancer. Extirpation of the latter in such a case does not by any means assure the future welfare of the patient even when all the diseased tissues are extirpated. This conclusion is borne out by clinical experience. Freund has experimented with extracts of various tissues, normal, and pathological (in reference to predisposition to cancer). From these experiments he has built up a structure of facts which show that there is a natural defence to cancer in the tissues, and that only when this is lacking can the nucleoglobulin mentioned protect the cancer cell. The presence of the nucleoglobulin is systemic, making a factor of predisposition. But the failure of natural defence is not general but local. The menace of cancer is, therefore, twofold—in the first rank local, in the second general. If it can be shown that this peculiar nucleoglobulin is not resident in a patient's tissues the likelihood of his death from cancer, Freund believes, is at least greatly diminished.

News of the Week.

Clearing House for Defectives.—At a meeting of the Women's Municipal League of New York on December 12, announcement was made of the raising of a fund to make permanent the work of the so-called Clearing House for Defectives, which was organized recently by Dr. Max G. Schlapp in connection with the Department of Charities. The work has heretofore been done entirely by volunteers.

United States Public Health Service.—The Board of Examiners of the Public Health Service will meet in Washington on January 13, 1913, for the purpose of examining candidates for admission to the grade of assistant surgeon in the service. Candidates must be between twenty-three and thirty-two years of age and graduates of a reputable medical college, with at least one year of hospital work or two years of professional experience after graduation. The examinations are: 1, physical; 2, oral; 3, written; 4, clinical. Successful candidates will be numbered according to their attainments and will be commissioned in the same order as vacancies occur. After four years, assistant surgeons are entitled to examination for promotion of higher grades. The salary for assistant surgeons is $2,000, for passed assistant surgeons, $2,400. Further information may be obtained on application to the Surgeon-General, Public Health Service, Washington, D. C.

Nobel Prizes Presented.—The winners of the Nobel Prizes for 1912, including Dr. Alexis Carrel of New York, to whom the prize in medicine was awarded, were guests at a banquet given by the King of Sweden on December 10, when the prizes were distributed by His Majesty.

New Head of the Bureau of Chemistry.—President Taft has appointed by Dr. Carl Alberg to succeed Dr. Harvey W. Wiley as head of the Bureau of Chemistry of the Department of Agriculture.

Hospital for the Ruptured and Crippled.—The new hospital of the New York Society for the Relief of the Ruptured and Crippled was opened on Monday of this week. Addresses were made by the president of the society, Mr. William Church Osborn, and by the surgeon-in-chief, Dr. Virgil P. Gibney. The buildings were thrown open to the inspection of the public on Monday and Tuesday. The new building is on a lot 200 x 200 feet at 303 to 325 East 42d street. It is fireproof, five stories high, and of the Northern Italian Renaissance style. In the basement are the kitchen, laundry, lighting and heating plants, and workshop. On the first floor are the reception rooms, general offices, dispensary, waiting rooms and rooms for special treatment. On the second floor are the living quarters for the staff. There are four wards on the third floor and a large dining-room. The fourth floor contains wards and operating rooms. On the fifth floor are the schoolrooms and a room for luncheon. The sixth floor contains fresh air rooms and a solarium. There are accommodations for 225 children.

Opposition to Foreign Students in German Universities.—A despatch to the *New York Times* says that, under the leadership of undergraduates of the University of Halle, the medical students of Germany's twenty-three universities are organizing a strike against the alleged favoritism shown to foreign medical students at Halle, where one-third of those attending the medical college are foreigners, including many Americans.

New Cancer Home.—St. Rose's Free Home for Incurable Cancer at 71 Jackson street, near Corlears Park, New York, was opened by Cardinal Farley on December 15. The home has accommodations for more than a hundred inmates and is intended to provide medical care and shelter for persons who are suffering from cancer and are without means. Both men and women will be admitted. The institution is supported by private charity.

Report of the Surgeon-General of the Navy.—The annual report of the Surgeon-General of the United States Navy made public on December 11, states that while contagious diseases have markedly decreased among the men in the navy, mental diseases are decidedly on the increase. The greatest number of fatalities among the men, however, was due to drowning, and the Surgeon-General urges that all sailors and officers be compelled to take a course in sea swimming wherever possible, which would seem to be a reasonable requirement. Another interesting statement contained in the report is that an investigation of the records at the Narragansett

Training Station has led to the estimate that 28 per cent. of those enlisting from the Southern States are infected with hookworm, and that of these 50 per cent. come from South Carolina and Alabama. It is estimated, also, that 90 per cent. of the inhabitants of Samoa and Guam carry the hookworm, that 50 per cent. have incipient and active tuberculosis, and that both diseases are on the increase.

Secretary of Medical Examiners.—The Regents of New York State at a meeting on December 12, appointed Dr. Otto von Huffman of New York City as secretary of the State Board of Medical Examiners, to succeed Dr. Maurice J. Lewi, resigned. Dr. von Huffman is a graduate of the College of Physicians and Surgeons, and is at present pathologist to the Sloane Hospital for Women and instructor in clinical pathology at the college.

Babies' Welfare Association.—The permanent organization of this association which has done good work in New York during the past few months was effected at a meeting held at the Academy of Medicine on December 12. The association is made up of seventy different philanthropic and medical societies, and has for its aim the lessening of infant mortality, in which it was very successful last summer. Commissioner of Health Ernst J. Lederle has been elected honorary president of the association.

Hospital Dedicated.—The Seraphic Heights Hospital of Waterloo, Ia., was dedicated on December 4, by the Archbishop of Dubuque. The hospital has been built by the Sisters of the Franciscan Order at a cost of about $200,000.

Nurses Graduate.—Eleven young women received diplomas from the Training School for Nurses of the Beth Israel Hospital at the ninth annual commencement exercises of the school on December 10.

New Tuberculosis Hospital.—The Supervisors of Suffolk County, New York, on December 14, voted to build a hospital for the treatment of tuberculosis. A plot consisting of some forty acres near Holtsville, Long Island, will probably be selected, and a building costing $50,000 erected. Suffolk is the twenty-seventh county in New York State to build such a hospital.

Deaths from Pellagra.—The report of the United States Public Health Service issued in Washington on December 14, places the number of persons who have died from pellagra in the years from 1907 to 1911 at 6,205. During these years a total of 26,000 cases were reported by various physicians and institutions in the Southern States, of which 2,500 were in Tennessee and 1,500 in Texas.

Deaths in New York.—During the week ending December 7 there were in New York City 1,420 deaths, or two more than during the same week last year. For the forty-nine weeks of 1912 thus far elapsed the death rate was 14.08, as compared to 15.09 for 1911.

Letchworth Village.—The plans for the development of the colony for the segregation of the epileptics and feeble-minded in New York State, to be known as Letchworth Village, have reached a point where contracts can be let for ten buildings, and it is hoped that the work of construction will be under way by next spring. This group will comprise four dormitories, an attendants' home, a dining hall, a laundry, a shop, a power plant, and a storehouse, the last four being sufficient for the needs of the entire village when it is completed. Ultimately there will be six groups of buildings, each containing eight dormitories, an industrial building, attendants' home, dining hall and kitchen, and school houses when needed. The total accommodation will be 500, the inmates being divided into three classes: improvable children, able-bodied adults, and infirm adults. In planning the buildings and laying out the village every effort has been made to secure a maximum of administrative efficiency with a minimum of expense, so that it may be demonstrated how economically the policy of segregating mental defectives can be carried out. The buildings themselves will be constructed of the field stone on the site and have been planned with especial reference to the peculiar needs of those who will occupy them.

Medical Missionaries Needed.—The Student Volunteer Movement for Foreign Missions announces the need of a woman physician for the Mary S. Ackerman Hoyt Hospital and Dispensary for Women and Children at Jhansi, India; of a woman physician in the Canadian Presbyterian Mission, working in the northeastern part of the Korean Peninsula, with headquarters at Jen San, about 135 miles north of Seoul; and of five trained nurses in Christian hospitals in Turkey, India, and Ceylon. All inquiries in regard to these opportunities may be sent to Mr. Wilbert B. Smith, 125 East Twenty-seventh street, New York.

Section on Orthopedic Surgery.—The American Medical Association, recognizing the increasing importance and usefulness of this special line of surgical work at its meeting last June, formed a Section on Orthopedic Surgery with Dr. Newton M. Shaffer of New York as chairman. This step was taken partly as a result of the desire of the American Orthopedic Association to limit its membership to a comparatively small number—those devoting their entire time to the study of this branch. The development of orthopedic surgery as a separate field has been rapid. It began about 1860 under the influence of such men as Davis, Taylor, Sayre, Knight, and Bauer; but it was not until the early 80's that the New York Orthopedic Society was formed, and not until 1887 that the national society, the American Orthopedic Association, was organized. In 1890 the International Congress at Berlin recognized orthopedic surgery and assigned it a special section, and at the Congress to be held in London next summer the subject will also occupy an important place. The first meetings of the new section will be held in Minneapolis in June, 1913, and the chairman asks for the cooperation of all those members of the American Medical Association who are interested in this field, in the preparation of a program. Application for permission to present contributions should be sent to the secretary, Dr. John Ridlon, 7 West Madison street, Chicago, Ill.

Personals.—Mr. Richard Lake, F.R.C.S., of London arrived in New York on December 12, lectured before the Section of Otology of the New York Academy of Medicine the next evening, and sailed for home on the *Mauretania* on December 18.

Dr. Jules Constantin of Paris, who was formerly an assistant to Dr. Doyen of that city, but more recently an aviator attached to the Bulgarian Army, was killed while flying in his biplane over the Turkisk Army at Tchatalja. Dr. Constantin had gone aloft carrying bombs to drop into the Turkish intrenchments.

Dr. H. W. Powers has resigned his position as Medical Superintendent of the Kenilworth Sanitarium, Kenilworth, Ill., and has been succeeded by Dr. Sherman Brown, formerly assistant physician of the Kings Park State Hospital, New York.

Gifts to Charities.—Under the will of the late Prof. Morris Loeb of New York University, a bequest of $250,000 subject to a life interest of his widow, is made to the Solomon and Betty Loeb Home for Convalescents.

The will of Dr. John D. McGill of Jersey City, who died last Thanksgiving Day, directs that his surgical instruments be given to St. Francis Hospital, Jersey City.

The Passaic, N. J., General Hospital receives $200,000 as a trust fund in perpetuity, the income to be used for maintenance, and St. Mary's Homeopathic Hospital, Passaic, the income of $20,000 for five years and then the principal, by the will of the late Mr. Peter Reid of Passaic.

The Good Samaritan Hospital of Lexington, Ky., receives $5,000 by the will of the late Mr. James M. Duff of that city.

Medical Society Elections.—The Dallas County (Ala.) Medical Society: Annual meeting at Selma on December 5. Officers: *President*, Dr. Edward B. Ward, Selma; *Vice-President*, Dr. S. B. Allison, Minter; *Secretary-Treasurer*, Dr. B. B. Rogan.

St. Clair County (Ala.) Medical Society: Annual meeting at Odenville on December 5. Officers: *President*, Dr. W. B. Johnson, Ashville; *Vice-President*, Dr. P. G. Dunlap; *Secretary-Treasurer*, Dr. J. P. Hawkins, Ragland.

Morgan County (Ala.) Medical Society: Annual meeting at New Decatur on December 5. Officers: *President*, Dr. John B. Shelton, New Decatur; *Vice-President*, Dr. A. M. White, Hartsells; *Secretary-Treasurer*, Dr. W. C. Bailey, Decatur.

Etowah County (Ala.) Medical Society: Annual meeting at Gadsden on December 5. Officers: *President*, Dr. A. W. Ralls, Gadsden.

Calhoun County (Ala.) Medical Society: Annual meeting at Anniston on December 3. Officers: *President*, Dr. T. J. Brothers, Anniston; *Vice-President*, Dr. S. T. Mehard, Weaver; *Secretary*, Dr. I. P. Levi, Anniston; *Treasurer*, Dr. E. C. Anderson, Anniston.

Jefferson County (Ala.) Medical Society: Annual meeting at Birmingham on December 2. Officers: *President*, Dr. Henry Silas Ward, Birmingham; *Vice-President*, Dr. J. T. Kent, Ensley.

Tuscaloosa County (Ala.) Medical Society: Annual meeting at Tuscaloosa on December 2. Officers: *President*, Dr. George H. Searcy; *Vice-President*, Dr. C. E. Elgin, Searles; *Secretary-Treasurer*, Dr. J. A. Maxwell.

Crisp County (Ga.) Medical Society: Annual meeting at Cordele on December 4. Officers: *President*, Dr. T. E. Bradley, Cordele; *Vice-President*, Dr. M. R. Smith, Cordele; *Secretary-Treasurer*, Dr. A. J. Whelchel, Cordele.

Allen County (Ind.) Medical Society: Annual meeting at Ft. Wayne on December 3. Officers: *President*, Dr. W. O. Gross, Ft. Wayne; *Vice-President*, Dr. D. J. Mercer, Poe; *Secretary*, Dr. Garrette Van Sweringen, Ft. Wayne; *Treasurer*, Dr. E. E. Morgan, Ft. Wayne.

Howard County (Ind.) Medical Society: Annual meeting at Kokomo on December 6. Officers: *President*, Dr. William Scott, Kokomo; *Vice-President*, Dr. F. N. Murray, Center; *Secretary-Treasurer*, Dr. E. M. Shenk, Kokomo.

Madison County (Ill.) Medical Society: Annual meeting at Alton on December 6. Officers: *President*, Dr. J. M. Pfeiffenberger, Alton; *Vice-President*, Dr. E. A. Cook, Alton; *Secretary*, Dr. E. W. Fiegenbaum, Edwardsville; *Treasurer*, Dr. R. S. Barnsack, Edwardsville.

Public Bath.—Plans have been prepared for the erection on Twenty-eighth street, near Ninth avenue, New York, of a four-story public bath and gymnasium to be owned by the city. The cost is estimated at $170,000.

The Late Dr. von Ramdohr.—At a stated meeting of the Medical Board of St. Mark's Hospital of New York City, held at No. 177 Second avenue, in said city, December 3, 1912, the following resolutions were unanimously adopted: *"Whereas,* Time in his unswerving course has removed from our midst Dr. Cæsar A. von Ramdohr, an associate, who was one of the founders of our hospital, knowledge of whom engendered not only respect for his honesty of purpose and indomitable courage of conviction but personal affection because of the uniform kindly courtesy of his deportment; *Whereas,* His faithful services abundantly show his unswerving attention to duty, and these services, eagerly sought by those suffering, made him endeared to every professional and lay member of the hospital, and his counsel was often asked and eagerly accepted, as it was cheerfully given; *Whereas,* In his life he had acted to his professional brethren who were troubled in their career, with the utmost consideration, with unusual kindness and courtesy, and his services were sought and given cheerfully; *Whereas,* His genial companionship, his uncommon charm of manner and courtliness of address, attracted and held the admiration and affection of all with whom he came in contact. Therefore, be it RESOLVED, That the sympathies and condolence of the members of the Medical Board of St. Mark's Hospital of New York City, be and hereby are, extended to the bereaved family, and furthermore, be it RESOLVED, That these resolutions be spread upon the minutes of the Medical Board and published in the principal medical journals.

"(Signed) IGNATZ MORVAY ROTTENBERG, M.D., BENJAMIN T. TILTON, M.D., ANDREW VON GRIMM, M.D."

Obituary Notes.—Dr. EDWARD F. SCHWEDLER, retired, of New York, a graduate of the University of Leipzig, Germany, in 1848, and formerly a visiting surgeon at the German Hospital, New York, died at his home on December 7, aged 90 years.

Dr. ALVIN M. CUSHING of Springfield, Mass., a graduate of the Homeopathic Medical College of Pennsylvania, Philadelphia, in 1856, died at his home after a long illness on December 1, aged 83 years. In 1866 when Mrs. Eddy, the discoverer of Christian Science, was injured in a fall, Dr. Cushing attended her through a rather serious illness. Mrs. Eddy in later years referred to her recovery as "a divine cure" and dated Christian Science from that experience. Dr. Cushing, however, possessed proofs that the "divine cure" was in reality his.

Dr. RICHARD J. BRADY of Hastings, Minn., a graduate of the Jefferson Medical College, Philadelphia, in 1909, died in St. John's Hospital, St. Paul, of typhoid fever, on November 26, aged 28 years.

Dr. CHARLES HENRY THOMPSON of Belmar, N. J., a graduate of the College of Physicians and Surgeons, New York, in 1868, a member of the New Jersey State and Monmouth County Medical So-

cieties, and formerly mayor of Belmar, died at his home suddenly on December 3, aged 69 years.

Dr. H. J. Salley of Salley, S. C., a graduate of the Medical College of Georgia, Augusta, in 1885, died at his home on November 23, aged 52 years.

Dr. William G. Crum, United States Minister to Liberia, a graduate of the Howard University School of Medicine, Washington, and formerly Collector of the Port of Charleston, his appointment to that post by President Roosevelt, in 1903, having met with great opposition, died at his home in Charleston, S. C., from African fever contracted in Monrovia, on December 7, aged 54 years.

Dr. Robert A. Gunn of New York, a graduate of the University of Buffalo, Medical Department, in 1866, died in Bellevue Hospital on December 7, aged 48 years.

Dr. Daniel Stanislaus Harkins of Boston, Mass., a graduate of Montreal University and of the Harvard Medical School in 1888, formerly resident physician in the Boston city institutions on Long and Rainsford Islands, and for two years quarantine physician of the port, and a member of the Massachusetts State and Suffolk County Medical Societies, died at his home of Bright's disease on December 8, aged 48 years.

Dr. William D. Humphrey of Virginia, Ill., a graduate of the Northwestern University Medical School, Chicago, in 1889, and a member of the Illinois State and Cass County Medical Societies, died at his home on December 4 as the result of injuries sustained in an accident some weeks before.

Dr. Toliver Wertz of Princeton, Ind., a graduate of the Bellevue Hospital Medical College, New York, in 1879, and a member of the American Medical Association and the Indiana State and Gibson County Medical Societies, died at the home of his daughter in Altoona, Pa., on December 6, aged 64 years.

Obituary.

ELLSWORTH ELIOT, M.D.,

NEW YORK.

Dr. Ellsworth Eliot of New York died at his home from acute bronchitis on December 9, in the eighty-sixth year of his age. Dr. Eliot was graduated from Yale University with the degree of A.B. in the class of 1849, the class that also numbered Timothy Dwight, later president of the University, among its members, and three years later was graduated from the College of Physicians and Surgeons, New York. After leaving the medical school he entered Bellevue Hospital as an interne on the surgical service and was one of the first graduates of that institution. The breaking out of the Civil War found him enlisted in the Union Army, in which he served with distinction until 1864, when he returned to private practice in this city. His interest in medical education was keen and for many years he acted as a trustee and registrar of the College of Physicians and Surgeons. His other activities were numerous, and he was a member of the American Medical Association, the New York Academy of Medicine, the New York State and County Medical Societies, serving as president of the last in 1872 and 1873, and of the New York Pathological Society, in which his membership dated back to 1855. Dr. Eliot was also consulting physician to the Northeastern Dispensary, New York.

Correspondence.

OUR LONDON LETTER.

(From Our Special Correspondent.)

DEPUTATION TO THE CHANCELLOR—MEDICAL PROBLEMS CONNECTED WITH WAR—SARCOMA OF LONG BONES—THE R. S. M.'S EXHIBITION AND CONVERSAZIONES—DEATH OF MR. TEGETMEIER, THE NATURALIST.

London, Nov. 29, 1912.

The Chancellor of the Exchequer received the deputation of the B. M. A. on Monday and again on Tuesday. On Thursday a report of the conference was submitted by the delegates to the State Sickness Committee. The Council will meet on Wednesday next, December 4, to consider the present position. The Council do not propose to publish the revised and final terms of the Government until next week, but will after their meeting transmit the documents concerning the situation, with their own observations, to the divisions of the association in the United Kingdom. Meantime it is undesirable that any member, or body of members, should negotiate with any Insurance Committee. All divisions in the kingdom will then be called upon to hold special meetings and take a vote accepting or rejecting the revised terms and conditions. Non-members of the association who are qualified practitioners in the districts will be invited to these meetings. It seems a roundabout sort of proceeding, but is in accordance with the constitution of the B. M. A., and so we must await the result.

The medical problems connected with war have naturally of late demanded attention from civilian surgeons, as well as those engaged in the military and naval services. Dr. F. M. Sandwith considered the subject historically in his Gresham lectures from about 450 B. C., and had to note the barbarities which went on for so many centuries before there was any record of a hospital on the field of battle—the first being in 1487. But even in the Crimean war the army medical service broke down as completely as any on account of the divided rule which caused so much confusion.

On November 13, at the United Service Medical Society, Col. Bruce Skinner, M.V.O., read a paper in which he pointed out how much the mobility of an army is influenced by the necessities of the medical units, and how desirable it is that the medical staff should study war in order to be able to grasp the designs of the general commanding and foresee what may have to be provided for. It is a fundamental principle that a field medical unit must not become clogged with sick and wounded. Free evacuation toward the base is, therefore, imperative. The fewer the sick in front the more the supplies for the healthy, and the nearer the hospital to the base the easier become its necessary supplies. Therefore, the true hospitals have to be on the lines of communication and the advanced medical units should consist mainly of ambulance transport. Illustrations from historical battles were given both in hostile and friendly countries. In the latter there would probably be wide lateral dispersion of the wounded, and Colonel Skinner pointed out how the modern voluntary aid societies might supplement the medical units. He suggested that Red Cross detachments should be taught the method of registering the patients entrusted to their care so that reliable records would be available as in the medical units. His conclusions may be

emphasized as: (1) Force without sufficient medical transport loses mobility, and requires additional army service transport; (2) but with sufficient gains in mobility and needless Army Service Corps transport; (3) the necessary evacuating transport must take the form of a medical unit, such as the "Ambulance Column" now proposed for the Indian Army—for in war we cannot rely on another branch or an improvised transport. The sphere of work for this unit is between the field ambulances and the line of communications, working under the Director of Medical Service; (4) the organization of such a system of evacuation forms the *crux* of the medical problem in war.

The Surgical Section of the R. S. M. gave two whole meetings to a discussion on sarcomata and myelomata of the long bones. It was begun by Sir F. Eve of the London Hospital, and continued by other experienced surgeons who gave their opinions on numerous points and reported illustrative cases. Two examples of metastasis in myeloid sarcoma were mentioned as suggesting that such tumors were related to sarcoma, but it would not be desirable so to name them as if they were different forms of one growth. Mr. Gask had endeavored to trace the results of treatment of sarcoma of long bones by investigating as far as possible the after-history of cases occurring at St. Bartholomew's Hospital during ten years, and comparing them with the figures of Butlin's "Operative Surgery of Malignant Disease."

After consideration of various points with a view to obtaining some guidance as to prognosis he submitted the following conclusions: (a) The immediate risk to life is small; (b) the prognosis in myeloid sarcoma is good, particularly after amputation; (c) in all other cases of sarcoma the results are horribly bad. The prognosis can only be made on a microscopical examination. An attempt should be made to improve results by earlier diagnosis and free removal of the disease together with the lymphatic glands. Mr. Bruce showed radiograms of tumors of bones to draw attention to the use of *x*-rays in differential diagnosis. He pointed out that in two endosteal sarcomata the appearances differed from three others of periosteal sarcoma which he showed, as he also did a series of radiograms of conditions which might be confused with new bony growths. Mr. A. D. Reid reckoned the value of *x*-ray examination in these cases as in direct ratio to the duration. It was seldom that the surgeon was called to them in the very early stages, consequently more or less definite abnormalities were often found when at the first consultation. He described these abnormalities, and although *x*-ray examination sometimes afforded assistance there were many cases in which it quite failed. It aided in demonstrating the absence of periostitis which assisted in excluding inflammatory, tuberculous, and specific lesions, but for diagnosis between the various cystic lesions its value was very limited.

Mr. Makins, presiding, remarked that a question which had not arisen in the debate was whether sarcomata ever developed at the site of a recent fracture. A speciman exhibited seemed to suggest that the fracture appeared first in that case. He felt the danger of cutting into a growth, for diagnosis was real, and in such case he was always prepared to complete the operation within the next twenty-four hours; for, he argued, it was necessary to incise to the depth of the growth if microscopical examination was to be made. One could not look without favor on the view that the object of treatment might be fulfilled without amputation.

The Royal Society of Medicine is holding high revels, giving a sort of housewarming in its new home, which, as I informed you at the time, was formally opened by the King. Four conversaziones on four successive evenings, the last to-morrow, comprise the entertainments provided to celebrate the occasion, and at the same time show the profession the advantages the society offers its members. Among the exhibits the cinematographs shown by Pathé Frères included pictures of the circulation of the blood, agglutination, phagocytosis, and development of sea-urchins' eggs. In the optical exhibition of Messrs. Leitz the most notable thing was the latest form of their universal projection apparatus, which makes possible microprojection in both vertical and horizontal positions, can be used for diascopic projection both of opaque and transparent objects, also for episcopic projection, whether the object be illuminated from above or from the side.

An extremely interesting demonstration by Mr. Hewett (librarian) on the epidiascope was of great interest and eminently attractive to every lover of rare books—it was of some of the curious old volumes in this fine library. There was Religio Medici, 1650 edition. Less known, perhaps, but of as much interest or more, was the "Detection and Querimonie of the Daily Enormities and Abuses Committed in Physick," which may almost be looked upon as the earliest work on medical ethics. Curious recipes were thrown on the screen from the "Queen's Closet Opened." One of them was "to make children's teeth come without pain. Proved. Take the head of a hare, boiled or roasted, and with the brain thereof mingle honey and butter, and therewith anoint the child's gums as often as you please." Other equally interesting exhibits were "The Dispensary" (Garth); the "Tabidorum Theatrum" (1656); and the "Organon Salutis" (1657).

The veteran naturalist, W. B. Tegetmeier, died on November 19, at the age of ninety-six. He was educated for the profession and took medals at the University, but soon turned his attention and devoted his remarkable energies to science and literature. He became Davis lecturer to the Zoological Society and assisted Darwin with observations on the variation of plants and animals, and carried out many experiments in breeding. He was one of the oldest members of the Ornithologists Union, and a regular contributor to their journal. He wrote on "Poultry" in the Encyclopedia Britannica, and for forty years he edited the poultry department of the *Field*, all the time furnishing also weekly articles to the *Queen*. Among the volumes of which he was the author are: "The Poultry Book," "Pigeons," "Poultry for Table and Market," "Natural History of Pheasants," "Grouse," and jointly, with Colonel Sutherland, a work on "Horses, Asses, Mules, and Mule Breeding." Twenty years ago he was writing in *Nature* on "Military Pigeon Posts," and his contributions are held to be of permanent value. It was he who, many years ago when he was a comparatively young man, proved the possession of the homing faculty of pigeons by organizing express services over long distances, including from Belgium to the Crystal Palace.

NINTH ANNUAL MEETING OF THE PHILIPPINE ISLANDS MEDICAL ASSOCIATION.

(From Our Regular Correspondent.)

MANILA, P. I., November 4, 1912.

THE ninth annual meeting of the Philippine Islands Medical Association was opened to-day in the building of the College of Medicine and Surgery of the University of the Philippines. The Acting Governor-General, the Hon. Newton W. Gilbert, delivered the address of welcome, in which he felicitated the American medical man in the Islands who had been responsible for the great sanitary progress which has been made here, and more especially for having established a first-class medical school with high standards and for having already graduated young Filipino men and women after taking the whole of the five years' course which is prescribed by the Medical College. His remarks were followed by the presidential address of Dr. R. E. L. Newberne, entitled "Basic Principles of Psychotherapy and the Identity of all Healing Systems." The address gave a resumé of all systems of healing, past and present, and had particular reference to the influence of mind over matter, the unconscious application of the principles of which was, no doubt, responsible for the successful results which were reported from time to time by the exponents of the various cults. He made an earnest plea for the study of psychology by the medical man in order that he might take full advantage of this valuable therapeutic aid and use it as an adjuvant to the drug and other relief remedies which were commonly employed.

The first two papers, namely: "Two Cases of Primary Purpura" and "A Case of Microcephalus with Symptoms of Tetanus," were read by Dr. Maria Paz Mendoza, and were reports upon cases that had been observed in the Philippine General Hospital.

The next paper was entitled "Cutaneous Anthrax, with Report of a Case," by Dr. E. C. White of the United States Navy. This paper gave the history of the case of a seaman on board a United States war vessel, who handled meat which was purchased in Shanghai and which was probably anthrax infected. The man suffered from the cutaneous form of anthrax. After cauterization of the lesions he made a good recovery. In the discussion which followed Dr. Heiser stated:

Dr. White's paper has particular interest for us in the Philippines at the present time, even though the infection was contracted in Shanghai. Anthrax had figured very largely in the statistical reports of the Bureau of Health, but so far as he was aware, there had been no case reported which was supported by reliable bacteriological findings. The frequent reports of anthrax were, perhaps, due to the fact that in the Spanish nomenclature it is customary to refer to carbuncles as anthrax. Just at the present time Dr. Barber of the Bureau of Science was in Buhi, Ambos Camarines, investigating a strange disease which had been reported as occurring among animals and which was alleged to have been responsible for eight deaths in human beings in the last two months, and the symptoms of which, as described by a layman, suggested anthrax.

The next paper was entitled "A Case of True Bilharzial Disease in Porto Rico" by Dr. U. R. Webb of the United States Navy, and was read by Dr. Charles F. Butler of the Navy. This paper gave the history of a case that came under observation in Porto Rico, in which a diagnosis of suppurating kidney was made and in which the right kidney was removed. The patient improved for a time, but soon afterward it was noted that he was still passing blood, a microscopical examination of which showed the Bilharzial parasites. In the discussion which followed Dr. Butler stated that he had personally seen a number of cases of Bilharziosis in Porto Rico, which had been confirmed microscopically.

The next paper was entitled "Korsakow's Psychosis, with Report of a Case," by Dr. Heber Butts of the United States Navy. This paper gave an excellent description of a case of this disease which he recently had at the Cañacao Hospital. The writer pointed out that Korsakow's psychosis is frequently mistaken for and diagnosed as delirium tremens. He further called attention to the fact that practically all of the cases of this disease are associated with alcoholism. The principal points in connection with the differential diagnosis were, that in delirium tremens the patient is delirious, frequently has hallucinations and other symptoms, but which clear up in comparatively a few days, whereas, in Korsakow's disease there is no delirium, no hallucinations, the symptoms never improve, and there is, usually, marked amnesia.

The next paper was entitled "Congenital Varicosities of the Venæ Paraumbilicalæ, Thoracoepigastricæ, and Mammariæ, with Report of a Case," by Dr. A. G. Sison.

The next paper was entitled "Lipomatosis, with Report of a Case," by Dr. Honoria Acosta Sison. This paper gave the history of a child that had been delivered by the author in October, 1910, at which time it was noted that there was a slight enlargement of the right leg, otherwise the child was normal in every respect. Examinations made of the child from time to time showed that the right leg was increasing in size much more rapidly than the left leg. The author stated that the enlargement of the leg was due to hyperplasia of the subcutaneous fat, also, perhaps, to the deposits of fat which, apparently, caused obstruction to the venous circulation.

The next paper was entitled "Bone Lesions in Smallpox," by Drs. W. E. Musgrave and A. G. Sison. In this paper the authors gave histories and showed *x*-ray photographs of a number of cases in which shortening and other deformities of the bones of the extremities and lower jaw had occurred in persons who had suffered from smallpox. The disease only occurred in children or in those in whom epiphyseal ossification had not taken place. In the discussion which followed Major Ashburn stated that it was not clear to him that this condition was necessarily the result of smallpox; that it might well be possible that scurvy or similar diseases might be concerned in its etiology. Dr. Heiser stated that this paper, supported, as it was, by good *x*-ray photographs, gave an excellent account of bone lesions encountered in persons who have had smallpox during infancy, but that he should like to ask Dr. Sison whether he knew of any other diseases occurring in the Philippines in which similar bone lesions are found. In at least 8,000 examinations which he had made of persons who were alleged to be affected with leprosy, bone lesions of the kind Dr. Sison mentioned were often found.

Some of these were in true cases of leprosy; others in yaws and syphilis, and many others were noted in cases in which either smallpox or any of the other conditions mentioned could be excluded with reasonable certainty. Could Dr. Sison give some more direct connection between these lesions and smallpox?

Dr. Wells stated that it seemed strange to him that in view of the many thousands of cases of smallpox that had occurred in Germany, Great Britain, and the United States, the literature did not contain reports of similar bone lesions due to smallpox in those countries.

The last paper of the day was "Glandular Fever," by Dr. A. P. Goff, of the San Lazaro Dangerous, Communicable Disease Hospitals. Dr. Goff stated that on account of the presence of plague in Manila, glandular enlargements were regarded with suspicion, and that many of such cases were sent to San Lazaro for observation. He stated that it frequently happened that a case was admitted with a large femoral bubo, a temperature of 40° C., partial delirium, headache, and without any evidence of injury in the leg or foot below the bubo. The bacteriological findings were always negative for plague, and there had been no mortality among such cases. In the discussion which followed, Dr. Heiser stated that in view of the presence of plague in Manila, all glandular enlargements were, naturally, of the greatest interest to those who were connected with the Bureau of Health. The cases which came under observation at the San Lazaro Hospital might be divided readily into two classes:

1. Those which have enlargements of the glands in specific regions, like those in the femoral region, a case of which Dr. Goff had mentioned in his paper. In these cases not only were the glands enlarged, but there was edema of the surrounding tissues, and the whole appearance was rather suggestive of plague, but, on account of the negative bacteriological findings and the rapid convalescence, plague could usually be excluded with certainty.

2. Those in which practically all of the superficial glands throughout the body were enlarged. In these cases the glands are readily movable, are very hard, and the swelling confined within the capsule of the gland, the surrounding tissue being apparenty unaffected, no edema being present.

Progress of Medical Science.

Boston Medical and Surgical Journal.

December 5, 1912.

1. Heredity: With Special References to the Law of Gregor Johann Mendel, O. S. A. J. M. Connolly.
2. The Teeth and Their Relation to the Body. G. H. Wright.
3. The Treatment of Pulmonary Tuberculosis by Artificial Pneumothorax, According to the Method of Forlanini. G. M. Balboni.
4. A Study of the Blood in a Case of Severe Hemorrhage. J. E. Ash.
5. A Case of Fatal Endocarditis, Due to a Capsulated Gram-Staining Diplococcus, Occuring in Chains. W. H. Smith and R. Kinnicutt.
6. Treatment by Salvarsan During the Past Year. E. L. Oliver.

2. The Teeth and Their Relation to the Body.—G. H. Wright states that there are four distinct periods in the life of a growing child when the tonsils become enlarged, which periods are coincident with the final eruption of the teeth, and at such times these tonsils, although enlarged, are in no manner diseased, inflamed or suppurative. If these tonsils are left alone (except in a few instances in which prophylactic cleansing of the crypts has been advised) they are no longer enlarged or troublesome. These periods of tonsillar enlargement appear approximately at the ages of 2 years, 6 years, 12 years, and 18 years, and these coincide with the eruption of four groups of molars. The author is very confident in his belief that the tonsil (which is histologically a lymphoid gland irrespective of its other possible functions) is sharing in the work of taking care of the normal physiological débris due to the elaboration and eruption of forty-eight teeth and their adjacent membranes. Diseased teeth may be a source of infection and enlargement of glands and tonsils. Tonsils become enlarged without infection or disease whenever (*a*) the first group of temporary molars at two years of age are in process of eruption; (*b*) at six years when the first permanent molars, and at twelve years when the second molars are active in eruption. General practitioners of medicine, district nurses and physical examiners of school children in particular should learn the years when to expect these teeth. Where there has been no previous history of recurrent tonsillitis and the tonsils are simply enlarged, the periodicity of the eruption of teeth should be considered.

3. Treatment of Pulmonary Tuberculosis by Artificial Pneumothorax.—G. M. Balboni notes that the establishing and the maintaining of an artificial pneumothorax is not an indifferent operative procedure, but if the technique proper is followed this procedure does not present any particular dangers. Nevertheless it is not a treatment to be carried out by the general practitioner. This method of treatment is not as a rule to be adopted in the early cases, neither should it be the only treatment adopted in the serious cases. The consensus of opinion among clinicians who have closely watched the effects of Forlanini's method is favorable. In fact, considering that in many cases, as Brauer says, the treatment has been a last resort, the results are very encouraging. The method of Forlanini, namely, the production of an artificial pneumothorax in phthisis, aims directly to eliminate from the lung the destructive and tuberculous process. It has steadily gained ground in the last few years.

New York Medical Journal.

December 7, 1912.

1. Tendencies of Modern Physiological Discipline in Medical Schools. J. C. Hemmeter.
2. Spinal Ataxia in the Aged. Chas. W. Burr.
3. Ocular Manifestations of Angiosclerosis. D. F. Harbridge.
4. The Newer Teachings of the Diseases of the Alimentary Canal. III. M. I. Knapp.
5. Gonorrheal Arthritis. G. A. Holliday.
6. The Residual Ear. D. C. Yates.
7. Intestinal Obstruction and Volvulus Complicating Pregnancy. M. A. Flower.
8. The Relations Between Doctor and Patient. H. Rabinowitsch.
9. The Education and Training of Feebleminded Children in the Public Schools. A. W. Edson.

2. Spinal Ataxia in the Aged.—C. W. Burr states that in tabes most frequently the symptoms begin to appear in the decade between the thirty-fifth and the forty-fifth year. Ataxia from any cause is not frequently seen in the aged, because those in whom it has developed in the period of maturity die before old age begins, and it is very rare for it to begin in old age. In examining an elderly patient who is ataxic, if one does not know the history and judges simply from the general appearance and the ataxia, one may jump too quickly to a diagnosis of true tabes. If all the classical symptoms are present, and the history of the manner of the onset is that of tabes, there is no escape from the diagnosis, but as a rule the mode of onset of the symptoms in old people is found to be unlike that of tabes, and some or many of the important subsidiary symptoms are absent. The points of resemblance to tabes are the spinal ataxia and the absence of the knee jerks. The things which differentiate it from true tabes are the rapidity of the onset, the absence of pain, the early appearance of more or less palsy, the temporary improvement in the ataxia under treatment, and the final stage, that of a myelitis.

3. Ocular Manifestations of Angiosclerosis.—D. F. Harbridge enumerates these manifestations as follows: (1) A change in the course and size of the retinal arteries, manifested by an undue tortuosity associated with other evidence of disease; an alteration in the caliber of the retinal arteries, which may be a general contraction of one or more branches, or an alternating contraction and broadening in the same artery, or an artery may be practically normal in size, then more or less suddenly become greatly reduced in size, and continue as such out toward the periphery. (2) A change in the course and size of the veins with signs of pressure. The conditions are very similar to those described in the arteries, with the addition of pressure signs, manifested by the obstructed venous flow, a point upon which Gunn places the utmost importance. Ordinarily at healthy vessel crossings there is no depression, but in arteriosclerosis the artery is more or less rigid, the walls being thickened, and upon crossing the vein compresses or indents the same, the distal end of the vein being as large as or usually larger than the proximal end; at times it is ampullated. This condition of the vessels is frequently referred to as Gunn's vessels. (3) A change in the vascular reflex, such as definite alteration in the vessel walls, showing a whitish strip of infiltration in the perivascular lymph sheaths; more marked brilliancy of the central light streak, due to intimal changes frequently described as "silver wire arteries"; last, a paleness and loss of vessel transparency. (4) Retinal changes, indicated by a grayish haze about the nerve head and along the course of the vessels. (5) Hemorrhages, usually manifested in the more advanced cases. There may be faint linear areas near and parallel to the vessels, or scattered round dots, or more extensive splotches. Often there are scattered yellowish white spots, many partially or wholly bordered by pigment.

9. The Education of Feebleminded Children.—A. W. Edson states that there should be established in every city a psychological clinic, possibly in connection with the city hospital, under the control and direction of the board of education, for the purpose of examining and classifying all children deemed by the teachers and school physicians as somewhat peculiar, below normal, exceptionally dull. Suitable classrooms in regular school buildings should be secured for these children, and suitable equipment should be provided. The classes should be small, with not more than twelve or fifteen children in a class, in order that these children may receive individual attention. Specially qualified teachers who have a natural aptitude for the work, should be selected—teachers who have infinite patience, tact, resourcefulness, intense human sympathy, an appreciation of effort, and unbounded faith in the young people intrusted to them. A suitable course of study should be provided—a course that gives emphasis to the essentials, that is flexible, and is adaptable to the needs of the individuals, a course that leads directly to some vocation. The instruction should be personal and individual, and should give emphasis to physical and manual training, to nature study, excursions, and illustrative material.

Journal of the American Medical Association.

December 7, 1912.

1. Clinical Features of Sudden Obstruction of the Coronary Arteries. J. B. Herrick.
2. Laws Relative to the Sanitary Control of Public Eating and Drinking Places. W. F. Dutton.
3. The Control of Contagious Diseases in a Municipality. G. L. Kiefer.
4. Procedure in Quarantine Practice: Desirability of the Reconsideration of Present Methods, Especially in Relation to the "Minor" Infectious Diseases. J. W. Kerr.
5. Pleural Vomicæ; with an Analysis of Sixteen Cases. E. Smith.
6. Prognathism, with Operative Treatment. W. M. Harsha.
7. Bleuorrhagic Keratosis. B. H. Roark.
8. Exophthalmos in Scurvy. L. R. De Buys.
9. Occupational Skin Diseases. J. A. Fordyce.
10. Occupational Eye Diseases and Accidents. M. D. Stevenson.
11. Some Types of Ureteral Obstruction in Women. H. D. Furniss.
12. A Case of Suspected Pulmonary Blastomycosis. J. H. Snoke and E. I. Strick.
13. The Relative Value of the "Natural" and the Synthetic Salicylates. A Study of the Literature. C. Eggleston.
14. A Method of Continuous Dilatation of Extensive Urethral Stricture. J. R. Eastman.
15. Fat Embolism from a Chronic Osteomyelitis. M. Field.
16. New Mastoid Chisels. F. Allport.

1. Sudden Obstruction of the Coronary Arteries.—J. B. Herrick calls attention to certain facts going to show that coronary obstruction is not always necessarily fatal; the coronaries are not so strictly end-arteries, as Cohnheim and others have thought. Careful dissections have shown anastomoses of considerable size in some cases. Besides the sudden fatal cases there may occur mild cases, though these have not been recognized clinically. In still another class the symptoms may be severe enough to be recognized as cardiac, but may not be immediately fatal, and the patient may recover. The author reports a case of this kind in which the patient survived fifty-two hours after the onset of the pain, and in which the condition was verified by autopsy. He has seen five other similar cases in which autopsy was lacking, but in which the symptoms were so characteristic as to convince him of the correctness of the diagnosis. When these cases are recognized the importance of absolute rest in bed for several days is clear. It would also be wiser to use cardiac tonics like digitalis or strophanthus, than to follow the routine practice of giving nitroglycerine or allied drugs. The hope for the damaged heart muscle is in securing its nutrition by a supply of blood through the remaining arteries. Clinical experience shows that digitalis is of great value in cardiac angina, especially in cases of low blood-pressure, and these obstructive cases come under this head.

5. Pleural Vomicæ.—By E. Smith. (See MEDICAL RECORD, Vol. 81, page 1119.)

7. Blenorrhagic Keratosis.—B. H. Roark reports a case of very marked and troublesome keratosis occurring after gonorrhea, confined to the soles of the feet at first and afterward appearing on the hands, and still later on other parts of the body, together with exfoliation and loss of toe and finger-nails. There was also an accompanying gonorrheal arthritis. The case was treated with gonorrheal mixed vaccine, under which the joint involvement improved. Later an autogenous vaccine made from the cultures obtained from nodules on the feet, which contained the ordinary pus staphylococci, was used with benefit.

8. Exophthalmos in Scurvy.—By L. R. De Buys. (See MEDICAL RECORD, Vol. 81, page 1163.)

9. Occupational Eye Diseases and Injuries.—M. D. Stevenson discusses first the common preventable accidents, such as from blows; the lodgment of small particles in the eye, especially in dry grinding, dressing rough edges of castings, etc.; and from burning sparks and flashes in forgings and castings. Fans made to carry the particles away from the eyes and various shield devices are on the market and are more or less used. Glass protectors and goggles are also employed, but they get dirty and marked by the flying particles and the workmen are likely to cast them aside. Where there is great heat glass protectors are inefficient, but good wire gauze protectors with asbestos around the mouth and neck are useful. Minute examination of the conjunctivæ of workmen engaged in these various dangerous occupations sometimes reveals hundreds of minute scars that may be so numerous as to affect vision. Other occupations involving the risk of eye injury are coal mining, masonry, quarrying, weaving, wire-drawing, and farming. Many accidents occur with the use of powerful explosives and from the bursting of bottles, water gauges, etc. Unslacked lime dust is especially dangerous and when it gets into the eye olive oil or even castor oil should be freely applied, or, when not available, large quantities of water should be used at once. Wurdemann advises the use of a from 3 to 10 per cent. solution of ammonium chloride to dissolve and carry away the lime. Ammonia

burns should be treated by profuse irrigation with water and in the case of workers in acids and alkalies neutralizing solutions should be at hand. Exposure to irritating gases and fumes occurs in textile factories, in bleaching and dyeing works and from the excessive light or heat are not uncommon among electrical workers, smelters, and glass annealers. Hyperasthesia of the retina may be relieved by proper lenses or colored glasses. In certain steel works frequent examinations of the white-hot metal have to be made with colored lenses, and cataracts are observed frequently among bottle-workers, puddlers, etc. Heat is claimed by the Germans to be the most important cause. Sudden strong light-flashes before the eyes must be avoided. The manufacture of explosives is dangerous on account of the poisonous fumes, and chronic lead-poisoning is attended sometimes with eye infections, and poisonous gases formed in certain lead processes are hurtful. Coal miner's nystagmus is due to a prolonged and peculiar use of the eye in working and in strained positions.

11. **Ureteral Obstruction in Women.**—H. D. Furniss from a study of the literature and his own personal observations concludes that stricture of the ureter is commoner in women than is generally supposed and is often diagnosed as some other organic trouble, especially when it occurs on the right side. It is slow, progressive and leads to serious renal trouble. It is generally of inflammatory origin and the infection may be either ascending or descending. There is usually a history of an antecedent pyelitis and, after the definite formation of a stricture, the symptoms become those of an intermittent hydronephrosis like that caused by obstruction with stone or from kinking. In most cases observed the symptoms have persisted for some time, the attacks being at first slight and far between, but becoming more common and severe. He does not consider exposure or excessive drinking of water as necessary causes, not having observed them in his own cases. The pain is generally in the renal region but may be referred to gall-stones or appendicitis. There may or may not be bladder disturbances. Oliguria during an attack with subsequent polyuria is often observed. The kidney function may be seriously affected even with moderate hydronephrosis. The diagnosis is best made with the aid of cystoscopy, ureteral catheterization, and radiography of the renal pelvis. With these methods and especially with pyelography one should be able in practically all cases to make a diagnosis before irreparable destructive kidney changes have occurred. With pyelography a graphic picture is obtained, not only of the location of the stricture, but of its extent, which makes it possible to form an opinion of the damage that has occurred above the stricture.

13. **The Natural and the Synthetic Salicylates.**—C. Eggleston points out that the evidence in favor of the "natural" salicylates rather than of the artificial ones is extremely slight, or what amounts to the same thing, the evidence against the artificial salicylates is even less. In nearly forty years of use by physicians all over the world, the artificial salicylates have been found quite as effective as the "natural" and no more liable to produce unfavorable actions under similar conditions than are the vastly more expensive "natural" products.

The Lancet.

November 30, 1912.

1. The Relations of Pleurisy to Tubercle. Sir T. Clifford Allbutt.
2. Drunkenness and the Physiological Effect of Alcohol. C. Mercier.
3. Cysts of the Vermiform Appendix. A Contribution to the Knowledge of Pseudomyxoma of the Peritoneum. T. Wilson.
4. A Case of Pseudomyxoma of the Peritoneum Arising from Perforation of a Gelatinous Ovarian Cyst and Associated with Similar Cystic Disease of the Vermiform Appendix. T. W. Eden.
5. A Note on the Occurrence of the Colon Bacillus in the Blood. P. N. Panton.
6. Obstructive Jaundice Relieved by Operation. K. H. Jones.
7. The Value of X-Rays in the Diagnosis of Tuberculosis in Children. A. G. L. Reade.
8. Transmission of Poliomyelitis by Means of the Stable Fly (*Stomoxys calcitrans*). J. F. Anderson and W. H. Frost.

1. **The Relation of Pleurisy to Tuberculosis.**—Sir T. Clifford Allbutt states that it is not far from an axiom to say that a streak of pleurisy audible at the apex means pulmonary tuberculosis. So-called idiopathic pleurisies in persons over five years of age are tuberculous in 50 per cent. of the cases. As regards child life, the author's own impression from experience is that pleurisy in young children is rarely tuberculous; the incidence may not be more than 1 in 10; and even of these the pleurisy may be only incidentally associated with a tuberculous focus, or the tubercle may be a secondary consequence of a protracted empyema. Absorption seems to be slower in a tuberculous pleurisy than in any other form. The importance of a patch of dry pleurisy as a frequent precursor of frank manifestations of pulmonary tuberculosis is emphasized by the author. What is the prognosis of the acute serous form? In these cases there is a proclivity to later outbreaks of tuberculosis, especially pulmonary. The glueing together of the serous surface tends to the stifling and obliteration of the bacilli, and it may be that a direct origin thence of later manifestations is not the rule; that, generally speaking, any later events are not so much the effects of the pleurisy as kindred processes. A subsequent phthisis may not begin on the same side. Of more direct consequence are the stubborn retractions, with deformity of the chest and fibrous invasion of the lung and bronchiectasis, which belong rather to the tuberculous than to other kinds of pleurisy. Meningitis is a very rare sequence. More often one is disappointed to see these pleuritic cases drift into spinal or joint tubercle, or into tubercle of the urogenital parts. It seems that in most of these cases the bronchial glands are affected, and may form a link between the one and the other set of phenomena. Under the aseptic treatment now universal the tuberculous effusions show no great proneness to suppuration; if, unfortunately, this comes about, obstinate sinuses may be established with tendency to amyloid disease. The author has almost given up repeated exploratory, or plastic, surgical interference with these fistulous conditions, operations which are usually futile or worse; these cases do better under sanatorium treatment. It is a matter for serious consideration whether a patient on recovery from an acute serous pleurisy, which may have been tuberculous, should be submitted to vigilant sanatorium methods for some sufficient interval before entering again into his ordinary life.

2. **Drunkenness and the Physiological Effect of Alcohol.**—C. Mercier states that contrary to the views of prohibitionists, drunkenness is not as prevalent to-day as it was in former generations. The occupations by which men now earn their living require a skill, a nicety, a vigilance, an accuracy, an attention, which are incompatible with even occasional drunkenness. The majority of drinkers take alcohol for its euphoric effect; but this is not the motive with all of them. There is another physiological effect of alcohol which is upon occasion of the utmost value. Alcohol has the power to unlock the store of energy that exists in the brain, and to render available, for immediate expenditure, energy that without its use would remain in store, unavailable for one's immediate needs. If alcohol has this power of liberating latent energy, it will exercise the power, not only when the available energy is used up and exhausted, but at all times, so that even when energy is flowing freely out of store, the taking of alcohol will add to the freedom of the flow, and this augmentation of the supply of free energy will show itself in increased activity of body, or of mind, or of both. That alcohol does increase the activity of both body and mind there is abundant evidence to show. The increase is but temporary, and is apt to be followed by exhaustion, but increased activity there always is. What form the activity will take must depend upon the state of the different parts of the brain, as to repletion or exhaustion, when the alcohol is taken.

If the highest level of the brain contains plenty of energy, this energy will be set free by the alcohol, and the result will be increased activity of mind. If these higher levels are empty, more energy cannot be had from them, and what increase of activity results will be activity of body and will be crude and unintelligent; and between these two extremes there will be every grade.

5. The Colon Bacillus in the Blood.—P. N. Panton and H. L. Tidy call attention to the fact that while infections of the body tissues by the *Bacillus coli* are extremely common, and while there is every reason to believe that the spread of infection in no inconsiderable number of cases takes place by way of the blood stream, it is remarkable how rarely direct proof of blood infection can be obtained during life. Blood cultures made from persons suffering from undoubted coli infections are almost invariably sterile, but the authors have been able on three distinct occasions during the last nine months to obtain from the blood a pure growth of the colon bacillus. In two of the three cases the blood was withdrawn at the commencement of a true rigor, and while the patients were actually shivering. In the third case the blood was obtained three and a half hours after a rigor. In other and subsequent cases of similar infections blood taken a few hours after a rigor has been sterile.

British Medical Journal.

November 30, 1912.

1. Report of the Committee on Treatment of Simple Fractures.
2. Further Experiment Concerning the Origin of Life. H. C. Bastian.

1. The Treatment of Simple Fractures.—The committee appointed by the Council of the British Medical Association presents an analysis of the material collected by the committee's investigators as to the results of the treatment of simple fractures. The following are the main conclusions: The statistics relative to the non-operative treatment of fractures of the shafts of the long bones in children (under the age of fifteen years), with the exception of fractures of both bones of the forearm, show as a rule a high percentage of good results. These are unlikely to be improved upon materially by any other method of treatment. In comparison with the non-operative results in children, the aggregate results of non-operative treatment in those past childhood (*i. e.* over the age of fifteen years) are not satisfactory. From the analysis of the age groups it is clear that there is a progressive depreciation of the functional result of non-operative treatment as age advances, that is to say, the older the patient the worse the result. In cases treated by immediate operation, the deleterious influence of age upon the functional result is less marked. In nearly all age groups, operative cases show a higher percentage of good results than non-operative cases. Although the functional result may be good with an indifferent anatomical result, the most certain way to obtain a good functional result is to secure a good anatomical result. No method, whether non-operative or operative, which does not definitely promise a good anatomical result, should be accepted as the method of choice. For this reason mobilization and massage by themselves have not been found to secure a high percentage of good results. They are, however, valuable supplementary methods of treatment. Similarly, of operative methods, those which secure reposition and absolute fixation of the fragments yield better results than methods which fall short of this; imperfect fixation of the fragments by wire or other suture has been found to be an unsatisfactory procedure in the treatment of fractures of the long bones, with the exception of the olecranon process of the ulna. Operative treatment should not be regarded as a method to be employed in consequence of the failure of non-operative measures, as the results of secondary operations compare very unfavorably with those of immediate operations. In order to secure the most satisfactory results from operative treatment it should be resorted to as soon after the accident as practicable. It is necessary to insist that the operative treatment of fractures requires special skill and experience, and such facilities and surroundings as will ensure asepsis. It is, therefore, not a method to be undertaken except by those who have constant practice and experience in such surgical procedures. A considerable proportion of the failures of operative treatment are due to infection of the wound, a possibility which may occur even with the best technique. The mortality directly due to the operative treatment of simple fractures of the long bones has been found to be so small that it cannot be urged as a sufficient reason against operative treatment. For surgeons and practitioners who are unable to avail themselves of the operative method, the non-operative procedures are likely to remain for some time yet the more safe and serviceable.

2. The Origin of Life.—H. C. Bastian believes that it is quite possible that in nature both Monera and blue-green algoid corpuscles may be constantly appearing *de novo*. But that is a mere supposition devoid of all positive evidence, as it must always remain till someone may be fortunate enough—whether chemist or biologist—to hit upon such combinations of materials as will, under necessarily restricted experimental conditions, suffice to engender either Monera or blue-green algae. For whatever the future researches of chemists may achieve in the way of synthetically building up the bases of protoplasm, when it comes to the demonstration of the production of actual living matter, they could never convince themselves or the world in general that they had succeeded in their quest till they were able to produce it under such restrictive conditions as the author has had to cope with in his experiments—that is within hermetically sealed vessels which, with their contents, had previously been sterilized. They, like the biologist, would have to eliminate all pre-existing life and securely guard against contaminations, and what the chemist may then produce no one can say, though he is certainly never likely to produce living matter in tangible lumps.

Berliner klinische Wochenschrift.

November 25, 1912.

Further Experience with Thyroid Therapy.—Heinrich Stern of New York states that most practitioners are still in the dark as to the possibilities of thyroid medication. One druggist reports but six prescriptions calling for thyroidin in a total of 2,000. The efficacy of this substance must to some extent depend upon a content of arsenic and the latter acts as a synergist when prescribed with thyroidin; and in such combination very small doses of each drug secure the desired action as well as much larger ones. The author combines thyroidin in the form of the dessicated gland substance with sodium cacodylate and further adds a minute quantity of epinephrin as an antagonist to any depressing action of thyroidin on the circulation. The author classes as forms of hypothyroidism a number of petty ailments—dry and rough skin, trophic disturbances of hair and nails, etc. The benefit is often striking, especially when the medicine is given in warm months. A similar influence is noted over bleeding gums and Rigg's disease, although these affections do not occur at all in many severe cases of hypothyroidism.

Etiology of Vasomotortrophic Disorders.—Zweig after analyzing a complicated case shows the coincidence of three different disease factors, viz., hyperthyroidism, circulatory disturbances, and abnormal psyche. Under the first factor he mentions exophthalmos and tremor. Should we regard the other two factors as of thyroid origin or as independent? The patient was subject to urticaria, volatile edema, and purpura accompanied by temperature

elevations. Articular swellings sometimes occurred. These so-called angioneurotic symptoms are believed to indicate some functional anomaly affecting the vasomotor and thermic centers. The coexistence of psychic excitation suggests that the cortex may be the primary seat of the mischief. The limited participation of the thyroid in cases of this type appears to show that this organ is involved secondarily. A possible primary factor is of course inherent instability of the sympathetic—an irritable weakness of the vegetative nervous system—which is naturally able to influence a number of organs—the thyroid among them—through changes in the blood supply. This instability might also affect the nerve centers themselves, disturbing the heat center. Another element must also be considered, to wit, the secretions of the ovary which are known to stand in some relation to the vasomotor system. The author is inclined to look upon psychic components as chiefly of independent nature, although probably aggravated by the sympathicoatonia and hyperthyroidism. When the latter affections improve there is no corresponding improvement in the psychoses.

Primary Sarcoma of the Muscles.—Landois refers to sarcomata which originate in the connective tissue of the voluntary muscles as different from the genuine muscle sarcoma which can be diagnosticated only by careful histological study. Naturally both forms are considered under one clinical head and a distinction has not seemed practicable. Thus in one surgical clinic of twenty such growths six were shown to have originated in the fascia, nine in the muscle proper, and in the others the precise origin could not be determined. In 1904 it was said that 109 proved cases of pure muscle sarcoma were upon record and quite recently the number was given as 130. The growths are chiefly the ordinary round cell and spindle cell sarcomata and myxosarcomata. There is known to exist, however, a primary or pure muscle sarcoma which bears no relation to the preceding in which the tumor elements are muscle elements. This form was termed by Grawitz myogenic sarcoma.

Münchener medizinische Wochenschrift.

November 26, 1912.

The Status Lymphaticothymicus.—Schridde enumerates the symptoms of this constitutional anomaly which has been recognized in life in recent years but which was formerly known chiefly in connection with a peculiar type of sudden death not alone in children. When death follows slight traumatisms or even psychical experiences we should find this rationale, and here belong without doubt certain deaths which follow salvarsan injections. Hence the great importance of being able to recognize in advance such a predispositon. This must first be studied on the dead. The cadavers are extremely pale and for the most part the victims are plump and have a good cushion of fat, which when incised is seen to be unusually whitish and moist. As a rule, the thymus shows a notable degree of enlargement. The anomaly, however, is not one of size but of histological alteration and of failure to undergo normal involution. Along with the thymic peculiarities we find many hypertrophies of lymphoid structures, not, however, of a sort to be readily recognized in life. The left ventricle of the heart invariably shows some degree of dilatation and hypertrophy. We know that the status thymicus may run in families and may prevail more in certain localities. We suspect its presence in pale, pasty, plump children. Naturally, the cardiac anomaly just mentioned should determine the diagnosis, but this is not often sufficiently marked to be readily recognized. When the thymus is very large it can be mapped out by percussion of the enlarged lymphoid structures recognizable in this connection; the most significant are nodes at the bends of the joints. The enlarged cervical nodes, tonsils, and pharyngeal tonsils may be due to some other causes. If there is no history of tonsilitis, enlarged tonsils are significant, and perhaps of all criteria the enlargement of the follicles at the base of the tongue is the most trustworthy evidence. The author employs this as a routine test. The blood shows some lymphocytosis.

Treatment of Dermatoses with Human Serum.—Heuck makes use of this resource with the view of correcting the abnormal blood state which apparently underlies certain dermatoses, having been influenced thereto by the remarkable results of pregnancy serum in pregnancy dermatoses. The author has thus far made 350 injections in 40 cases. He could see no benefit in psoriasis or moist eczema. On the other hand, he obtained prompt results in various cases of pruritus and in other cases in which there was present a marked nervous element. It was hoped that Dühring's disease might prove amenable to this treatment, but this result was in no wise obtained. The serum apparently has power over urticaria.

Rational Treatment of Asiatic Cholera.—Emmerich first mentions the old resource of saline infusion, the latter to be improvised from the various tablets made for the purpose. The infusion should be made into the veins as well as by other means, and the severe picture produced by the abstratction from the blood of its watery content may as a rule be promptly changed for the better. If collapse again appears, the infusion must be repeated. The great lowering of blood pressure which causes the collapse calls for special measures, for death actually occurs from uremia. The drugs to be used in connection with infusion comprise digitalis, strophanthus, adrenalin and pituitrin, always given by intravenous route. A resource of great promise when exhibited early is colloidal manganese, which is injected freely. The author also recommends for the same purpose amidosulphonic acid. Both of these substances attack and destroy the nitrogenous substance which forms the cholera toxin and which is now believed to be deadly by reason of its nitrous acid or nitrite content, which kills by causing extreme lowering of blood pressure.

Pneumococcus Phlebitis.—J. Chalier and R. Crémieu state that this is a relatively rare complication of pneumonia, occurring most frequently at the time of the defervescence and during the period of convalescence. The veins usually affected are the femoral.—*Le Bulletin Médical.*

Growth of Displaced Normal Tissue.—C. V. Craster concludes that the repeated transplantation of a piece of skin from one animal to another confers no exceptional power of growth upon that skin. The repeated implantation of skin into one animal decreases, if anything, its receptivity for such grafts. The burial of skin in the interior of the body causes, after a time, a change in the skin of such a nature that it cannot resume its normal function as an external covering tissue, even when its circulation is well maintained and it is buried in the body of the same animal. The author's experiments do not determine how long the cells of the skin actually remain alive, and indeed it is conceivable that the mere maceration of the protective horny layer puts the skin, when re-exposed, into the position of a moist tissue, such as the intestinal mucosa, so that it readily dries up and succumbs. Nor do the experiments throw any light upon the possible existence of cytolytic substances in the circulating fluids, although, naturally, the idea of such an action has always been present in the author's mind in observing the gradual loss of vitality in the transplanted tissues.—*Journal of Experimental Medicine.*

Insurance Medicine.

SUGGESTIONS TO MEDICAL EXAMINERS.

BY THE INSURANCE EDITOR.

HISTORICAL SKETCH OF LIFE INSURANCE.*

LIFE insurance was practically originated in England in the sixteenth century by individual underwriters whose contracts were more or less in the form of wagers, based on crude guesses at the chances of life and death. On account of the nature of the transactions, the rates were high and the term of insurance short. The few records show that the most favored method was a form of agreement between two or more parties upon the life of some individual. In other words, a policy was written on the life of a certain person (A), by some other person (B), at the request and expense of a third party (C). If the insured (A) died before a given date, the payer of the premium (C) would be the winner; if, however, the insured (A) survived the stated period, the insurer (B) would win. A distinctive feature in these ventures was the absence of legal insurable interest, the beneficiary possessing merely a monetary interest in the insured's death. "St. Catherine's Guild" came into existence about the same time for the purpose of extending aid to its members in the event of fire, flood, robbery, or other calamity, and to give support in sickness or old age.

These methods were entirely inadequate for a reliable conservation of the home, for the protection of widows and orphans or to actually provide against want in old age. Insurance could not become effective until issued by permanent and properly managed corporations instead of individuals whose business transactions came to an end at death, and the lack of experience, absence of data, and proper business supervision delayed the formation of serviceable corporations until a comparatively recent date, although superficial observations on the chances of life and death and attempts at the construction of tables based upon the law of mortality are recorded as having taken place towards the end of the seventeenth and the beginning of the eighteenth centuries. A royal charter was granted for "The Amicable Society for a Perpetual Life Assurance Office" in 1706. The "Royal Exchange" and the "London Assurance," which had been started exclusively for writing fire and marine insurance, had their charters amended so as to permit them to issue policies for life insurance in 1721. Later on in 1756 "The Equitable Society for the Assurance of Lives and Survivorships" was incorporated by a number of men as a purely mutual affair and as an intended improvement over the older societies. The careers of these companies were uncertain and characterized by illiberal action and exorbitantly high premiums. Nevertheless, the business of life insurance was encouraged in England at this time by governmental and popular support, whereas it was practically forbidden on the Continent by edicts and ordinances, especially in France and the Netherlands, and this accounts to a great degree for the sluggish advancement of life insurance in those countries up to within comparatively recent years.

By the beginning of the nineteenth century the theory of life contingencies had been worked out to a considerable extent through the studies of Price and Morgan and the consequent construction of the Northampton, Chester and Swedish National tables, and not less than eight insurance companies were doing business in Great Britain. By 1844, over 140 companies and societies had become established in Great Britain and the subject received some consideration that year from the British Parliament. Among these companies, the "Equitable Society for the Assurance of Life and Survivorships," with its methods brought up to the prevailing standard, occupied a prominent place and still flourishes, and to it must therefore be accorded the honor of being the oldest representative of modern life insurance.

Life insurance had received some recognition in America by the founding of the "Presbyterian Ministers Life Fund of Philadelphia," an institution of such limited and restricted importance that it is generally accepted that life underwriting, in the true sense of the word, began in America in 1843 when "The Mutual Life Insurance Company of New York" issued its first policies to 250 original subscribers. This company, it may be noticed, started its career one year before the value of life insurance to society was first definitely recognized in England as a subject worthy of parliamentary debate. It was followed by "The New England Mutual" in 1844, "The Mutual Benefit," "The New York Life," and "The State Mutual" in 1845, and "The Connecticut Mutual" in 1846. Since 1843, life insurance in the United States has far outgrown its operations in England; this progress may be attributed to a greater adaptation to the needs of the people, to the support it had received as a business, and to the energy and impulse of its managers and agents.

Life insurance has passed from the humble beginnings of 150 years ago to the status of a great financial factor in the business world, from a condition of more or less speculative and sentimental possibilities to that of a rational, professional, and commercial necessity. This improvement is largely due to the important work done in the United States during the past fifty years by its most eminent actuaries, and through combined efforts in Great Britain and the United States the business of life insurance is now conducted as a science with deductions based upon the enormous experience which investigators have at their command.

*It is proposed, beginning in this number, to devote a few articles to the consideration of the general construction of the principles and business of life insurance. Information on this subject will be found useful by examiners when, as often happens, they are consulted by their patients or when they are communicating with the home office.

The Significance of Children's Diseases in Insurance.—Grohmann says that no special space is usually allotted to questions about children's diseases in application blanks, yet a history of these diseases is of great importance in judging an applicant. It is necessary to find out the specific affections from which he has suffered, for suspicious findings in the urine gain much in significance if a history of scarlet fever, for instance, has been obtained. On the other hand, partial deafness explained by inflammation of the middle ear in the course of scarlet fever, or scars in the neck following abscesses of lymphnodes during a similar illness in childhood, have much less significance than in case no history of children's diseases has been obtained.—*Blätter für Vertrauensärzte der Lebensversicherung.* Vol. III, No. 4, 1912.

Book Reviews.

PUBLIC HEALTH CHEMISTRY AND BACTERIOLOGY. A Handbook for D. P. H. Students. By DAVID MCKAIL, M.D. (Glasg.), D. P. H. (Camb.), F. R. F. P. S. G. Lecturer on Public Health and Forensic Medicine, St. Mungo's College, Glasgow; Lecturer on Hygiene to Nurses, Glasgow Royal Infirmary, etc. Price $2.50. New York: William Wood & Company, 1912.

THIS is a book of unusual excellence and usefulness. The subjects considered are of the highest importance to all medical men no matter what their special activities may be, and it would be very desirable if such a course as is here outlined were made part of the curriculum of every medical college. The average student of medicine learns far too little concerning such vital subjects as the determination of the wholesomeness of water supplies, foods and beverages, etc., as well as the practical application of bacteriology, which he ordinarily acquires purely as a theoretical subject. About one-third of the present volume is devoted to chemical matters and the remainder to the study of microorganisms. In both cases the author displays complete mastery of the subjects and gives admirable working directions for all of the most approved methods concerned. The introductory chapters in the bacteriological portion of the book include discussions of the general principles of bacteriology and of immunity and anaphylaxis that are remarkable in their completeness and clearness of expression. Indeed this portion of the book if bound separately would form a much more satisfactory textbook of bacteriology than many works devoted to this subject alone and enjoying high favor. The few instances in which local conditions in the British Isles are taken into consideration do not in any way detract from the suitability of the volume for use in this country and its excellence deserves to be made known widely.

THE ANATOMY OF THE HUMAN EYE AS ILLUSTRATED BY ENLARGED STEREOSCOPIC PHOTOGRAPHS. By ARTHUR THOMPSON, M.A., M.B., F.R.C.S. Professor of Human Anatomy in the University of Oxford. Oxford: At the Clarendon Press, 1912.

MR. THOMPSON'S work includes 61 pages of text, 67 pages explanatory of the plates, an index and a cabinet containing 67 stereoscopic views arranged so that they can be satisfactorily viewed by means of the ordinary stereoscope. The text is devoted to a detailed description of the gross and minute anatomy of the tissues of the eyeball as studied from anteroposterior sections and equatorial sections, the latter regarded from the anterior and also from the posterior aspect. Dissections of special parts are also described. The photographs are in the main true to the condition of the tissues during life. Where artefacts appear the proper explanation is found in the text.

A careful study of Thompson's work cannot fail to result in the acquirement of a comprehensive knowledge of the anatomy of the tissues of the eyeball. The work is conscientiously written, is of a high character, and deserves commendation.

A MANUAL OF AUSCULTATION AND PERCUSSION. Embracing the Physical Diagnosis of Diseases of the Lungs and Heart and of Thoracic Aneurysm and of Other Parts. By AUSTIN FLINT, M.D., LL.D. Late Professor of the Principles and Practice of Medicine and of Clinical Medicine in the University and Bellevue Hospital Medical College, etc. Sixth Edition Revised and Enlarged by HAVEN EMERSON, A.M., M.D. Associate in Physiology and Associate in Medicine, College of Physicians and Surgeons, Columbia University; Assistant Visiting Physician, Bellevue Hospital. Illustrated. Price $2.00. Philadelphia and New York: Lea & Febiger, 1912.

WHILE it would in any case be a source of much gratification to have a new edition of this celebrated work appear, it is doubly so to have it issued in its present form. To attempt at this time to rehearse the excellencies of the original work would appear presumptuous for it stands as an acknowledged masterpiece, but it is pleasant to pay tribute to the thoughtful care with which Dr. Emerson has carried out the difficult task of bringing the book into thorough accord with present teachings. Although the alterations are numerous and in some instances have necessarily been extensive the original plan of the work has been faithfully preserved and it still remains a model of precise and elegant diction. While at first thought it might seem that the additions on such subjects as the use of the *x*-rays, the electrocardiograph, the sphygmomanometer, the interpretation of polygraph tracings, etc., might advantageously have been made at somewhat greater length, a little reflection convinces the reader that the editor's judgment in this respect deserves only commendation. It is far better for the student to place in his hands a book like the present which informs him how much may be ascertained by highly trained senses and powers of observation, and stimulates him to develop these faculties, than to allow him too early to rely on the assistance of complicated apparatus, representing refinements which the beginner is unfitted to appreciate. A section deserving especial notice is the new one on the irregularities of the pulse which is a true *multum in parvo* and presents all the essentials of the subject with remarkable clarity and conciseness. It is hard to conceive of a better book than this for the purpose of the student, or of one which can be read with greater profit by more advanced diagnosticians.

STATE BOARD EXAMINATION QUESTIONS AND ANSWERS OF THE UNITED STATES AND CANADA. Practical Work Giving Authentic Questions and Authoritative Answers in full that will prove helpful in passing State Board Examinations. Reprinted from the MEDICAL RECORD. Fourth Edition. Thoroughly Revised. Every Question Answered in Full. Price $3.00. New York: William Wood and Company, 1912.

THIS volume will prove invaluable to students who are preparing to pass their State Board Examinations. The contents of the book are sufficiently indicated on the title-page, and the present work differs from all others of a similar character in that it answers all questions and does not merely make a selection.

INTERNAL MEDICINE. By DAGID BOVAIRD, JR., A.M., M.D., Assistant Professor of Clinical Medicine in the College of Physicians and Surgeons of Columbia University; Associate Visiting Physician of the Presbyterian Hospital, and Visiting Physician of the Seaside Hospital in the City of New York. With 100 illustrations in the text and 7 colored plates. Price $5.00. Philadelphia and London: J. B. Lippincott and Company, 1912.

IT goes without saying that there are many good and few superlatively good text books of medicine, but as Dr. Bovaird aptly points out in his preface there has rarely been a teacher of medicine who has been satisfied with the books which his students have had to use, which is to say that all earnest and able teachers of medicine have their own ways of teaching which do not always fit in with the views of other authorities. The book before us is intended to give in compact form the more important facts of the subjects included in the domain of internal medicine. It is, as the author claims, only a framework of internal medicine. The descriptions given are admirably lucid and concise and follow the latest views. The arrangement of the subjects has been dictated by the wish to put the simpler first and to present something of a logical order of study, but the classification followed will not be found in consonance with the views of some of the highest authorities; but as the author remarks, "we must act upon our present knowledge with full consciousness that much of it may to-morrow require revision." The plates and illustrations are remarkably good and the book will undoubtedly find much favor as a peculiarly clearly written text book for students.

A MANUAL OF PHARMACY FOR PHYSICIANS. By M. F. DELORME, M.D., Ph.G., Assistant Professor of Materia Medica and Pharmacology, Long Island College Hospital, New York. Third Edition, with nineteen illustrations. Price $1.25 net. Philadelphia: P. Blakiston's Son & Co., 1912.

THIS edition is a great improvement on the former one in that the section on Prescription Latin has been rewritten and now looks more like Latin. It is a pity that a similar drastic revision was not accorded the whole book; to take only one example, and that at random, in the index on pages 219 and 220, under the heading Tincturæ, we find: Tincturæ benzoini compositi, Tincturæ cannabis indica, Tincturæ cinchonæ composita, Tincturæ Dover's powder, Tincturæ ferri pomata, Tincturæ gambir composita, Tincturæ guaiac ammoniata, Tincturæ krameria, Tincturæ lobelia, Tincture ipecacuanha et opii, Tincture valerianæ ammoniata, Tincturæ veratrum. Immediately following these gems we find Trochisci mentha piperita. Zanthoxylum appears to be the author's way of spelling Xanthoxylum. After looking through this book we are more than ever convinced that students, physicians and authors who do not know Latin should write their prescriptions in English.

REPORTS FROM THE MONDAY CONFERENCE OF THE NEUROLOGICAL INSTITUTE OF NEW YORK.

First Division—Dr. Joseph Collins.

Astasia-Abasia.—Dr. Collins, in presenting a case of astasia-abasia developing immediately after trauma in a woman who on examination is found to have tabes, said it is no uncommon experience of the neurologist to encounter patients who claim to be paralyzed as the result of accident and injury, especially where there is liability for damages. Such cases resolve themselves into instances of malingering, hysteria, or organic disease of the central nervous system. Rarely is the paralysis found to be dependent upon a disease whose pathogenesis has no real relationship to trauma such as tabes. In the present case such dependency was not obvious. In fact there was a coincidence of pathological conditions that is very interesting.

The patient was a married woman 46 years old, by occupation a dressmaker. Three weeks ago, being then so far as she knew in good health, she was in the act of alighting from a trolley car when she noticed a taxicab coming a short distance away. The next thing she remembers was that she was in a shop and a surgeon was sewing a wound in her scalp. She was taken home and remained there until four days ago, when she was brought here. During these three weeks she was wholly unable to stand or to move her legs. Her only complaint in addition to this was that it made her tired and exhausted to talk, to think, or to attempt to do anything.

Her complaint when she entered this hospital was of inability to stand or walk; pain in the left knee, sensation of weakness and fatigue in the back and legs, and a feeling of syncope when made to sit up in bed. Examination showed a scalp wound in the left side of the parietal region and another wound practically healed on the left leg below the knee. Aside from these there were no indications of traumatism. Further examination revealed a complete inability to put her lower extremities in motion. When the most vigorous attempts to stand were made, she did not accomplish anything in this direction. A fortnight ago, when an endeavor was made to get her on her feet by having some one lift her from the arm pits, she went into a heap quite like a cadaver that has lost its rigidity. She had some capacity to move her feet and her legs when she was lying down, that is she could lift the right leg off the bed, but the left leg she could not move. The Hoover sign was negative. The upper extremities and head she could move, but the strength in the upper extremities was extremely slight. The knee jerks and ankle jerks were absent both on direct stimulation and reinforcement. In striking contrast to this was the preservation of the direct myotatic irritability of the quadriceps extensor muscles. The tendon jerks of the lower extremities were not elicitable. The plantar reflex was flexor in type, the abdominal and epigastric reflexes were present.

Examination of her sensibility showed that there was an anesthesia for thermal and thermal sensibility of the left side of the body from the neck downward. The cornea and the pharynx showed no insensibility and there was no disorder of the senses of sight, smell, or hearing. The pupils were normal and reacted promptly to light. There was no disorder of her vascular system that could be made out.

Examination of the cerebrospinal fluid revealed an excess of globulin, 22 lymphocytes in each cubic millimeter. The Wassermann reaction of the cerebrospinal fluid and of the blood was positive.

On the day after her arrival here it was noted that when she was lifted out of bed her legs collapsed so that she fell to the floor face forward. When lifted into a chair she let the body relax and the head loll from side to side. She complained of no weakness in the legs or arms, but refused to use them for her support. She was put under treatment by cold packs, massage, and suggestion. A week later it was noted whereas she lay in bed apparently paralyzed from waist down, unable to use arm and neck muscles, she has made daily improvement.

At first when she attempted to sit up she strained all the muscles of the neck and arms; later while holding the assistant's hand she pulled herself into a sitting posture, meanwhile being apparently on the point of falling out of bed, exerting herself more than was necessary. At the end of a fortnight she could sit up without assistance, and holding an assistant's hand, she rose to a standing posture, the legs being held very rigid while standing. Three weeks after her entrance here she was walking unaided about the hospital.

She is now able to walk and to stand in a way that seems to be quite normal. Physical examination, however, reveals the signs that permit the diagnosis of tabes to be made unhesitatingly. These signs are: absence of the tendon jerks of the lower extremities, disorder of postural sensibility in the legs, segmental hypesthesia in the trunk and thighs, a positive Wassermann reaction of the serum and cerebrospinal fluid, and a decided increase of lymphocytes in this fluid.

She maintained that she was quite well until she was injured. The only symptom that she will admit is slow urination. She denies having had diplopia, girdle sensation, pedal paresthesia, leg weariness, pains, or other common early symptoms of tabes.

This case is described as one of astasia-abasia, which is the designation that has been given to a disorganization or suppression of the coordinated movements concerned in walking or in standing upright. It has been written of extensively by French and German writers, and for a while it seemed as if we were in danger of having another disease added to our already unwieldy list of nervous disorders, but it is now universally recognized that astasia-abasia is but a symptom or manifestation of the medical sphinx, hysteria. The chief reason for so labeling this case is to call attention to the fact that it differs in certain points from the classical cases of astasia-abasia, and briefly to discuss its relation to injury. In typical cases of astasia-abasia the affected individual who is entirely unable to stand or to walk and who when he attempts to do so pitches forward on his face and falls quite like an inanimate object, is when lying in bed able to make any movement of the extremities quite as a normal individual does. For a week or so after the patient came into the hospital she could move her extremities but feebly. Thus the case may more aptly be called hysterical paralysis, but in reality that is what astasia-abasia is.

Its relation to the tabes is purely coincident. The accident chanced to afflict one who was already afflicted with a syphilitic disease of the spinal cord and meninges, but which had not yet begun to cause active symptoms. It has no real relationship to the tabes. There have been those who have contended that tabes is in some instances dependent upon trauma, and one hears in the courts not infrequently such claim made by physicians. It will be made less frequently, or less successfully in the future now that the diagnosis of tabes may be corroborated by serological investigation, for few will be so partisan or interested in the litigation as to contend that change in the cerebrospinal fluid which is now recognized to be pathognomonic of syphilis (plus Wassermann, excess of globulin, reduction of Fehling, and lymphocytes) may be induced by trauma.

The outcome of this patient's hysterical manifestations

is gratifying enough, but for her the greater compensation is that the tabes has been discovered in a stage when, in all likelihood, its progress may be arrested, and we propose to urge her to submit herself to vigorous salvarsan and mercurial medication.

SECOND DIVISION—DR. FREDERICK PATERSON.

Temporosphenoidal Epilepsy.—Dr. KENNEDY presented a case of temporosphenoidal epilepsy. P. L., Frenchman, age 58, admitted Oct. 17, 1912. On admission he complained of headache and a "funny feeling" over the whole right side of the body. He had syphilis six years before which had been treated at the time with mercurial injections and, in March, 1912, by six full doses of salvarsan, otherwise his health had been good. A nasal polypus had entirely destroyed the sense of smell. The history of his condition was as follows:

On the third of August, 1912, he experienced a violent headache which in a few hours was followed by marked dizziness and then sudden unconsciousness. He was taken to the Presbyterian Hospital, where he remained in an allegedly delirious condition for a week, at the end of which time he was able to recognize his relatives. He remained in the hospital for about two weeks and was discharged, according to his own account, physically well, but with a "cloudiness in the head and a memory that was poor." Subsequently he went to his business for about an hour or so every day but his "head" was never clear, and he began to have attacks which can best be described in his own words: "I have flashes in my head and a queer funny feeling; scenes present themselves to me but I can't place them. They seem like something I have been through but I cannot remember where and I feel that I am always going to remember and just miss it." At the time of these scenes and curious sensations he is always conscious of a very foul odor. He knows that this odor must be subjective as for twelve months he has been utterly unable to smell anything whatsoever.

In September he began to have occasional vomiting, frequent nausea and disagreeable epigastric sensations, synchronous for the most part with the attacks as above described. Of late he has had a sensation of haziness in his right visual field and particularly has he had numbness and tingling from time to time in the right trunk and in the right arm and leg. One of the scenes described by the patient as of particularly frequent occurrence and of a less complex nature than others is as follows: "I see before me small white balls, one or two at first, but these get larger and larger and multiply again and again, the increase in their size being accompanied by a feeling of intense fear on my part, and when they are about me in their greatest numbers they suddenly disappear." The phenomenon of multiplication and increase in size is characteristic of whatever visionary objects he sees. A feeling of detachment and dreaminess accompanied by fear is also present and the evil odor is constant.

On examination he is a small, rather undersized man apparently of the age stated. He may be described as intelligent, keenly alert, interested in himself, striving to make every word describe exactly his condition for the doctor's benefit. He is perfectly well oriented in long distant and recent and contemporaneous events. His ocular fundi show a certain tortuosity in the arteries; the disks are slightly congested but not edematous. Both pupils are slightly irregular but can scarcely be described as sluggish to light or on convergence. He has no tremor in his lips and has no speech defect whatsoever. His gait is normal; no tremor in his hands; sensation everywhere good. The right knee jerk is slightly less active than the left; the right plantar reflex is rather less active than the left, though neither is changed in type. The right abdominal reflex is less than that on the left side. No sphincter trouble. A serological examination of his blood showed a positive Wassermann reaction; an examination of the spinal fluid showed a lymphocytosis of 27 cells per cubic millimeter, an excess of globulin, and a strongly positive Wasseremann reaction. According to most authorities this serological formula is demonstrable proof of this man being a general paretic, but his clinical examination would tend to show him rather as suffering from a localized lesion in the tip of one or the other temporosphenoidal lobes, in all probability of a pachymeningitic character.

The case is shown as one of cerebral lues of a pachymeningitic type which if left untreated will probably subsequently develop into paresis. Incidentally the case is interesting as affording an opportunity for the observation of a peculiar variety of temporosphenoidal epilepsy; the result of irritation of the uncus and contiguous areas. The mechanics of dreamy mental states have never been satisfactorily given, but in lower vertebrates the hippocampal lobes are enormously developed, owing to the preponderance of the sense of smell in them, so that these brain areas may fill in such lower animals the functions located in man in the frontal lobes.

As each individual goes through, in his development from embryonic to adult life, stages analogous to those through which the race has passed in its evolutionary periods, we may suggest that the hippocampal lobes may fulfill intellectual functions in the infant and in early life, functions which are later more fully sustained by the frontal lobes. Memories contained therein never die, but are, when apparently lost, only more difficult to facilitate to the threshold of consciousness; so irritation of the hippocampal lobes may bring almost to consciousness memories incoordinate and but half resuscitated, which have been thought long ago to be dead.

THIRD DIVISION—DR. PEARCE BAILEY.

Bárány Tests in Cerebellar Disease.—Dr. LOUIS CASAMAJOR presented a case of cerebellar disease, illustrating the use of the Bárány tests in cerebellar localization. Optic nystagmus may readily be divided into two groups: (1) Undulating nystagmus in which the eyes move in each direction with equal rapidity. This is the type ordinarily seen in multiple sclerosis: (2) Rhythmic nystagmus in which there is a marked difference between the rapidity of the movements in the two directions. This is the type seen in labyrinthine disease and cerebellar lesions.

This rhythmic so-called vestibular nystagmus is spoken of as nystagmus to right or to left according to the direction of the rapid movement of the eyes. Thus when the rapid movements is toward the right and the slow to the left, it is said to be nystagmus to right. The nystagmus is always increased when the patient looks in the direction of the rapid movement and lessened when he looks in the direction of the slow one.

While in cerebellar disease the resulting nystagmus is usually in the direction of the side on which the lesion is located, nevertheless this is not invariably the rule, for in these cases daily fluctuation in the intensity and direction of the nystagmus occur. Hence we must find a more certain method of approach in these cases and this method is afforded by the Bárány tests by which we determine the activity of the vestibular apparatus governing rythmic nystagmus, *i.e.* the semicircular canals.

Bárány, in 1907, elaborated tests by which the functional activity of the auricular vestibula could be determined.

A brief outline of the technique is in order:

1. *Rotary Nystagmus.*—The patient with eyes closed is rotated in a revolving chair 10 times in about 20 seconds. After being stopped, he shows nystagmus in the direction opposite to that in which he was turned. That is, if he

had been turned to the right, expressed by the military order—"right about face"—the resulting nystagmus is toward the left. In normal individuals the direction of the nystagmus after such turning is about 40 seconds according to Bárány.

2. *Caloric Nystagmus.*—With the aid of an irrigating apparatus the ear to be examined is irrigated with water at a temperature of about 86 deg. Fahrenheit. The eyes are watched and the onset of nystagmus, which in this case is always in the direction away from the ear irrigated, is noted. A convenient, though a not very accurate estimation of the irritability of the vestibula is obtained by recording the length of time required by the irrigation to produce nystagmus on the two sides.

The practical utilization of these tests is shown in the following cases:

M. S.—21 years of age, single, German, waitress, was referred to the third division by Dr. Conyers Herring on October 11, 1912, complaining of dizziness, diplopia and headache. Family history and early life negative. She denies luetic infection. Does not indulge in alcohol.

Present Illness.—In February, 1912, the patient finding herself 2 months pregnant took quinine to produce an abortion, 3-5 gr. pills q d for one week. At this time she suffered a great deal from dizziness, which passed away when she discontinued the quinine. The abortion was later performed by operation. Hereafter the patient was well until the early part of August, 1912, when she began to complain of continual dizziness and headache. She also noticed at this time that she would see double when she looked at distant objects, while for near vision there was no diplopia. The headache is frontal and almost constant at times varying in intensity. There never has been any nausea or vomiting. About a month before the onset of this headache, the patient noticed that her eyes were unequal in size. She does not know whether they were always this way, whether one has grown larger or the other smaller.

Physical examination on admission showed a well developed young German woman, who in walking and standing has a tendency to fall to the right. There is no paralysis, tremor or incoordination. On showing her teeth there is a slight right facial weakness. There is some adiadochokinesis on the right. Marked asynergia. Her deep reflexes are very active and equal. No Babinski or clonus. The right epigastric and abdominal reflxes are less active than those of the left. No sensory disturbances.

Laboratory reports: Urine negative, blood Wassermann positive. In the past 3 weeks the patient has received two injections of salarsan 0.6 grams and six inunctions of mercury ointment gr. xl q d between the two salvarsan injections. Has made practically no improvement.

Physical examination now shows practically the same findings as on admission. Nystagmus unchanged, right facial weakness a little more marked. Slight cerebellar ataxia in right arm and leg. Adiadochokinesis marked in right arm. All reflexes active and equal.

Dr. Holden's report on the eyes.—Corneal sensibility normal. Pupils unequal; right greater than left. Reaction normal. Mobility normal. In constant diplopia with red glass. Left palpebral aperture narrow. Vision right 20/20, left 20/40. Fields slightly contracted. Fundi normal.

Interpretation: Inhibition of left cervical sympathetic. The most prominent feature is the nystagmus which is spontaneous, rotary, and caloric.

Spontaneous Nystagmus.—Eyes in mid line—no nystagmus; coarse horizontal and rotary nystagmus to right; fine rapid horizontal and rotary nystagmus to left; coarse irregular vertical nystagmus upward. The results of the Bárány tests are of interest.

Rotary Nystagmus.—Turning to right 10 X; head upright; coarse horizontal and rotary nystagmus to left for 45 seconds. Turning to left 10 X; head upright; coarse horizontal and rotary nystagmus to right for 55 seconds. (Interpretation: Right labyrinth less irritable than left.)

Caloric Nystagmus.—Water at 86° F. Head upright. Irrigating right ear: Horizontal and rotary nystagmus (slight) to left 1 minute 30 seconds. Irrigating left ear: Horizontal and rotary nystagmus (active) to right after 45 seconds. (Interpretation: Right labyrinth less irritable than left.)

Hearing: right ear watch at 2 feet; left ear watch heard at the same distance. The following is an analysis of the present case:

(*a*) Local signs: 1—right facial weakness; 2—diplopia on looking at a distance, possibly very slight degree of external rectus palsy (rt. N. VI. ?)

(*b*) Vestibular mechanism signs: 1—horizontal and rotary nystagmus in all directions, most marked toward right; 2—decreased irritability of right labyrinth to turning and caloric tests. That is irritation of right vestibular mechanism with decreased conducton from periphery.

(*c*) General cerebellar signs: 1—dizziness; 2—tendency to fall to the right; 3—slight cerebellar ataxia on right; 4—adiadochokinesis on right.

(*d*) Pyramidal tract signs lacking: 1—muscular power not disturbed; 2—no change in reflexes.

This case is then offered as one of right cerebellar hemisphere lesion, probably new growth on account of the history of gradual progression. It is possibly a gumma. In favor of this is the positive Wassermann. Against it is the failure of improvement on active antiluetic treatment. Possibly it is a cerebellar neoplasm which has no relation to the syphilitic infection.

A final point of interest is the remarkable susceptibility this patient showed to the action of quinine in that she showed dizziness after administration of very small doses of the drug. It is possible that in this case the cerebellar growth at the time of the ingestion of the quinine was not of sufficient size to cause symptoms, but its presence intensified the action of quinine in causing irritation of the vestibular apparatus.

In this connection I wish to mention Bárány test results of another young woman who was on the service of the Third Division the past summer.

S. P.—Age 31, was admitted Aug. 3, 1912 suffering from undoubted signs of a tumor of the left cerebellopontine angle. Choked disk with beginning atrophy, 6th, 7th and 8th nerve paralysis on left. Adiadochokinesis on left, together with some very slight cerebellar ataxia. No change in the deep or superficial reflexes. In this case also the nystagmus was a prominent feature.

Spontaneous Nystagmus.—Eyes in medium line; slight horizontal and rotary nystagmus to right; looking to right marked rapid horizontal and rotary nystagmus to right; looking to left, irregular course and rotary nystagmus to left.

Rotary Nystagmus.—Turning to right, horizontal and rotary nystagmus to left 11 seconds; turning to left horizontal and rotary nystagmus to right, 7 seconds.

Caloric Nystagmus.—Water at 84° F. Head upright: left ear no nystagmus after two minutes; right ear slight horizontal and rotary; nystagmus to left after 1 minute 15 seconds.

Interpretation: Vestibular nystagmus caused by the irritation of the intercranial vestibular mechanism of both sides, right greater than left. Loss of irritability of right labyrinth and marked diminution of the left.

Dr. Taylor did a two-stage operaton on August 23, removed a soft tumor about one inch in diameter from the left cerebellar hemisphere where it overhung the cerebellopontine angle. Patient died a few days later of pneumonia. Autopsy refused.

Society Reports.

NEW YORK ACADEMY OF MEDICINE.

Sixty-fifth Anniversary Meeting, Held November 21, 1912.

DR. WILLIAM K. POLK IN THE CHAIR.

The Doctor's Future.—Dr. CHARLES L. DANA made this address in which he considered the subject in its relation to the advances in public hygiene. He said that the position of a prophet was one of much delicacy and he did not pretend to have the qualifications of a sound and competent soothsayer, so he could not look very far ahead. There were, however, certain conditions and tendencies which were very much in evidence. These were not guesses but facts, and by recognizing and interpreting them one could make some inferences as to the immediate future. The number of physicians had increased much faster than the population and the number of medical colleges had increased until there were one hundred and fifty-one in 1900. Since that time they had been decreasing in number and improving in quality. There were now about five thousand fewer medical students than seven years ago. Germany had one physician to every two thousand population, while we had one to every five hundred population. There was going to be a further decrease in the number of students, for the community was awaking to the fact that it must have really well educated and well trained medical men and that this was expensive. The disease and mortality rates were steadily decreasing and there would be less need of so many physicians. The decrease in the number of medical men would, however, probably stop before it reached the German ratio. Perhaps the American doctor was an important and useful citizen for he seemed to be more esteemed and ranked higher socially than in other countries. As the number decreased it was reasonable to expect that those left would have more to do and would be in a better economic position. There were, however, disturbing factors. Charlatanism throve and the patent medicine fungus clung to every phase of civilization. They had the drug counter practice and the various obsessive and commercial cults with which to contend. These might not be so much a hindrance to the doctor for "fooling with disease always brought disaster." The death rate had fallen until it was now from one-third to one-half what it was thirty years ago. Many agencies had contributed to this result. There was in consequence a more enlightened community in respect to health laws and prevention of disease, and, as a result, a steadily diminishing mortality and morbidity rate. There was also developing a change in the methods of treatment. In the future drugs would be given more, but more wisely, and they would be not exactly drugs, but chemical and mental foods, glandular extracts, and the protective sera. More cures would be made and the periods of illness would be shorter. There was a tendency to institutional and colonization treatment of certain classes of the chronically sick. In the future state, insurance of the working classes would be a modifying agency which the doctor would have to take into consideration. The doctor had always helped on movements which had lessened his work and had thus committed honorable harakiri so far as his own personal fortunes were concerned, and he would help along this movement still more. Thus he became a more important man in the community and in the management of public affairs. In managing the health of the Nation he had a greater function than in prescribing for the individual. Medicine would become a part of statecraft and doctors would direct affairs of State more and lawyers less than in the past. Meanwhile the progress of prophylaxis was going to be slow and all doctors need not leave their clinics and plunge into the crusade. They could show active sympathy and render assistance by daily personal teaching and by evincing genuine public spirit. The doctor's cue was to oppose institutionalism in so far as was wise. All did not wish to become lodge doctors, government doctors, or institutional doctors. There must be an opportunity for high individual effort, for talent to rise, and for genius to reach its proper level. In regard to the teaching of medicine, the day would come when the institutions for graduate study would be under control of the regents or its equivalent. The day of casual teaching would pass. All really great hospitals would be allied with universities. The hospitals would be under the medical control of fewer doctors and these would give a definite part of their time and it was to be hoped that they would be paid for it. There would still be room for private work. The old fashioned doctor and general practitioner was a splendid figure and a useful person in his day, but he was badly trained, often ignorant, and made many mistakes; force of character and a genial personality could not make a diagnosis of appendicitis or recognize streptococcus infection. The old general practitioner was going and it was a good riddance. There was developing a general practitioner of higher type, soundly educated, and knowing the human body, knowing enough both of medicine and surgery to recognize rare as well as common diseases, and also knowing his own limitations. He could be human and benignant, too, and always should be honest. This new type of family doctor was not going to be swept aside by a group of specialists. These could only adorn and enrich his progress. The specialist would till his little field, the internist would gather. The surgeon of the large centers would become more and more specialized. All over the country would be small hospitals where the general practitioner and the surgeon would do traumatic and emergency work. It was to be hoped that the surgeon would learn to take a keener range of view and become a little less appropriative, objective, and technical, less amazed at his own resources, more thoughtful, sympathetic, and touched by awakening social conscientiousness, becoming beloved for what he would not do as well as for what he would do. Women physicians had been decreasing in number faster than men. They had done good work, but not brilliant or constructive work. There was a distinct field for them in laboratories and institutions. They were quick to see the need of social reforms and a great help in preventive medicine. The doctor of the future would be a schoolhouse doctor. There would be a bureau of child hygiene in every town; the doctor would make teaching easier and better; he would be very useful but very expensive and very much beloved. Now he was none of these things. He would see that workers were protected from long hours, bad sanitary conditions, dangerous trades, and accidents incurred in work. He would see that the poor as well as those not poor had better opportunities for amusement. The people could do without faster transportation and without bigger business, but they could not do without these reforms. "Take to your hearts a saner view and warm your souls with more useful fires; guard the child, bring it up to be healthy and morally sound; guard the home and the individual so that he will not be fed on poisons or live in foul conditions; keep the community free from disease, from insanity, from weakmindedness, depravity and infections; make them breed healthy children and live long, sane, healthy lives—greed and dishonesty will spoil every one of my visions."

The Doctor's Future.—Dr. ALGERNON T. BRISTOW read this paper in which he considered the doctor's future in relation to national medical insurance. He said that the medical profession had for years been trying to accomplish the impossible experiment of getting blood out of a stone. It had blamed the superabundance of hospitals, dispensaries and the numerous undoubted abuses of these public charities for the sterility of its experiment. It had never seemed to occur to them that they had been trying to accomplish the impossible. The science of medicine differed from the other learned professions in that it was a necessity to the public. It might become a luxury to the rich, but to the poor man medicine was a necessity. A man could die without the intervention of the clergy, and if he had little property the lawyer had no interest in him, but he could not die without the doctor except by the kind assistance of the coroner. Dr. Bristow cited from the investigations of Scott Nearing, showing that 90 per cent. of the adult males in the United States had an annual income of less than $800, 75 per cent. less than $600, and fully 50 per cent. less than $500 per annum. More recently John A. Kingsbury, general agent of the New York Association for Improving the Condition of the Poor, had said that at present $1200 was essential for the maintenance of a normal standard of living for a family of five, man, wife, and three children. An income of $900 would provide only the minimum of nourishment and comfort and would not meet any extra demands that might be made on the family. Such families had to economize in every way and in times of sickness must depend on the free dispensaries. The fact was that the vast majority of city dwellers had the narrowest possible margin between their fixed charges and their total income and the same was true of the dwellers on the land, with the difference that for the latter it was possible to live off the soil, at least in favorable years. They were not quite so badly off in case of sickness as the dweller in the large city, whose income was cut off when he took to bed and who had no farm products stored in his cellar to feed hungry mouths. As a result of these economic conditions the people had flocked to the dispensaries, had filled the hospital wards and had

become pauperized not from choice but from necessity. The result of all this to the medical men had been that a few with wealthy and fashionable clients had grown rich, while the larger proportion with clients of the middle class or of those with moderate but adequate incomes made a comfortable living, but the vast majority of medical men were as poor as their patients. To sum up the condition which then presented itself, they had, on the one hand, the greatest number of citizens with fixed charges almost equal to their incomes who were unable to bear the financial strain of illness and disability combined and were compelled to seek charity. On the other hand they had a body of men whose education was the most costly of any of the learned professions who were compelled to contemplate with such calmness as might be the curtailment of their incomes by the advances of prophylactic medicine, while not only were their living expenses steadily increasing but also the cost of their education in both time and money. The people needed medical attention for which they were unable to pay and the medical profession needed some relief from the inroads which science and the State were making on the incomes of its members. For a number of years in this country and for a much longer period in Europe the people had been combining in associations of sick-benefit lodges in order to get medical attention which was within their means. Thus the resort to lodge and contract practice had been the answer to the problem of obtaining medical attendance in their homes when they needed it. Dr. Bristow quoted statistics showing the extent of lodge practice in New York, there being over 275 mutual benefit societies in Greater New York. This was exclusive of the Figli d'Italia, of which there were over 45 in the city. In New York there were about 500 Jewish physicians engaged in lodge practice, getting from one to two dollars a year to attend to five or six hundred members, and in many instances looking after the families of the members for one dollar additional per family. That the practice itself was poor and that the services rendered were second rate was obvious from the amount of work at low pay which this lodge practice entailed. Lodge practice in this country was not confined to the two nationalities referred to above. There were many native Americans in the rural districts who belonged to the Foresters and countless other organizations with fanciful names. Various county societies had at times issued pronunciamentos against these societies, and had threatened with expulsion many of their members who were under contract to lodge or benefit societies. One such physician, on threat to bring him before the Kings County Society, replied: "If it is a question between my wife and children and the County Society I shall choose my family every time." The reply seemed convincing. Lodge practice was with us and it was here to stay. Nothing that this body, or the County Society, or the State Society could do would change the situation one hair's breadth so far as the continued existence of these societies was concerned. From the standpoint of the people lodge practice was nothing more than a system of medical insurance. No one thought it wrong to take out an accident policy, a liability policy, a sick benefit policy, or a life insurance policy in an old line company. Why should it be proper for the members of this academy to hold sick benefit policies and wrong the poor man for doing the same thing according to his needs and means? What was the difference between the two cases? Briefly, it was a difference of method. The old company paid its beneficiaries a weekly indemnity for a specified time and the insured employed his own physician and paid him. There is no question but that this was the better way both for patient and physician. Was it possible to apply the same principle to the poor man? The cost of the old-line policies was entirely beyond the means of the poor man. If they could bring themselves with fairmindedness to admit the necessity of medical insurance for the large mass of the people, a long step would have been taken in the direction of the solution of the problems which had been vexing them. Dr. Bristow said that it was his opinion that the future of the doctor was going to be largely influenced by the view which they as medical men took of medical insurance. They could either recognize the facts and meet them with advantage to themselves as well as to the people whom they served, or they could blindly shut their eyes to the facts and cry that it was unethical to attend the poor man for a price within his means. When the English government incorporated the principle into a law and created a system of national insurance against sickness they might be certain that ultimately the same principle would gain recognition in this country. Dr. Bristow begged those interested in this subject to read the supplements to the *British Medical Journal* entitled "National Insurance," where they might see the magnificent example that the British Medical Association was setting their own organization of what it was possible to accomplish by loyalty and unanimity of purpose when the interests of the medical profession were involved. The various sections of the British Medical Association had passed resolutions on the subject in which the most important points were the income limit, the choice of a doctor, and the passing of the control of the insurance from the hands of the friendly society to the doctors. This was in accord with sound economic principles. No insurance company could exist for a year if its rates were determined by the insured. These were subject to the calculation of the actuaries, and somewhat similar methods would have to be adopted in any scheme of State or national insurance. Of one thing they might be sure: the medical profession would never shirk its responsibilities and would ever consent to suffer wrong rather than withhold a helping hand.

Dr. Abraham Jacobi said that both speakers had referred to the medical men of the future, but it should be remembered that it was not only the medical profession, but the State and society that would be responsible in building up this future. The State must help them a great deal. If they would look over the lists of men active in sanitation they would find that most of them had not been specialists, but that this work had devolved on the general practitioner. The general practitioner had many opportunities presented to him that others had not and he had gained a great deal that the specialist did not have the opportunity of getting. He was giving better service not only to his own patients but to the community at large. Dr. Jacobi referred to the passing of the old-fashioned American home and with the old-fashioned doctor, but he was confident that saner consideration would yet restore the home to its former importance and with the return of the home would come the return of the family doctor, modified in a sense but still a general practitioner and the friend and confident of his patient.

MEDICAL SOCIETY OF THE COUNTY OF NEW YORK.

Annual Meeting, Held November 25, 1912.

The President, Dr. Charles Gilmore Kerley, in the Chair.

Executive Session.—Dr. John Van Doren Young read the minutes of the previous Stated Meeting, which was followed by the reports of the various committees, among which were the following:

Report of the Committee on Legislation.—Dr. E. Eliot Harris submitted this report. He said that there were introduced into the Legislature during 1912 bills to the number of 2,859, which were amended so as to raise the printed number to 3,527 bills in both houses. Of that number 553, or about 19 per cent., were enacted into laws. These bills were received by the Chairman of the Committee on Legislation, divided among the members of the committee for review, and were reported promptly at the meeting of the full commmittee. The committee then acted on these bills and submitted its report to the next meeting of the Society. The committee had also to consider many communications received from other societies on matters of medical legislation, such as prison reforms and bills affecting marriage licenses. The report then reviewed the bills that they had been interested in promoting which embraced bills affecting the Tenement House Law, Domestic Relations Law, Deportation Law, the Pure Food Law, the Labor Law and the Agricultural Law as well as those bills affecting more directly the questions of public health and the practice of medicine. The committee had not only been active in constructive legislation but had done a good work in defeating the antivivisection bills that were introduced. This class of bills demanded the greatest activity on the part of the medical profession. They would no doubt be introduced into the next Legislature and would require active work on the part of all the committees on legislation and animal experimentation in order to secure their defeat. The report recommended that the Legislative Index be continued for the coming year.

Report of Committee on Hospital and Dispensary Abuse.—Dr. William S. Thomas submitted this report. He said that this committee, which was instructed to investigate and report upon the subject of lodge and contract practice as well as upon hospital and dispensary abuse, had completed its work and laid its report before the Comitia Minora. They had decided that, in view of

the importance of the report and the time needed for its consideration and discussion, a summary should be made and read before the Society. The committee found that as it was to exist for one year only, and if it was to be limited to its stated appropriation, it would have to confine its activities largely to the investigation of the dispensary abuse. The investigation of lodge and contract practice had been referred to a sub-committee. The dispensary abuse had been investigated in two separate and distinct directions. First, individual members had visited representative institutions during their working hours and reported to the committee in writing upon the details of their management in reference to the existence of abuse of charity. Second, the committee engaged the services of an expert social worker to investigate the subject from the standpoint of the patient. In 1911 over 665,000 new patients were treated in the dispensaries of this county. In order to get a true idea of the proportion of those who applied this year unworthily it was decided to investigate in their homes 1,000 applicants without discrimination, as their names appeared on the books of 13 representative dispensaries. The results of these investigations had been thoroughly digested and would be laid before the Society at its February meeting. Of the 1,000 applicants investigated, 255 of them, or 25.5 per cent., could not be found at the addresses given. Of the remaining 745 applicants whose homes were visited about 10 per cent. seemed to be able to pay for medical treatment. A surprisingly large proportion of the applicants resided out of town. The investigation of dispensaries by individual members of the Committee proceeded on the lines suggested by the regulations of the State Board of Charities governing dispensary administration and the following points were especially considered: 1. Posting of the law in dispensaries. 2. Registrars and their capability for their work. 3 Admission of applicants, the admission and the representation card. 4. Enforcement of the laws against false representation. 5. Regarding the payment of fees in dispensaries. 6. Location of patient's homes in relation to the dispensary. The results of the investigation in these particular points, together with the committee's recommendations, would be laid in full before the Society at the February meeting.

Annual Report of the Counsel.—Dr. ALMUTH C. VANDIVEER submitted this report.—He stated that the general character of the work done was best shown by referring to the individual prosecutions. The work done had covered every form of violation of the Medical Law. The counsel felt that the active and vigorous prosecuting of medical quacks had won the respect of the entire community of the City of New York. During the past year the counsel of the Society had been consulted by the Board of Health, the Police Department, the Tenement House Department, the State Board of Charities, the Committee for the Prevention of Blindness, the Charity Organization Society, the State Education Department, the United States Post Office Department, the United States District Attorney's Office and the District Attorney's Office of the County of New York. The work of the Society in protecting the public health had met with the approval of the Courts and the public officials. The counsel felt that the Board of City Magistrates of the City of New York and the Justices of the Courts of Special Sessions now gave their careful consideration to all medical offences prosecuted before them. The counsel had prosecuted violators of the medical law, had investigated complaints concerning violations of the law by unlicensed persons when submitted to him, had inquired into the character and practice of physicians, whether members of the Society or not, had defended in the civil courts actions brought against the Society by members of the Society, and had rendered to the Comitia Minora and to the Board of Censors legal advice upon all questions presented to him. Persons practising medicine under the cloak of religion had been arrested, tried, and convicted upon the complaint of this Society. Institutions attempting to grant degrees to practise various branches of the healing art had been investigated and prosecuted. Fraudulent medical concerns carrying on their business in such a way as to avoid coming within the law of the State of New York had had their activities called to the attention of the United States Post Office inspectors. Arrests and prosecutions had followed upon the complaints submitted by the counsel to the Post Office authorities. During the past year at least three hundred persons had called at the office of the counsel to have their queries concerning medical questions answered. The counsel then reviewed a number of cases that had come before him, among them those of Schmidt, Kunizer, and Ewald. He called special attention to the conviction and subsequent pardon of Edward E. Conrad and George J. Gladman, each of whom was convicted in the counties of New York and Onondaga, respectively, of an attempt to commit the crime of abortion. The pardon of these men had demonstrated to the counsel the absence of any express provision in the law in the State of New York to meet such a situation. The statutes provided that when a convicted lawyer had been pardoned he might apply to the Appellate Division of the Supreme Court for reinstatement to practice. There was no such provision in the Medical Statute. There was, however, a provision to the effect that no person who had been found guilty of a felony might thereafter practise. It had been contended by the counsel for Dr. Conrad, the Honorable Asa Bird Gardiner, that his pardon completely wiped out his guilt and restored him to all his rights and privileges which he possessed before his conviction. The following paragraph was suggested for insertion in the Medical Statute: "Where a duly licensed physician is convicted of a crime and thereafter pardoned, such pardon does not restore his right to practise medicine, but such practitioner may within three months after the receipt by him of a pardon make application to the Board of Regents for restoration to practice." There was in the Medical Statute setting out the causes for the revocation of licenses of practitioners of medicine no statement to the effect that unprofessional or dishonorable conduct, aside from fraud and deceit in practice, was a sufficient ground to revoke a practitioner's license. There was such a provision in the Dental Law, and in the opinion of the counsel there should be such a provision in the Medical Law. It was also the opinion of the counsel that the Board of Regents should be given the authority to suspend a practitioner of medicine from practice for such a time as in their discretion the charges of which he had been found guilty merited. The Appellate Division had such authority as regarded lawyers and the State Board of Regents had such authority as regarded dentists. In the opinion of the counsel, incurable insanity should also be a ground for the revocation of a license of a practitioner of medicine. There was no such provision at the present time. A statute had been recently passed prohibiting corporations from practising law as corporations or through the medium of hired lawyers. The Court of Appeals, in the Woodbury case, held that a corporation might not practise medicine by employing registered physicians. This decision should be crystallized into a legislative enactment following the same lines as the drastic statute in regard to the practice of law by corporations. Mr. Vandiveer then reviewed the case of Vernon Cole, who was prosecuted for practising medicine under the cloak of Christian Science and of several other individuals practising under other religious tenets. A great number of complaints concerning druggists who were practising medicine illegally had been investigated and when sufficient evidence had been obtained a vigorous prosecution of the offender had been presented in court. Mr. Vandiveer also told of the work done in investigating the practices of midwives and certain clairvoyants. He stated that he regarded as one of the greatest compliments to his work the fact that the investigators employed by him, Mrs. Frances Benzecry and Mr. Stephen Fontana, were believed by all the judges before whom they appeared. In many cases the unsupported word of these witnesses had obtained convictions. The strict supervision by means of investigations had caused a wonderful change in the fraudulent practices of medical concerns in this city. Complaints as to the taking of great sums of money from poor persons were less frequent than they were three or four years ago. Business concerns now interviewed the counsel of this Society concerning the reputation and standing of persons whenever they were connected with medical practice in any way whatsoever. During the period from November 25, 1911, to November 22, 1912, $4,100 in fines had been awarded to the treasurer of this Society, but it might readily be seen that the expenses of prosecuting violations of the Medical Law were about equal to the fines imposed.

Annual Report of the Comitia Minora.—Dr. JOHN VAN DOREN YOUNG made this report. He stated that the Comitia Minora had held eight Stated Meetings and three Special ones, and that there had been a quorum at each and every meeting. At the eight Stated Meetings the average attendance had been 220 and the total attendance 1765. There had been added to the membership of the Society during the year 129 new members and 21 candidates for election at the present meeting. Last year the membership had been increased by 184 members. There had been 20 deaths during the year and 21 resignations. At the present time the membership numbered 2,469. This report then reviewed the amendments to the Constitution and By-Laws that had been adopted by the So-

ciety at the Annual Meeting of November 27, 1911. The report reviewed the executive work and the scientific programs of the past year and showed that 170 members of the Society had taken part in the executive work, that 17 had read papers, and 41 had discussed the same, making a total of 228 who had served the Society during the year.

Spasm of the Pylorus in Infants and Congenital Stenosis of the Pylorus.—Dr. Henry Koplik read this paper. He said that in his first paper on pyloric spasm and pyloric stenosis he made an analysis of those cases in which the spasm with only a relative amount of stenosis played a leading rôle and those in which a distinct growth of congenital origin existed at the pylorus with symptoms of spasm of the pylorus as an accompaniment. Strange as it might seem they could not as yet say that all were agreed that such a condition as pure spasm without any anatomical change in the structure of the pylorus existed as a distinct uncomplicated entity. Pfaundler maintained that all the cases with which Dr. Koplik's paper dealt were those of pure spasm. He had since modified his views, dividing the cases of pure spasm of the pylorus from the true congenital hypertrophy of the tissues of the pylorus. Only this should be borne in mind that Ibrahim reiterated his doubt as to the existence of a true pyloric spasm in infancy without any anatomical changes at the pylorus. Cantley had published post-mortem cases of pure spasm of the pylorus and Dr. Koplik had recently seen a case occurring in the surgical service of the Mount Sinai Hospital which, in every way, seemed to have been a case of spasm of the pylorus with pyloric tumor as met in congenital hypertrophy. They had thus cases of spasm of the pylorus which during life might or might not give a palpable tumor and which at operation gave a palpable tumor and at post mortem the tumor persisted. It was even conceivable that microscopical examination of such a pylorus would show the tissues thickened. Whether this thickening was to be interpreted as a hypertrophy or the result of contraction of muscular fiber, future investigations would show. Pylorus spasm with relative stenosis of the lumen of the pylorus was therefore a distinct entity. All knew that the infant stomach was exceedingly sensitive to changes in the composition and reaction of the food. It was rather far fetched to try to compare the conditions in infancy with those met in the adult. His classification of all of the cases of this affection was as follows: (1) Pure spasm of the pylorus and the pyloric end of the stomach without any palpable pylorus, with peristalsis and explosive vomiting, loss of weight, and consequent inanition. The constipation present might be only a relative constipation, *i.e.* some fecal matter passed, or there might be several movements, green and fluid, in twenty-four hours, or of a brownish color; again the constipation might be absolute and on forced movement of the bowels, little or no fecal matter passing. (2) Pyloric spasm with relative and actual stenosis, with slight or marked thickening or hypertrophy of the tissues of the pylorus. Such cases gave rise to vomiting of the explosive type, coming soon on after birth and continuing for some time with a palpable pylorus at first or subsequent to the onset of the symptoms. The pylorus could be felt to harden under the finger at the time of greatest peristalsis of the stomach and soften after vomiting had occurred. There was constipation, complete at first, which after some duration of the disease mitigated and fecal particles might appear in the stools. There was marked progressive atrophy and inanition. (3) Congenital hypertrophy of the pylorus so-called with stenosis. These cases, which were only relatively more marked in their symptomatology to the previous class, gave exactly the same symptoms; there was the same spasm of the pylorus as an accompanying symptom; the pylorus could be felt just as in the previous class, the peristalsis was just the same, and the constipation was the same, only more marked. In fact, clinically it was the same condition that was present, only it might manifest itself in more aggravated forms than in the cases in which the hypertrophy and stenosis were not so marked. He thought, therefore, they were practically the same set of cases and might show considerable enlargement and hardening of the pylorus than was evident before the operation. Recovery depended on the resistance of the patient, the skill with which the case was managed, and the power of the sufferers to overcome the baneful effects of inanition. The question of prognosis was also bound up not only in the course of treatment but with the amount of spasm and stenosis present. Vomiting which might be violent, peristalsis, and loss of stationary weight were no indications for surgical interference, however alarming the symptoms might appear at times. Such cases should never be submitted to the surgeon. From a careful study of all his cases, numbering twenty-five, he believed that cases of congenital pyloric stenosis with spasm and hypertrophy of the tissues of the pylorus could in the vast majority of instances be brought through without surgical interference. He thought that the cases which must come under the knife must be exceedingly rare. Reports of the fatal cases were not always published. The mortality of these cases with some operators was fully fifty per cent. Dr. Koplik thought that inasmuch as ninety per cent. of his apparently hopeless cases had come through without operation he would submit that the risk involved in the operative interference was so great at present as not to encourage them to place any of these cases in the hands of the surgeon. Einhorn had proposed to pass through the stenotic pylorus a bucket and on the leading string of this bucket a dilator. This treatment of dilating the stenosis was quite attractive if it could be accomplished in the extreme cases. This was absolutely impossible in some cases; often a filiform probe could not be passed, much less a small bucket or guide. Any pylorus which would admit the passage of a bucket guide and dilator would recover without this procedure. Another procedure proposed had been the passage of a duodenal catheter, and leaving it in the lumen of the pylorus for a length of time, or feeding the patient through such a catheter in the duodenum according to the methods advocated by Einhorn and Hess. This procedure he believed to be of limited value also. In marked hypertrophy and spasm he has found that the catheter failed to pass. They were therefore reduced to the former methods which included exceedingly patient study of the feeding, lavage at times, opium, and what was of the greatest moment, persistent attention to details. Dr. Koplik closed his paper with a reference to the direction in which the feeding might take in the future. In a very suggestive series of studies by Cowie and Lyon on the acid control of the pylorus in infants, the mechanism of the opening and closure of the pylorus, as explained by Pawlow in the adult, had been carefully worked out in infants. It appeared to Dr. Koplik that in the feeding of infants suffering with pyloric spasm and hypertrophy more attention should be given to the relative acidity of the stomach content than had been done in the past. In this way a relief of symptoms might be more readily attained.

Dr. Henry Dwight Chapin said that he would like to go on record as having expressed the opinion that many of these cases of pyloric spasm got well under careful dieting and the giving of alkalies which reduced the spasm.

Dr. Albert Ashton Berg believed that the diagnosis of these cases of pyloric stenosis in infancy rested upon the internist, especially those cases of pure spasm with a relative hypertrophy. It was a very important fact that the surgeon should ask for greater diagnostic acumen. It was an accepted law among pediatrists that when an infant lost one-third of its body weight it went on to death; when this amount in weight was lost there was no doubt about a fatal ending. From a surgical standpoint there was no doubt but that in these cases the burden was on the shoulders of the physician who first saw them. More should be done toward differentiating the cases that were or were not relieved by medical treatment. The cases that should be referred to the surgeon should be those that could not be relieved by medical means.

Dr. Howard Lilienthal said that he had had three cases of pyloric stenosis occurring in infants; one got well without operative interference, another got well, making an operative recovery, but the third died because of leakage. Dr. Lilienthal thought that the time to operate was as soon as it was proven that there was a complete obstruction at the pylorus. The first effort in these cases should be the attempt to relieve by medical means; next, they should attempt the passage of some instrument if this was possible; if unsuccessful and the instrument could not be passed through the pylorus, they should try the fluoroscope with the bismuth meal. If nothing went through and the patient was losing weight he should be at once sent to the surgeon. With regard to technique, he believed in a quick operation without the use of clamps; without the employment of clamps there was little danger of leakage and no hemorrhage would result.

The discussion was continued by Dr. Max Einhorn and Dr. Godfrey R. Pisek.

Bone Transplantation for Pott's Disease of the Spine.—Dr. Fred H. Albee read this paper. He said that too great emphasis could not be placed upon the mechanical element of crushing of the vertebral bodies in the prolongation of the convalescence of Pott's disease. He also believed with Ely and others that bony fixation of tuberculous joints was an absolute panacea. The following summary was offered: (1) The bone splint insert gave firm

fixation the moment it was sutured in place and afforded even before bony union far more efficient immobilization than any external brace or plaster-of-Paris jacket could possibly supply. (2) No normal anatomical structure or support of the spine was severed or destroyed. The full leverage of the spinous processes, which was the only physiological means of holding the spine in hyperextension, was preserved and taken advantage of, thus preventing kyphotic deformity. It should be noted in this connection that the nearer the bone transplant was to the tips of the spinous processes (or the more superficial) the greater mechanical advantage was derived. (3) The operative procedure was superficial and confined to bone and ligamentous structures; therefore, it was of short duration, usually taking from fifteen to thirty minutes, and was associated with a minimum amount of shock and hemorrhage. (4) The bed, into which the bone was placed, was of an ideal nature for a bone graft; it was composed of freshly severed ligamentous and bone structure. It was claimed that one bony contact, of recipient bone to graft, was sufficient for the establishment of a proper blood supply for the latter. In the case of their graft there were two bony contacts for each spinous process involved, and they were only the distance of the interspinous space apart. (5) On account of the fixation being applied internally and directly the vertebræ involved, and those only, the function of the rest of the spine and respiration was not interfered with. Long confinement on a frame, or in a plaster-of-Paris jacket, or spinal brace was no longer necessary. (6) The post-operative treatment was simple in character and of short duration. It consisted of dorsal recumbency on a gas-pipe frame or a firm mattress with a board under it and in the region where the kyphosis came (fracture bed) for a period of five to twelve weeks. At the end of this time bony union had taken place between the bone splint and vertebræ and no further supportive or immobilization treatment by plaster, jacket, braces, etc., was necessary. (7) The field of operation was superficial and distal from the neural arches; therefore, there was no danger of encroachment upon the spinal canal by overgrowth of bone or infection which might arise from operative trauma. (8) If bone union of graft to spinous processes should not by chance occur, the same mechanical effect of the splint action of the bone transplant and the leverage of the spinous processes would still obtain in a large degree. (9) Diseased tissues were not entered. The field of operation was entirely in healthy tissues; therefore, primary union could be expected. (10) A continuous bridge of bone with periosteum and endosteum was furnished, spanning the entire number of vertebræ, which were desired to be immobilized and therefore, should be under the influence of Wolf's anatomic law and become greater in diameter and length as the parts developed. In other words it was an imitation of nature's success. In dogs this bone transplant lost its identity in four or five months and became continuous and homogeneous with the spinous process into which it was placed and as apparently innervated by the same trophic nerves. (11) Perfect immobilization and support of the involved vertebræ in the respiratory area of the spine was secured. (12) The procedure was not a formidable one. The technique was very simple. In three cases the operating time was not over fifteen minutes. (13) When possible a recession of the kyphosis by recumbency on a convex gas-pipe frame should be secured. The bone graft offered great promise of holding permanently the correction obtained; without the artificial support there was a great tendency to a relapse of the deformity when ambulatory treatment was later resumed on account of the inhibition of the tuberculous bacillus to the rapid new bone formation between the diseased vertebræ. (14) Metal splints placed into or on bone would not hold for any length of time because of bone atrophy and absorption; this took place very easily wherever contact was between metal and bone. Therefore the advantage of a bone graft over metal was apparent. (15) One of the most gratifying features of this mode of treatment had been the large amount of kyphotic recession obtained at this time of operation and the first days after in early cases of angular deformities from the straightening effect of the bone transplant sutured under later tension into the dense inter- and super-spinous ligaments. Dr. Albee said his report of bone transplantation was based upon 112 human cases and 18 extensive animal experimentations. The human cases had been 84 cases of Pott's disease, 9 cases of clubfoot, 7 cases of ununited fracture, 6 of paralytic deformities of the feet, 1 osteomyelitis cavity, 1 astragalus transplanted into hip, and 1 paralysis of the wrist. In many of these cases enough time had not elapsed to be safe to draw trustworthy conclusions. But as the bone graft with its periosteum and marrow substance was properly in contact with the recipient bone, he felt that he was safe in expecting permanent results. Attention should also be called, Dr. Albee said, to the fact that the bone graft stimulated an active osteogenesis on the part of the recipient bone itself and thus increased the assurance of permanency of result.

Dr. Robert E. Soule said that such an innovation as Dr. Albee had presented must necessarily meet with the most severe criticism, not alone because of its being another method of treatment but because it was claimed that this was *the* method of treatment above all others to be applied to this condition. The treatment of tubercular joint disease was immobilization. The joints of the spine were the most difficult to immobilize, particularly in the dorsal region, and, owing to this fact, the various methods at present in use were open to much criticism. Under these methods it was necessary to continue treatment for a long period of time and in a great many instances, though the disease was arrested or cured, there would still remain a marked kyphotic deformity; this deformity was the rule and not the exception. Again they found the disease recurring after years of quiescence. Patients were often incapacitated for work not by the disease *per se* but by the weak spine and increasing deformity after the disease had been arrested. Another criticism of these methods was that they were not properly carried out by the average surgeon; it took more skill and experience in making a well applied plaster-of-Paris packet, or in designing, fitting, and applying a properly adjusted brace, or in dealing with the recumbent methods of treatment than the average surgeon possessed. Taking all the objections to present methods into consideration, it seemed to him that the method presented by Dr. Albee offered the best solution of this vexed problem that they had considered up to the present time. It had been his privilege to assist Dr. Albee in his experimental work on the spines of a number of dogs. He had seen these engrafted segments of the spine after varying periods of time removed, gross and microscopical sections made, and felt that this method, so simple in technique, so free from danger to the patient, and so sure of accomplishing absolute immobilization of the diseased vertebrae was the most rational and feasible method yet devised for the treatment of tubercular disease of the vertebral bodies. Cases of Pott's disease from early childhood to adult life with marked paraplegia cleared up after this operation in a much shorter time than could have been expected under the hitherto accepted methods of treatment. The pain disappeared in a very short time, the abscess absorbed, or the sinus closed, and a general improvement manifested itself. One adult was up and about the ward five weeks after the operation, not because it was advisable but because she was feeling so well that she persisted in getting up. She had no other support than that furnished by the engrafted bone splint. In regard to the theory that Wolf's law would apply to this bone graft, time would settle that question. The point that presented itself was when to resort to this bone splinting. The immobilization of three or four vertebrae did not materially hamper the general mobility of the back, yet one did not wish to lock up any joint of the body when its mobility could be of any service to the individual. It seemed to him that these cases presenting bony changes from the activity of the tubercular process as shown by the *x*-ray and clinical findings, those older cases of Pott's disease where acute exacerbations manifested themselves, and cases where the disease had been arrested or cured but deformity still progressed, as was often found in the upper dorsal region, would be cases well selected. As to other cases of questionable type clinical experience and close observation would determine. Dr. Soule asked whether in those cases where ligamentous and muscular attachments were not interfered with and which were engrafted at an early stage of the disease and cured without deformity or evidence of destructive bony changes in the bodies of the vertebrae there could be any objection to the removal at a later period of a sufficient part of the bone graft bridging the spinous processes to restore flexibility. Dr. Albee had made a strong step forward and placed them in a much firmer footing in dealing with bone tuberculosis.

Officers Elected.—*President*, Dr. Brooks H. Wells; *First Vice-President*, Dr. T. Passmore Berens; *Second Vice-President*, Dr. Howard Lilienthal; *Secretary*, Dr. John Van Doren Young; *Assistant Secretary*, Dr. J. Milton Mabbott; *Treasurer*, Dr. Charles H. Richardson. The following were elected as *Censors:* Dr. David Bovaird, Jr.; Dr. Joseph B. Bissell; Dr. John J. McPhee. Seventeen delegates to the Medical Society of the State of New York, to serve two years, were also elected.

Pathological Society of Philadelphia.

At a stated meeting held October 24 Dr. A. Weber, Geheimer Regierungsrat, of Berlin, Germany, delivered an address entitled "Organization of the Health Department and of General Sanitary Conditions in the German Empire," illustrated by lantern slides. He spoke especially of the measures taken to prevent the development and spread of smallpox, cholera, and plague. Smallpox occurs only in isolated instances in Germany since the institution of compulsory vaccination and revaccination. All children must be vaccinated within the first year of life and again at the twelfth year, and in the case of those eligible for the army a third vaccination is practised at the time of enlistment. As a result of these measures the number of cases since the extensive epidemics following the Franco-Prussian war has been a progressively diminishing one. Human lymph was for a time employed, but of recent years only calf lymph is used. Numerous laboratories are provided in various parts of the Empire for the manufacture of smallpox vaccine. Cholera has been practically eradicated from Germany since the great epidemic at Hamburg in 1892. In that instance the disease was spread through contaminated Elbe water used unfiltered. Careful bacteriological examination of the stools is made in all suspicious cases, and in a number of instances cholera carriers have been discovered. The spread of plague is prevented by special attention to rats. It has been shown that the prevalence of plague in rats and in man pursues a parallel line. For the destruction of rats, both on ships and on land, fumigation is practised either with sulphur dioxid or a mixture of carbon monoxid and carbon dioxid. All three of the diseases named are common in Russia and this country constitutes a source of constant danger, particularly by reason of the large volume of emigration from that country. At convenient places throughout Germany bacteriological laboratories have been established to provide means for the early recognition of the infectious disease and it is owing to this circumstance that their spread and prevalence have been greatly diminished. Marked progress has taken place also in the control of other infectious diseases, such as typhoid fever, tuberculosis and others, whose etiological factors are clearly understood, and the mortality from which has fallen greatly within recent years. Especially striking have been the results in the case of diphtheria since the introduction of the antitoxin. On the other hand, there has been an increase in the morbidity and mortality of diseases, like carcinoma and sarcoma, whose etiological factors have not been determined.

Dr. Arthur H. Hopkins presented a communication entitled "Hemolysins in the Fecal Filtrate," relating observations tending to show, contrary to results recorded by others, that filtered extracts of intestinal discharges from patients suffering from various disorders failed with any degree of constancy to exert hemolytic effects, and disposing of the view that pernicious anemia is due to the action of hemolysins of gastrointestinal origin.

Drs. Randle C. Rosenberger and Truman C. Terrell presented a communication entitled "Amebiasis in the Insane Department of the Philadelphia Hospital, with a Study of Tests for Occult Blood." Examinations of the stools of two hundred patients disclosed the presence of *Amœba coli* and also of occult blood in nearly 50 per cent., although the two conditions did not invariably coincide.

Drs. O. M. Perry Pepper and J. H. Austin presented a communication entitled "Some Unusual Results with the Phenolsulphonephthalein Test." They reported three cases in which the results following subcutaneous injection of the drug differed from those ordinarily encountered in tests for the functional capacity of the kidneys. One of these was a case of parenchymatous nephritis in which, while the elimination of the drug through the urine conformed to the normal, there was deficient elimination of chlorids. In another case, one of polycystic kidneys, there was no measurable elimination of the drug, although in other respects the renal function appeared to be well performed until within a short period before death, when uremia developed in conjunction with an intercurrent cholangitis secondary to gallstones. In a third case in which both kidneys had been decapsulated for the relief of threatening uremia the secretory function of the kidneys appeared to be maintained. These observations show that while the phenolsulphonephthalein test is useful for the determination of the functional ability of the kidneys, like other signs, symptoms, and tests it is not infallible.

Drs. James E. Talley and C. W. Laders presented a communication entitled "Relation of the Ventricular Pulse to Tricuspid Regurgitation," illustrated by a profusion of diagrams showing tracings of arterial, venous, and cardiac pulsation.

State Medical Licensing Boards.

STATE BOARD EXAMINATION QUESTIONS.

Arizona State Board of Medical Examiners.

July, 1912.

(*Concluded from page* 1061.)

BACTERIOLOGY.

1. Describe the technique of staining for tubercle bacilli.
2. Define immunity and classify same.
3. Define (*a*) phagocytosis, (*b*) antitoxins, (*c*) vaccine.
4. Describe the gonococcus and give method of staining.
5. Give Koch's rules or dicta in regard to the bacterial cause of diseases.

PRACTICE OF MEDICINE.

1. Differentiate between cerebral vomiting and gastric vomiting.
2. In what diseases does leucocytosis occur?
3. What is the significance of prolonged expiration?
4. Describe the mitral regurgitant murmur; give the topography of the chest, showing where this sound is best heard.
5. Mention the causes and describe the treatment of primary lobar pneumonia.
6. Define angina pectoris. What pathological condition may cause it?
7. On what symptoms would you base a diagnosis of typhoid fever?
8. Give the period of incubation and of the eruption of the exanthemata.
9. What is the cause of syphilis?
10. Give the symptoms and blood picture of chlorosis.

OBSTETRICS.

1. Give the diameters of the fetal head in inches.
2. Give the diameters of the pelvis in inches.
3. Differentiate between normal pregnancy, tumors within the abdominal cavity, and ectopic gestation.
4. What maternal condition would warrant destruction of fetal life?
5. When the action of the uterus is insufficient what measures and remedies may be used to bring about normal contraction?
6. Should you find albumin and tube casts in the urine of a pregnant woman what morbid condition would be indicated, and what would be your treatment?
7. Diagnose placenta prævia and give treatment.
8. What is the principal cause of ophthalmia neonatorum, and what means should be used to prevent it? How would you treat a case?
9. Give position of fundus at three, five, and seven months.
10. Name some of the causes and dangers incident to protracted labor.
11. Make a diagnosis of syphilis in the new-born State something concerning the prognosis.
12. Describe how you would conduct normal labor.

GYNECOLOGY.

1. (*a*) Define endocervicitis, (*b*) symptoms, (*c*) treatment.
2. What are the indications for curettage?
3. Define (*a*) dysmenorrhea, (*b*) amenorrhea, (*c*) menorrhagia, (*d*) metrorrhagia.
4. Mention the varieties of uterine displacements.
5. Define (*a*) urethral caruncle, (*b*) its history, (*c*) symptoms, (*d*) treatment.
6. (*a*) Make a diagnosis from the following history: Woman 26 years of age, mother of three children. Menstruation stopped two months ago. Patient seized with abdominal pain, cramp-like in character, appearance of uterine hemorrhage; rapid pulse, anemic, increased leucocyte count, temperature first subnormal then elevated. Physical examination shows breast enlarged, uterus enlarged, os soft, and mass in lateral fornix. (*b*) Describe in detail the treatment.
7. Discuss the etiology of cancer of the uterus.
8. Describe the clinical history of a large ovarian cyst.
9. Make a differential diagnosis between interstitial fibroids of the uterus and an ovarian cyst.
10. Describe an operation for amputation of the cervix.

SURGERY.

1. What is inflammation? How does inflammation extend and how may it terminate?
2. Give the symptoms, diagnosis, and treatment of phlebitis.

3. Name the inflammatory diseases of bone.
4. How would you arrest epistaxis?
5. What symptoms follow division of the radial nerve?
6. Name the varieties of shoulder-joint dislocations.
7. Name the causes of delayed bone union and give treatment.
8. Differentiate dislocation of the head of the femur from fracture of its neck and give essentials of treatment of each.
9. Describe a method of amputation of the last phalanx.
10. Describe dermoid cysts. In what situations are they most commonly found?

ANSWERS.

BACTERIOLOGY.

1. To demonstrate the existence of *tubercle bacilli* in the sputum: The sputum must be recent, free from particles of food or other foreign matter; select a cheesy-looking nodule and smear it on a slide making the smear as thin as possible. Then cover it with some carbolfuchsin, and let it steam over a small flame for about two minutes, care being taken that it does not boil. Wash it thoroughly in water and then decolorize by immersing it in a solution of any dilute mineral acid for about a minute. Then make a contrast stain with solution of Loeffler's methylene blue for about a minute; wash it again and examine with oil immersion lens. The tubercle bacilli will appear as thin red rods while all other bacteria will appear blue. The tubercle bacillus is rod shaped, is from 1½ to 3½ mikrons in length and about one-third to one-half a mikron in breadth, is a strict parasite, is not motile, and has no flagella. It is slightly curved, does not form spores, is not liquefying, and nonchromogenic; is aërobic; it resists acids; it grows well on blood serum; stains well by Ehrlich's, Ziehl-Neilsen's, or Gabbett's method; it is Gram-positive.

2. *Immunity* is the power of resistance of cells and tissues to the action of pathogenic bacteria. Immunity may be either natural or acquired.

Natural immunity is this power of resistance, natural and inherited, and peculiar to certain groups of animals, but common to every individual of these groups.

Acquired immunity is this resistance acquired: (1) By a previous attack of the disease caused by the bacteria, or (2) by the person being made artificially insusceptible. The conditions which give immunity from the pathogenic action of bacteria are: (1) A previous attack of the disease; (2) inoculation, with small quantities of bacteria, so as to produce a mild attack of the disease; (3) vaccination; (4) the introduction of antitoxins; (5) the introduction of the toxins of the bacteria.

Active immunity follows an attack of a certain disease and secures immunity for that alone; or it follows inoculation of a virus weaker than necessary to cause the typical disease; or it follows inoculation by bacterial products apart from the organisms themselves.

Passive immunity is the term applied to the effect of a serum derived from an immunized animal and injected into one not immune.

3. *Phagocytosis* is the faculty of certain cells (notably the mononuclear and polynuclear leucocytes) to take up and destroy bacteria.

Antitoxins are substances formed in the body of a protective character and capable of rendering inert the poisonous products of bacteria.

Vaccine is a modified and attenuated virus of a disease, not capable of producing a severe infection but able to afford protection against the action of unmodified virus.

4. The *Gonococcus* is a diplococcus with a special predilection for the mucous membrane of the urethra and vagina. It is sometimes found on the conjunctiva. The appearance is that of two coffee beans; the gonococcus is found in the pus cells, stains with ordinary anilin dyes, but not by Gram's method. It is aërobic, and can be cultivated on human blood serum; it will not grow on gelatin, agar, bouillon, or potato. It was discovered by Neisser. To demonstrate *gonococci:* On a cover-glass make a smear with the discharge as thin as possible, and let it dry in the air; cover it with a freshly made solution of anilin-oil-gentian-violet for one or two minutes; wash it in distilled water, leave it in Gram's solution for two minutes; wash it in 95 per cent. alcohol until decolorized; wash it in distilled water; counterstain with a dilute carbolfuchsin without heat, or with a saturated aqueous solution of Bismarck brown; wash in distilled water, dry with filter paper, mount, and examine with an oil-immersion lens. The gonococci will appear as *diplococci within the leucocytes,* which have been *decolorized by Gram's stain,* and have taken the counterstain.

5. To *prove that bacteria cause disease* it is essential: (1) That the microorganism be found in the tissues, blood, or secretions of a person or animal sick or dead of the disease; (2) the microorganism must be isolated and cultivated from these same sources; it must also be grown for several generations in artificial culture media; (3) the pure cultures, when thus obtained, must, on inoculation into a healthy and susceptible animal, produce the diseases in question, and (4) the same microorganisms must again be found in the tissues, blood, or secretions of the inoculated animal.

PRACTICE OF MEDICINE.

1.

CEREBRAL VOMITING.	GASTRIC VOMITING.
Little or no nausea, vomiting continuous.	Nausea relieved by vomiting, returns when food is taken.
No tenderness on pressure over liver or stomach.	Liver and stomach are tender, pressure produces inclination to vomit.
Pulse infrequent and hard.	Pulse frequent and weak.
Tongue clean, breath sweet, conjunctivæ normal or injected, headache primary.	Tongue furred, breath offensive, conjunctivæ often yellowish, headache secondary as to time.
Constipation generally obstinate.	Griping abdominal pain, diarrhea and clay-colored stools.
No salivation.	Increased salivation.

(From Potter's *Therapeutics.*)

2. *Leucocytosis occurs* in: Inflammatory conditions; certain toxic conditions; many infectious diseases (such as pneumonia, diphtheria, erysipelas, smallpox, septicemia and pyemia, rheumatism, meningitis); tonsilitis, appendicitis, osteomyelitis, salpingitis, pleurisy, percarditis, peritonitis, leukemia, diseases of the lymphatic glands, gout, uremia, and after hemorrhages.

3. *Prolonged expiration* is found in asthma, emphysema, and at the commencement of pulmonary tuberculosis.

4. The *mitral regurgitant murmur* is systolic, blowing, heard best in the mitral area at the apex, and may be transmitted to the left axilla or under the left scapula. It may occur with or take the place of the first sound of the heart.

5. LOBAR PNEUMONIA. *Causes: Diplococcus pneumoniæ* of Frankel. Lowered vitality, bad hygiene, infectious disease, nephritis, exposure to cold and wet all predispose.

Treatment: "Consists in rest in bed, milk diet, and the administration of fractional doses of calomel followed by a saline in the early stage. The nervous symptoms and temperature may be controlled by applying ice-bags or compresses wrung out of cold water (60°-70° F.) to the chest or by the use of the warm or cold wet-pack. The heart and pulse should be sustained by the administration of alcohol, strychnine (gr. 1/60-1/20), atropine, caffeine, strophanthus, and nitroglycerin. Digitalis may also be employed. Inhalations of oxygen afford temporary relief when the dyspnea and cyanosis are extreme. In young, vigorous, and plethoric adults, with hyperpyrexia and a high-tension pulse, bleeding may be beneficial in the first 48 hours. Convalescence should be guarded, and tonics, stimulants, etc., will be found very useful in this period of the disease." (*Pocket Cyclopedia.*)

6. *Angina pectoris* is a condition in which there occur sharp paroxysmal, cardiac pains, usually extending into the left shoulder and down the left arm, accompanied by a feeling of constriction of the thorax and a strong fear of impending death. It may be caused by disease or obstruction of the coronary arteries, or inflammation of the aorta.

7. A *diagnosis of typhoid fever* may be based on: The peculiar temperature curve, the rose eruption, the enlarged spleen, a positive diazo-reaction and a positive Widal test.

8.

EXANTHEM.	PERIOD OF INCUBATION.	TIME OF APPEARANCE OF ERUPTION.	DURATION OF ERUPTION.
Erysipelas.	Few hours to 3 or 4 days.	Within 24 hours.	4 to 8 days.

EXANTHEM.	PERIOD OF INCUBATION.	TIME OF APPEARANCE OF ERUPTION.	DURATION OF ERUPTION.
Measles.	10 to 12 days.	4th day.	4 to 5 days.
Rötheln.	8 to 17 days.	Within 48 hours.	3 days.
Scarlatina.	1 to 21 days.	Within 24 hours.	7 to 10 days.
Typhoid Fever	5 to 35 days.	7th day.	Each crop 3 to 5 days. Last 10 to 20 days or throughout the whole course of the fever.
Typhus Fever.	4 to 12 days.	Usually 5th day; may be on 3d or not until 7th day.	Few days, or may last throughout the course of the disease.
Varicella.	4 to 14 days.	Within 12 to 24 hours.	5 to 8 days.
Variola.	8 to 14 days	4th day.	21 to 25 days.

9. The *cause of syphilis* is the *Treponema pallidum.*

10. The *symptoms of chlorosis* are: Malaise, languor, anorexia, cardiac palpitation, hemic murmur, cold extremities, fainting, dyspnea, constipation, yellowish-green or pale skin, bright eyes, slight edema. The *blood-picture* shows a great diminution in the amount of hemoglobin; the red cells are slightly diminished in number, and may be misshapen; normoblasts may be present, also a slight leucocytosis.

OBSTETRICS.

1. The fetal head has the following diameters: Occipito-frontal, occipito-mental, bitemporal, biparietal, suboccipito-bregmatic, trachelo-bregmatic, and mento-bregmatic. Of these the occipito-frontal is 4½ inches, the occipito-mental is 5½ inches, and all the others are approximately 3¾ inches.

2. *Measurements of diameters of pelvis (approximately):*

	ANTERO-POSTERIOR.	OBLIQUE.	TRANSVERSE.
Brim.....	4 inches	4½ inches	5 inches
Mid-plane.....	4½ "	4½ "	4½ "
Outlet.....	5 "	4½ "	4 "

3. In *normal pregnancy:* The tumor is hard and does not fluctuate, is situated in the median line, and may give fetal heart sounds and movements; the cervix is soft, and the other signs of pregnancy are present. The rate of growth of the tumor, and the general condition of the patient's health may also help in arriving at a diagnosis. In *abdominal tumors:* menstruation is irregular and sometimes very profuse; absence of the signs of pregnancy; the tumor is nodular, firm, irregular in outline, and while sometimes placed somewhat centrally is not generally in the median line, and is not symmetrical; the rate of growth is irregular, being, as a rule, slow, and sometimes extending over years. In *ectopic gestation:* menstruation is irregular; pelvic pain may be present; the tumor has a progressive growth, but the uterus does not enlarge with it; the uterus is displaced and empty.

4. *Maternal conditions which warrant destruction of fetal life:* Some exceptional cases of hemorrhage, sepsis, or shock, in which the mother's condition is such that destruction of the child is the only means of preserving her own life.

5. When the action of the uterus is insufficient, normal contraction may often be brought about by: Rest, strychnine, ergot, chloral, bromides or opium, quinine, and massage.

6. Probably eclampsia or toxemia would be indicated. *Preventive treatment:* (1) The amount of nitrogenous food should be diminished to a minimum; (2) the production and absorption of poisonous materials in the intestines and body tissues should be limited and their elimination should be aided by improving the action of the bowels the kidneys, the liver, the skin, and the lungs: (3) the source of the fetal metabolic products and the peripheral irritation in the uterus should, if necessary, be removed by evacuating that organ. *Curative treatment:* (1) Control the convulsions (by chloroform, veratrum, or chloral); (2) eliminate the poison or poisons which are presumed to cause the convulsions; (3) empty the uterus under deep anesthesia by some method that is rapid and that will cause as little injury to the woman as possible.

7. *Placenta prævia* is the condition in which the placenta is attached in the lower uterine segment, and may be near or over (partially or completely) the internal os. *Symptoms:* Sudden hemorrhage, accompanied by syncope, vertigo, restlessness, and feeble pulse. *Treatment:* Stop the hemorrhage by a vaginal tampon; this must be tight and thorough. *Accouchement forcé* is indicated; this consists of dilatation of cervix, version, and immediate extraction of the child.

8. OPHTHALMIA NEONATORUM. *Causes:* The gonococcus or some other pyogenic microorganism; the secretions of the mother contain the infecting agent, and transmission may occur directly during parturition, or indirectly by the fingers of physician or nurse, cloths, instruments, etc. *Symptoms:* Swollen eyelids, with copious purulent discharge; ulceration of the cornea may ensue. *Prophylaxis:* Whenever there is the possibility of infection, or in every case, wash the eyelids of the newborn child with clean warm water, and drop on the cornea of each eye one drop of a 1 per cent. solution of nitrate of silver, immediately after birth. *Treatment:* Wash the eyes carefully every half hour with a saturated solution of boric acid; pus must not be allowed to accumulate. Two drops of a 2 per cent. solution of nitrate of silver must also be dropped on to the cornea every night and morning. The eyes must be covered with a light, cold, wet compress. The patient must be isolated, and all cloths and compresses used must be burnt.

9. At three months, the fundus is rising over the symphysis pubis; at five months, it is midway between the symphysis and the umbilicus; and at seven months, it is midway between the umbilicus and the ensiform.

10. PROTRACTED LABOR. *Causes:* Obstruction, uterine inertia, uterine exhaustion. *Dangers:* Asphyxiation of fetus, post-partum hemorrhage, sepsis, pressure-necrosis and fistulæ, exhaustion or death of the mother.

11. *Hereditary syphilis:* Supposing the child to have been born alive, it usually shows no evidence of disease for a period ranging between two and six weeks, sometimes longer, after birth. It then, as a rule, gradually loses its healthy appearance, begins to snuffle, becomes fretful, and wastes more or less rapidly. The child's skin assumes a dull dirty color, and, though loose and wrinkled, is very brittle and easily breaks round the mouth and nose into chaps and fissures, the scars of which often form a characteristic sign in after life, if the child survive. *Prognosis.* "This is good in cases of moderate severity. Children born with the rash upon them nearly always succumb. Much depends on the mother, whether she is able to nurse the infant or not, for a syphilitic child which has to be reared artificially has a very poor chance of life. The earlier the symptoms appear after birth the more severe the type of the disease. About 10 per cent. of those suffering from congenital syphilis develop some nervous trouble, such as idiocy, progressive mental deterioration, hydrocephalus, etc. Any considerable degree of marasmus is rarely recovered from." (Aids to *Diseases of Children.*)

12. "*Management of normal labor. During the first stage* a rectal enema of soapsuds with turpentine (5i) should be given, and when the os is dilated to the size of a silver dollar the patient should be placed in bed, lying upon the side toward which the fetal back looks. If the pain is severe, chloral hydrate (gr. 15) may be given every half-hour for 3 doses.

During the second stage, examinations should be made when necessary. In multiparæ the membranes may be ruptured with the finger or with some aseptic instrument. Care should be taken not to injure the child's scalp or the lower uterine segment. The pain may require the administration of chloroform or ether, but not to the extent of complete anesthesia. The expulsive force of the abdominal walls may be increased by directing the patient to pull upon a sheet firmly secured to the foot of the bed. Attempts may be made to prevent laceration of the perineum by making firm backward and upward pressure against the occiput during the pains; by restraining voluntary expulsive efforts during the pains; and by securing expulsion of the head between the pains. The head should be supported when born; the eyes should be cleansed with sterile water; and if the cord is coiled about the neck, it should be loosened or slipped over the head. Delay in delivery of the shoulders may be overcome by stimulating the uterus by friction through the abdominal wall or traction. The cord is ligated and cut when pulsation has ceased, and the child is placed by the mother's side with its face turned away from the maternal discharges.

During the third stage, 3i of fluidextract of ergot is administered and irritation of the uterus by friction through the abdominal wall is practised for 10 or 15 minutes. If the placenta is not expelled by this time, the uterus is firmly grasped between the thumb and four fingers and compressed. Firm pressure is then made from above downward and backward in the direction of the pelvic canal. This usually causes delivery of the placenta. A vulvar pad of salicylated cotton and carbolized gauze and an abdominal pad and binder are then applied." (*Pocket Cyclopedia.*)

GYNECOLOGY.

1. *Endocervicitis* is an inflammation of the mucous membrane of the cervix of the uterus; it is "usually secondary to some impairment of the general health or to displacements of the uterus, laceration of the cervix, and gonorrhea. The symptoms are headache, backache, pain in pelvis, and the presence of characteristic, whitish, opaque, thick, and tenacious discharge. A possible cause should be sought for and corrected. The general health will be improved by the administration of preparations containing iron, such as Blaud's pill, Basham's mixture, and the four chlorides. Exercise, diet, and the condition of the bowels should receive attention. The local treatment consists in the administration of hot vaginal douches two or thre times daily; the use of glycerin tampons for 12 hours, twice a week; the application of tincture of iodine to the cervix, once a week; and the application of silver nitrate, zinc chloride, pure carbolic acid, or Churchill's tincture of iodine directly to the cervical mucous membrane." (*Pocket Cyclopedia.*)

2. The *indications for curettage* are: For diagnosis, to remove pieces of retained placenta or decidua; for endometritis, mucous polypi, uterine hemorrhage, dysmenorrhea, and endocervicitis.

3. *Dysmenorrhea* is unduly painful menstruation.
Amenorrhea is absence of menstruation.
Menorrhagia is excessive menstruation.
Metrorrhagia is uterine hemorrhage at other than the menstrual period.

4. *Varieties of uterine displacements:* Retroversion, retroflexion, anteversion, anteflexion, prolapse, ascent, and displacement to one side.

5. *Urethral caruncle* is a small red fleshy growth generally situated on the posterior part of the meatus of the urethra. There are local pain and tenderness, which may be excessive; a burning sensation is experienced on urination; it may bleed. The proper treatment is to excise it or destroy it with the thermocautery.

6. The *diagnosis* is—Ectopic gestation. The *treatment* is—Laparotomy. "After thorough cleansing and sterilization of the abdomen and pubes, as well as of the instruments and hands of the operator and assistants, the bladder is emptied and the patient anesthetized. An incision 3 inches long is then made in the median line above the pubes down to the peritoneum, any bleeding vessels being twisted before opening the peritoneal cavity. The peritoneum is then incised; the intestine kept back by pads of cotton or gauze wrung out of sterilized water; the operator's fingers bring out the distended tube and ovary at the incision after having freed them from any existing adhesions; the pedicle is then transfixed by a double ligature of sterilized silk, and each half of it tied securely according to surgical rule. The pedicle is cut, and the entire mass—the Fallopian tube, with the cyst, fetus, ovary, and effused blood, removed, extra care being taken, in the ruptured cases, to quickly secure the bleeding vessels of the ruptured tube from further hemorrhage. The pads are then withdrawn and the abdominal incision closed and dressed in the usual manner. In case of threatened collapse from hemorrhage during the operation, the peritoneal cavity may be flooded with a 1 per cent. sterilized solution of common salt at a temperature of 100° F., a quart of this solution having been previously prepared. It is rapidly absorbed by the peritoneum, and acts as a restorative—like transfusion."—(King's *Obstetrics.*)

7. *Etiology of cancer of the uterus:* "The causes of cancer are unknown; the predisposing or favoring conditions are as follows: (1) *Age*—the disease occurs most frequently between forty and fifty. The extreme limitations are between eight and seventy-six. (2) *Heredity*—an apparent predisposing cause. (3) *Social state*—more frequent among the poor and ignorant. (4) *Race*—relatively rare among negroes. (5) *Trauma of labor*—laceration of the cervix a possible predisposing cause. (6) *Endometritis and endocervicitis* are said to be favoring conditions."—(Dudley's *Gynecology.*)

8. A *large ovarian cyst* causes the following symptoms (apart from complications): "From pressure on the bladder and rectum there may be frequent micturition and constipation; from pressure on the vessels, edema of the lower limbs and genitals; from pressure on the sacral and lumbar plexus, pains in the back, pudenda, and legs; from pressure on the stomach, nausea and vomiting; on the intestines, diarrhea or colicky pains; on the portal vein, ascites and hemorrhoids; on the kidneys and ureters, albuminous and highly concentrated urine, rich in urates. Later, as the tumor extends upward, there will be embarrassed breathing and dyspnea from pressure on the heart and lungs while finally emaciation sets in, and the patient dies of exhaustion, if not carried off by an intercurrent attack of peritonitis from rupture of the cyst."—(Spencer and Gask's *Surgery.*)

9.

FIBROID TUMOR.	OVARIAN CYST.
1. Slow growth.	1. Usually more rapid growth.
2. Facial expression unchanged. Face may be full and flushed; later pale from hemorrhage.	2. Facies ovariana.
3. General health usually unimpaired except from loss of blood, if submucous or mural; may be painful.	3. General health early impaired from emaciation. Not painful.
4. Abdomen usually very asymmetrical from irregular shape of tumor.	4. Abdomen more symmetrical, especially when tumor is large.
5. Abdominal veins not usually enlarged.	5. Usually enlarged, especially in large polycysts.
6. Action of kidneys normal.	6. Kidneys less active.
7. Usual menorrhagia.	7. Menstruation unchanged or diminished.
8. Elasticity, not fluctuation. No percussion wave.	8. Fluctuation marked. Percussion wave marked.
9. Surface firm and usually lobulated.	9. Surface yielding; in monocysts, regular; in polycysts, irregular.
10. Vaginal touch and conjoined examination show tumor dense and firm, and continuous with uterus. Uterus large and heavy.	10. Uterus normal, except displacement from pressure. Tumor compressible, fluctuating, detached from uterus.
11. Uterine cavity much elongated.	11. Not materially elongated. (This is a most important diagnostic point.)
12. Uterus moves with tumor.	12. Does not move with tumor.

—(From Dudley's *Gynecology.*)

10. *Operation for amputation of the cervix:* "The cervix is thoroughly exposed by the introduction of the bill of a large speculum; with the sound the operator determines the position of the cervical canal and estimates the mobility of the uterus; by means of the vesical sound the precise relation of the bladder to the cervix is ascertained. The cervix is firmly grasped with a stout volsella and drawn down; with a scalpel the surgeon transversely divides the mucous membrane on the anterior wall of the cervix as high up as the bladder permits; the assistant keeps him informed of the position of the bladder by retaining the sound in the lowest part of the vesical cavity. Having divided the mucous membrane, the bladder is easily detached from the cervix by the handle of the scalpel. The knife is then carried through the mucous membrane on the sides and posterior aspect of the cervix. The next step is to secure the uterine arteries as they run to the sides of the cervix near the spot where the vaginal mucous membrane is reflected on to it. When the bladder is detached and held apart from the cervix by a retractor, while the cervix is drawn down by the volsella, the artery may be seen, and is easily secured. It is well to secure it as close to the center as possible in order to avoid the ureter. Having secured the artery on each side, the cervix may be amputated with a scapel or with scissors. When the uterine arteries are deliberately exposed and secured there is no bleeding from the stump, but a small artery here and there in the cut edge of the vaginal mucous membrane may require to be seized or ligatured. The vagina is then douched and the patient returned to bed."—(Sutton and Giles' *Diseases of Women.*)

SURGERY.

1. *Inflammation* is the succession of changes which take place in a living tissue as the result of some kind

of injury, provided that this injury be insufficient immediately to destroy its vitality. Inflammation *extends* by the blood-vessels, by the lymphatics, and by continuity of tissue. Inflammation may *terminate* in return of the tissues to health (by resolution, by organization, or new growth) and in death of tissue (by suppuration, by ulceration, or by gangrene).

2. PHLEBITIS. *Symptoms:* A hard, painful, cord-like swelling forms over the vein. Skin over this is dusky, congested, and edematous. If the vein is superficial there are no other signs. If it is the main deep vein of the limb, massive solid edema occurs, with considerable lymphatic engorgement (white leg). Superficial veins enlarge in order to carry on the collateral circulation. Fever, with rigors, occurs, and is proportioned to the infectivity of the process. Abscesses develop round an infective phlebitis. *Treatment:* Rest and elevation in bed for six weeks. Belladonna applications for pain. Excision of the veins in recurrent superficial phlebitis. Incision, removal of clot with proximal ligature in infective phlebitis, *e.g.* in the jugular vein following acute mastoiditis.—(*Synopsis of Surgery.*)

3. The *inflammatory diseases of bone* are: *Periostitis*, ostitis, and osteomyelitis

4. *To arrest epistaxis:* (1) Try to cauterize the bleeding point; (2) plug the nasal cavity with gauze soaked in adrenalin; (3) inject into the nares a solution of peroxide of hydrogen; (4) plugging the nares, anteriorly and posteriorly; (5) an inflating plug may be used.

5. *After division of the radial nerve*, there will be loss of sensation in the skin over the metacarpal bones and the first phalanges of the thumb and index finger. There will be no paralysis, for no muscles are supplied by this nerve.

6. The *varieties of shoulder-joint dislocation* are: (1) Subcoracoid—forward, inward, and downward; (2) Subglenoid—downward, forward, and inward; (3) Subspinous—backward, inward, and downward, and (4) Subclavicular—forward, inward, and upward.

7. *Delayed union in fracture is caused by:* Ill health, want of approximation of the end of the bone, want of blood supply in the bone, defective innervation of the bone, disease of the bone, lack of rest, and immobility.

Treatment is given by DaCosta as follows:

"When delayed union exists, seek for a cause and remove it, treating constitutionally if required, and thoroughly immobilizing the parts by plaster. Orthopedic splints may be of value. Use of the limb while splinted, percussion over the fracture, and rubbing the fragments together, thus in each case producing irritation, have all been recommended. Blistering the skin with iodine or firing it has been employed. If the case be very long delayed, forcibly separate the fragments and put up in plaster as a fresh break. If these means fail, irritate by subcutaneous drilling or scraping, or, better, by laying open the parts and then drilling and scraping at many places."

8. In fracture of the neck of the femur, the head of the femur will be found in the acetabulum; in dislocation, the acetabulum will be empty, and the head of the femur will be found elsewhere, *e.g.* on the dorsum of the ilium. In the fracture, crepitus *may* be elicited; in the dislocation, never. In the dislocation, there is inversion and a fixed position of the limb, both of which are absent in fracture. In fracture there is shortening and outward rotation.

The *treatment* in *intracapsular fracture* is: "Rest in bed with the leg between sandbags. Weight extension. If any signs of congestion of the lungs appear, the patient must get up and walk on crutches. Never disimpact, and always examine such cases very gently for fear of disimpaction." In *extracapsular fracture:* "Always disimpact in young healthy patients when there is much displacement. Long Liston's splint from the axilla to below the ankle, maintained from rotating by transverse bar. Limb is pulled on by weight attached by strapping and bandages well above the knee. Hodgen's splint is often more effectual than Liston's in reducing the deformity. Maintain splint and extension for six weeks." In *backward dislocations:* "Flex the knee and thigh in position of adduction. Abduct the thigh and evert simultaneously. Bring the leg down straight. Lift up, bend out, roll out. Direct traction of the thigh forward in a line at right angles to the body." In *forward dislocations:* "Thigh is flexed in a position of abduction. Abduct the thigh and then invert it. Bring the thigh down straight. Lift up, bend in, roll in."—(*Synopsis of Surgery.*)

9. *Amputation of last phalanx* (of finger): "The space is so limited that the saw-line can only be placed between the matrix of nail and proximal end of second phalanx. (1) Palmar incision—from saw-line downward along lateral aspect of phalanx, midway between dorsal and palmar surfaces, around the center of the pulp, and back to the saw-line on the opposite side. (2) Dorsal incision—connects upper ends of palmar incision, passing transversely over the dorsum with slight downward convexity. Having outlined these incisions, carry the palmar incision to the bone, dissect up all palmar tissues down to the bone, deepen the dorsal incision to the bone, retract the soft parts, in the entire circumference, and saw the phalanx with a light saw, while holding the tip of the phalanx with bone-holding forceps (as there is generally too little room for the fingers of the operator to grasp). Ligate the palmar digital artery on each side. Suture the deep flexor tendon to the periosteum or flap. Suture the palmar flap to the transverse dorsal line."—(Bickham's *Operative Surgery.*)

10. "*Dermoid cysts* of the simpler kind have a wall composed of the structures forming the skin and its appendages, viz., stratified squamous epithelium, dermis, hair-follicles with hair, sebaceous glands actively secreting their contents; also subcutaneous fat and sweat-glands. They are commonly met with: (*a*) in the skin of the scalp, or (*b*) attached to the periosteum and quite separate from the skin, above the outer angle of the orbit, (*c*) in the middle line of the floor of the mouth, below the tongue, (*d*) in the lines of the embryonic fissures in the neck, (*e*) in connection with the thymus, (*f*) in connection with the ovary in the female, and (*g*) between the bladder and rectum in the male. The more complicated dermoid cysts which merge into the teratomata are especially those connected with the ovary, with the base of the skull around the hypophysis protruding into the nasopharynx as hairy polypi, and with the spinal column."—(Spencer and Gask's *Surgery.*)

BULLETIN OF APPROACHING EXAMINATIONS

STATE	NAME AND ADDRESS OF SECRETARY	PLACE AND DATE OF NEXT EXAMINATION†	
Alabama*	W. H. Sanders, Montgomery	Montgomery	Jan. 14
Arizona*	J. W. Thomas, Phoenix	Phoenix	Jan 6
Arkansas	F. T. Murphy, Brinkley	Little Rock	May 13
California*	Chas. L. Tisdale, 929 Butler Building, San Francisco	San Francisco	April 1
Colorado	David A. Strickler, Empire Building, Denver	Denver	Jan. 7
Connecticut*	Chas. A. Tuttle, New Haven	New Haven	Mar. 11
Delaware	J. H. Wilson, Dover	Dover	
Dist. of Col'ba	Geo. C. Ober, Washington	Washington	Jan. 14
Florida*	I. D. Fernandez, Jacksonville	Jacksonville	May 12
Georgia	C. T. Nolan, Marietta	Atlanta	May ..
Idaho*	O. J. Allen, Bellevue	Boise	Apr. 1
Illinois	J. A. Egan, Springfield	Chicago	Jan. ..
Indiana	W. T. Gott, Crawfordsville	Indianapolis	Jan. 14
Iowa	G. H. Sumner, Des Moines	Des Moines	..
Kansas	H. A. Dykes, Lebanon	Topeka	Feb. 11
Kentucky	J. N. McCormack, Bowling Green	Louisville	
Louisiana	A. B. Brown, Cusach's Bldg., New Orleans	New Orleans	June 5
Maine	F. W. Searle, Portland	Portland	March 11
Maryland	J. McP. Scott, Hagerstown	Baltimore	June 17
Massachusetts*	E. B. Harvey, State House, Boston	Boston	March 11
Michigan	B. D. Harison, 205 Whitney Building, Detroit	Ann Arbor	June 10
Minnesota	W. S. Fullerton, St. Paul	Minneapolis	Jan. 7
Mississippi	S. H. McLean, Jackson	Jackson	..
Missouri	Frank B. Hiller, Jefferson City		..
Montana*	Wm. C. Riddell, Helena	Helena	Apr. 1
Nebraska	E. A. Carr, Lincoln	Lincoln	..
Nevada	S. L. Lee, Carson City	Carson City	May 5
N. Hampshire	Henry C. Morrison, State Library, Concord	Concord	
New Jersey	H. G. Norton, Trenton	Trenton	June 17
New Mexico	W. E. Kaser, East Las Vegas	Santa Fe	Jan. 13
New York	H. H. Horner, Univ. of State of New York, Albany	New York Albany Syracuse Buffalo	Jan. 28
N. Carolina	B. K. Hays, Oxford	Moorehead City	June 10
N. Dakota	G. M. Williamson, Grand Forks	Grand Forks	Jan. 7
Ohio	Geo. H. Matson, Columbus	Columbus	
Oklahoma*	J. W. Duke, Guthrie	Oklahoma City	Jan. 14
Oregon	B. E. Miller, Portland	Portland	Jan. 7
Pennsylvania	T. G. Becht, Harrisburg	Philadelphia Pittsburgh	
Rhode Island	G. T. Swarts, Providence	Providence	Jan. 2
S. Carolina	H. E. Boozer, Columbia	Columbia	June 10
S. Dakota	L. G. Hill, Watertown	Watertown	Jan. 8
Tennessee	C. A. Abernathy, Pulaski	Memphis Nashville Knoxville	May June
Texas	J. D. Mitchell, Fort Worth	Dallas	..
Utah	R. W. Fisher, Salt Lake City	Salt Lake City	..
Vermont	W. Scott Nay, Underhill	Montpelier	Jan. 14
Virginia	R. S. Martin, Stuart	Richmond	
Washington*	F. P. Witter, Spokane	Spokane	Jan. 13
W. Virginia	H. A. Barbee, Point Pleasant	Wheeling	..
Wisconsin	J. M. Beffel, Milwaukee	Milwaukee	Jan. 14
Wyoming	A. B. Tonkin, Riverton	Riverton	..

*No reciprocity recognized by these States.

†Applicants should in every case write to the secretary for all the details regarding the examination in any particular State.

Pennsylvania.—Reciprocity exists at present with Nevada, Illinois, Ohio, New Jersey, and Vermont.

Miscellany.

The "Rabbet" Woman of Godlyman.—Early in the eighteenth century a certain woman of Godalming, "Godlamin," or "Godlyman," in Surrey, having been affrighted by a rabbit running from a hedge, at a time when she professed herself pregnant, was afterwards brought to bed of "rabbets." She seems to have successfully enlisted the sympathy of the local practitioner; and, perhaps finding the mystification profitable, continued to be delivered of portions of "rabbets," so that she became something more than a nine days' wonder. She was brought to town, was attended by various physicians of eminence, and, until finally discredited, even excited the interest of the royal family. Stories of animal births have cropped up for centuries, and are still believed in by not a few. It is not fifteen years since a peasant, aged fifty-six or so, living in a Northamptonshire village, declared that she had been brought to bed of puppies. A medical man was sent for. He assisted at the "confinement"; declared that he had himself seen the products of conception; maintained that they were expelled from the vagina, and stoutly adhered to his narration at a meeting of a local medical society. In this case some story of a fright by a dog was forthcoming; and there were village hints of a darker explanation. But the general professional belief was that the doctor called in had been himself deceived, and that what had been taken for puppies was nothing but blood-clot. This is not, however, the true explanation; and since it is possible that even yet there may occur in some remote village episodes reminiscent of the Woman of Godlyman, and this later peasant in Northamptonshire, a few moments' consideration may not be amiss.

That occasional bestialities do occur among women, as among men, is not unknown to every experienced practitioner; and the birth of a monstrosity, or the occurrence of a multiple abortion, has often, by the vulgar, been connected with some scandalous rumor, so that the popular notion of animal births has become fixed. In other cases, too, evidence which cannot be disputed has shown that there is some basis for a belief in maternal impressions. But, it would appear that in such apparent cases of gross deception as those of the women of Godalming and Northampton, one has to deal with those who either have imagined themselves pregnant, have had good reasons for wishing themselves to be thought pregnant, or have feared pregnancy. And it is not to be overlooked that psychoanalysis has shown how, very often, women have the oddest notions of the way in which pregnancy occurs; and that many girls and women have spent years of misery and apprehension on account of some real or fancied sexual transgression which they have feared might have resulted in pregnancy. Hysterical autosuggestion, then, accounts for the subjective signs of the fancied pregnancy; and also for the unconsciously or subconsciously simulated objective signs, by way of pseudocyesis. The unconscious workings of the hysterical brain suggest, as a defense against detection if there has been any perverted practice, reliance on the popular belief in frights and impressions, to explain away the dreaded exposure; or, in other cases, to account for the non-production of an advertised child in due course. A mythoplastic atmosphere is created, and is reinforced by the sympathetic interest displayed by others; then, as a desperate resource, products of animal conception are placed in the vagina and "expelled," so that in the end a monstrous system of imposture becomes elaborated from an original self-deception, that in some cases, at any rate, is the result of a true anxiety or repression psychosis.—*The Universal Medical Record*, November, 1912.

Alcohol and Civilization.—G. E. Partridge applies the principle "give the devil his due" in a highly interesting chapter concerned with the history of drinking. He reminds one that it is unfair to regard alcohol merely as man's subtle and relentless enemy. He has a good word to say for it: "Alcohol and its kindred have been of great importance in fostering those social traits upon which our present civilization rests. It is difficult to conceive, in fact, what the social life of uncivilized man might have been without the use of alcoholic drinks. The greatest obstacles to social amalgamation, to treaties, to intercourse among tribes were overcome by the intoxication festivals and drink customs. It is possible, indeed, that alcohol may have been the deciding factor at a certain stage of civilization, when man's future as a social being hung in the balance." —"Studies in the Psychology of Intemperance."

The Avaricious House-Surgeon.—F. W. Langridge quotes the following anecdote related by Harrison Cripps: A patient swallowed a halfpenny one afternoon and next morning the house-surgeon on examining him extracted this halfpenny from the rectum. It had passed down without much trouble, but had been unable to pass the rectum. This was the case in which the house surgeon got into trouble with the lay governing body of the hospital. He was charged with having extracted a fee from an out-patient. But as the amount in dispute was small he thought he had better hand it over to the hospital authorities to avoid prosecution.—*The Clinical Journal*, October 2, 1912.

The Functions of the Pigtail.—Budberg of Charbin attributes to this symbol of Chinese nationality certain hygienic virtues. It increases the circulation of blood in the brain. When rolled up on the top of the head it acts as a substitute for a cap, and protects the head from the glare of the summer sun and the cold of winter. It also serves as a neckcloth and a pillow. As a cord it is ever at hand to check hemorrhage.—*British Medical Journal*, December 7, 1912.

The Self-Styled "Consultant."—J. G. Mumford draws a picture of the "young internist, five or ten years established, immersed in hospital and academic work: his best energies so occupied; supported, perhaps, by his modest patrimony, or having taken to himself a wife with money. From such material, general practitioners—able, experienced, resourceful—are not made. These hospital men do not stand ready, day and night, for small fees or for no fees, to rush to the aid of the afflicted. Soon they learn to call themselves 'consultants,' and to keep hours and appointments so irregularly that practice cannot find them. Then patients float off—to the virtuous and patient rank and file, to irregular practitioners, to osteopathists, to Christian Scientists, and the like. When the chief shepherds have, for a generation, so neglected their flocks, what can you expect? Many of these self-satisfied seekers after causes have become so inexpert in the treatment of disease that the successes of psychotherapy are a cause for bitterness and intolerant outcries."—*"A Doctor's Table Talk."*

Medical Record

A Weekly Journal of Medicine and Surgery

Vol. 82, No. 26.
Whole No. 2199.

NEW YORK, DECEMBER 28, 1912.

$5.00 Per Annum.
Single Copies, 15c.

Original Articles.

OSTEITIS DEFORMANS (PAGET'S DISEASE).

REPORT OF ONE CASE WITH RADIOGRAPHS.

By S. FOSDICK JONES, M.D.,

DENVER, COLO.

CHRONIC inflammatory lesions of bones have been the subject of much study and have claimed the attention of the medical profession since the earliest history of medicine, but it was Sir James Paget who first applied the term "osteitis deformans" to that form of bone disease which is characterized by softening, hypertrophy, and roughening, and later by distortions of the long bones of the skeleton, and thickening and enlargement of the cranium, with pathological changes noted in the spine.

During the past winter the writer has had the opportunity of observing a typical case of Paget's disease, and in view of the rarity of this condition, would report the case and present a careful résumé of this most interesting subject.

Review of the Literature.—In 1876 Sir James Paget[1] reported before the Royal Medical and Chirurgical Society of London a rare bone affection, which he termed osteitis deformans. Although Paget was not the first to observe this affection, he is, undoubtedly, entitled to the credit, as he was the first observer to point out clearly its typical characteristics and to differentiate it from other chronic deforming bone lesions. Among the earlier cases was one published by Wrany[2] in 1867, cases by Wilks[3] in 1869, and a case by Rullier[4] in 1812, all of these being noted by Paget.

Sir James Paget's case concerned a man of forty-six years, who at that age first complained of "aching pains" in the thighs and legs, particularly noted after active exercise. These pains were followed one year later by distortion of the tibiæ, which became broadened, thickened, and nodular. Similar changes were noted in the femur, but there was no tenderness on pressure. After a lapse of three years, during which time the patient's general health was excellent, there was noted a progressive distortion and thickening of the left femur and tibia. There was distinct widening of the left side of the pelvis and the left limb was about one-quarter of an inch shorter than the right. Seventeen years later he was again seen by Paget, who then describes his condition as follows:

"The left femur and tibia are larger, heavier and more curved; the right femur being also distorted, and both thighs are nearly the same size and shape. The skull has become gradually larger, and his hat and the helmet which he wore needed to be enlarged. The spine very slowly became curved and almost rigid. The whole of the cervical vertebræ and the upper dorsal spine formed a strong posterior curve, not angular, and an anterior curve of similar shape was formed by the lower dorsal and lumbar vertebræ. The length of the spine seemed lessened, and from a height of six feet one inch he sank to about five feet nine inches. The chest became flattened, contracted, and narrow, and the movements of the ribs and spine were lessened. The shape and habitual posture of the patient were thus made strange and peculiar. His head was advanced and lowered, so that the neck was very short and the chin, when he held his head at ease, was more than one inch lower than the sternum." All the changes of shape and attitude are well shown in the sketches from photographs taken six months before the patient's death, which the writer has reproduced from Sir James Paget's original article. (Fig. 1.)

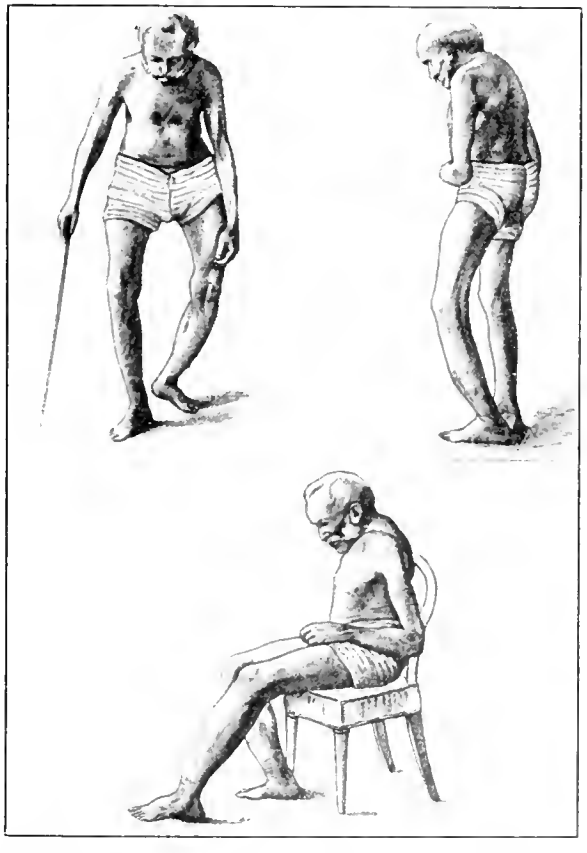


FIG. 1.—Osteitis deformans; reproduction of photographs of the case of Sir James Paget. (From the original paper in the Medico-chirurgical Transactions, Vol. LX, 1877.)

Paget, in further describing this case, states "that the patient's general health was good. The mind was clear, and his only pain experienced was in the left arm, which was of a neuralgic character. A short time before his illness the patient began to lose flesh and strength and became greatly emaciated, and, finally, after an illness of two days,

he died of a right-sided pleural effusion." A post-mortem examination was held, and very full and complete pathological findings are given in Paget's original report.

Seven similar cases were reported by Sir James Paget[5] in 1882, and again in 1884-85 the same

FIG. 2.—Skiagram of the left tibia and fibula. Showing the marked bowing of the shafts and greatly thickened cortical edge, with marked nodosities on the posterior surface of the tibia.

author[6] demonstrated before the Pathological Society of London the post-mortem specimen of the long bones taken from two cases of osteitis deformans.

Following Paget's original and classic description of this disease, which bears his name, numerous contributions were made by later observers. One typical case of this affection was reported in the Guy's Hospital records by Symmonds[7] in 1881, which was followed two years later by reports of cases by Barlow[8] and Pick,[9] two English observers. Later observations were made by Stilling,[10] and also Thibierge,[11] in his report of 1890, tabulates forty-four cases collected from the literature; twenty-one of these cases occurring in men and twenty-three in women. V. P. Gibney,[12] on March 7, 1890, reported before the Practitioner's Society of New York a typical case of osteitis deformans, occurring in a man of fifty years of age. The lower extremities were markedly bowed, but of equal length. There was thickening and enlargement of the bones of the arms, and the cranium had also increased in size. The patient's disease was not preceded by any "acute illness." A monograph by Jourcheray[13] in 1893 upon this subject tabulates but sixty authentic cases, and in the same year Thibierge[14] adds two personal observations to his own contribution. In 1893 H. L. Taylor[15] adds two typical cases to those previously reported, and again in 1894 Watson[16] and Guthrie[17] each report one case. Westerman[18] in 1895 adds one case, occurring in a man of fifty-three years, and in 1895 Clutton[19] demonstrated before the Pathological Society of London a specimen obtained from a case of osteitis deformans which showed a lengthening of the affected long bones. De Hall's[20] case was reported the following year. Levi[21] adds one case to those previously reported. In 1901 a most interesting and lucid article upon this subject, with the report of a typical case, was published in the *American Journal of the Medical Sciences* by Packard, Steele, and Kirkbride,[22] and in 1902 Wilson,[23] another American observer, reports one case. Two cases are reported in 1903 by Menetrier and Gauckler,[24] and one case by Schmieden.[25] Sonnenberg[26] contributes one case in 1904, and in the same year Roberts[27] reported before the Philadelphia Academy of Surgery one typical case occurring in a man of forty-seven. In the following year Daser,[28] Hochheimer,[29] and Auffret[30] each add one case to the bibliography. Saunders,[31] Medea and De Fano,[32] Bardenheur,[33] Tedeschi,[34] Mackey,[35] and Von Kutscha[36] each added one case to the literature in 1906. Two cases were reported by Apert and Bornait-Legeule[37] in 1907, and in the same year one case by Schlesinger,[38] and also Stanley,[39] Waterhouse,[40] T. Cohn,[41] and Wetterer.[42] Chartier and Descomps[43] also report one case in 1907. In 1908 Bramwell,[44] White,[45] Glaessner,[46] and Parkes-Weber[47] each add one case. In 1909 one case is reported by M. Klippel and Pierre Weil,[48] and one by M. Pascarolo and M. Bertolloti.[49] Klippel and Weil's case concerned a woman of fifty-six years in whom the disease had made its appearance eleven years previously and had progressed slowly. There was a marked scoliosis of the vertebral column and thickening and hypertrophy of the bones, and marked distortions of the long bones which was confined almost entirely to

FIG. 3.—Anteroposterior view of the right femur, showing the greatly enlarged and thickened cortex and a characteristic irregular outline. The medullary canal is absent and there are areas of rarefaction.

the right side of the body. A singular manifestation of this case was noted in the fact that there was an increase of surface temperature on the affected side. R. Manwaring White[50] contributes two cases in 1909. Maier,[51] in the same year, contributes one case occurring in a woman of sixty-

four years, and Matsuoka[52] also reports a case concerning a man of sixty-seven years of age. In 1910 R. G. Hann[53] reports one case occurring in a patient of sixty, terminating with cerebral symptoms. Vasek's[54] case was reported in 1911, occurring in a man of sixty-eight, who for twenty years past had noticed a gradual increase in the circumference of his right leg and knee, which was later accompanied by pain in both extremities and back.

One of the most complete and interesting reports upon this subject is by Higbee and Ellis,[55] published in the *Journal of Medical Research* for 1911. Post-mortem findings of this case being carefully recorded.

B. Franklin Stahl,[56] another American observer, in 1912 reports one case with radiographic and necropsy findings.

In the *Am. Jour. of the Medical Sciences* for November, 1901, Packard, Steele, and Kirkbride tabulate sixty-seven cases occurring in the literature; of these 61 per cent. occurred in males and 35 per cent. in females. Wilson in 1903 collected seventeen cases occurring in North America, and Shirmer[57] in 1908 collected eighty-six cases up to that year; of these, forty-six were men and forty in women. So far as the writer is able to ascertain there are but twenty-six cases reported in this country since Packard, Steele and Kirkbride's communication, which number includes the writer's report of one case.

Clinical Manifestations.—According to Paget's original description, the disease usually occurs during middle or advanced years, and is slowly progressive or may remain quiescent for a long period. However, Elsner[58] reports one case occurring in a girl of seventeen years, and Sonnenberg's case concerned a girl of sixteen years of age. The oldest case was that of Stilling's, occurring in a woman of ninety-two years.

The general health is seldom impaired. The mind is clear and the brain never becomes involved as a result of the disease, even when the cranium is greatly thickened. The long bones are usually primarily affected, particularly those of the lower extremities, and later the skull and upper extremities are involved. In some of the recorded cases the earliest sign complained of by the patient was the increase in the circumference of the skull, which necessitated the wearing of a larger hat. In addition to the changes in the bones of the extremities, resulting in softening, thickening and distortion, pathological changes occur in the spine. There results a marked forward flexion of the spine and the length of the vertebral column becomes shorter. Owing to the increased thickening of the cranial bones the neck is flexed and the head bent forward. With the onset of the disease the tibiæ and fibulæ are usually first affected, later the femora becomes hypertrophied, roughened and bowed outward, and finally, in order of frequency, the ribs, the bones of the hands and feet, and the cranium and spinal column become involved. In some of the cases, however, the first sign of the disease was a thickening and enlargement noted in the cranial bones. The joints are rarely involved. The pelvis is thickened and broadened and resembles the osteomalacic type. As a rule, the lower extremities are much more distorted and thickened than the upper limbs, so that walking is often difficult. This was particularly noted in the writer's case. The vertebral column often presents a marked rounded kyphosis in the dorsocervical region, and the entire vertebral column is bent forward. The thickening of the ribs and the sternum often leads to respiratory disturbances, and pneumonia and pleurisies are not uncommon complications. Ankylosis of the vertebral column often occurs and may be partial or complete. Pain is often complained of in the affected bones, varying in severity, and frequently characterized as rheumatic or neuralgic. Constitutional disturbances are not present and there is no febrile reaction accompanying the disease. The blood picture is not altered and there are no urinary changes.

Numerous theories have been advanced as to the cause of Paget's disease, but up to the present time the etiology is still unknown. Czerney[59] was inclined to believe that syphilis was the etiological factor, while other observers considered cancer, rheumatism, arteriosclerosis, and trauma as the cause of osteitis deformans. The duration of the disease varies from five to thirty years. Death occurring from some intercurrent affection. In three of Paget's cases carcinoma was present.

Fig. 4.—Anteroposterior view of the left femur showing marked thickening, enlargement and bowing of the entire shaft. There is a great thickening of the cortex and an entire absence of the medullary canal. At the greatest convexity of the shaft is the site of an old fracture.

Complications.—Arteriosclerosis and atheromatous changes are not uncommon, and trophic skin eruptions and leg ulcers are often observed. Pulmonary emphysema and pleural effusions and hypostatic pneumonia complicate the disease, due to a compression of the thorax and fixation of the ribs, sternum and clavicles.

In one of Paget's cases Bright's disease with valvular changes in the heart and general anasarca was noted in a patient of sixty-five years. Pathological changes of the nervous system secondary to osteitis deformans were observed at autopsy in the case of Stilling, and Levi observed a marked sclerosis of the spinal cord in his case of a woman of sixty-two years.

Pathological Findings.—A complete necropsy was performed by Goodhart in 1869 upon Wilks' case,

which findings agreed with those demonstrated by Butlin,[60] who autopsied the first case reported by Sir James Paget. The Haversian canals are greatly dilated and enlarged, and there is a resorption of bone substance and a marked production of new-formed bone. This is termed "fibro-osteoid" tissue by Higbee and Ellis. The periosteum is roughened and greatly thickened. The new bone which is formed has its origin from periosteum. This new bone being devoid of calcium salts, softening and distorition results, particularly noted in the long bones. Rarefaction takes place in the interior of the bones, with the formation of compact tissue beneath the periosteum. The bones are, therefore, roughened, heavier, thicker, and greatly curved.

Packard, Steele, and Kirkbride summarize the pathological changes as follows: "First, there is absorption of the compact bone substance with subsequent enlargement of the Haversian canals. Second, there is a formation of new bone, this new bone later undergoing absorption, and does not become calcified. Third, there is a transformation of the marrow into a vascular connective tissue, containing giant cells, fat, and leucocytes. Fourth, owing to the deficient calcification of this newly developed bone substance, softening results which leads to marked curving and bowing of the shafts of the long bones."

The first radiographic examination in this disease was made by Gallois in 1901, in the Beclere Institute, upon a case reported by Gaillard. The skiagram showed marked thickening of the radius and ulna, particularly of the cortical substance of these bones. Both femora were involved, and the tibiæ, especially, showed enormous thickening. The tibial artery was plainly visible and presented well-marked sclerosis. In the radiogram taken of Sonnenberg's case there was not only a thickening and roughening of the long bones, but also an actual increase in the length of the affected bones. This writer was the first to obtain a skiagram of the pelvis in a case of osteitis deformans, which was found to resemble the osteomalacic type.

As to the treatment of this progressive disease little or nothing has been accomplished. Up to the present time it can be said to be only palliative. Massage, electricity, dietetic and internal medication seems to have no effect whatsoever upon the disease. De Hall claims that the severe pain in some instances has been relieved by the administration of potassium iodide combined with quinine. Cauterization and cantharides plasters applied to the spine have been of value in affording relief from pain in some instances. In some cases orthopedic apparatus in affording support and fixation of the spine has proven of great value. Osteotomies of the tibiæ have been undertaken but are not to be advised. In Sonnenberg's case an osteotomy was performed for the correction of the deformity; the wound healed by primary union, but a pseudoarthrosis resulted.

Most authorities are, therefore, agreed that surgical intervention is not warranted.

The case which came under the writer's notice concerned a woman of twenty-five years. She is unmarried. Born in Kansas and has resided in Colorado for the past year. Occupation, housewife.

Previous History.—The patient was a healthy, normal child at birth. She had an attack of measles during early childhood. There was no history of rickets, tuberculosis or rheumatism. When five years of age she fell, fracturing her left femur. From this injury she made a complete recovery. Up to the time of her present illness she always enjoyed excellent health. The father died at the age of fifty, of locomotor ataxia. The mother is living, but is in delicate health. The grandmother died of pulmonary tuberculosis. The patient's menstrual history is negative.

Present History.—When ten years of age she first began to have pain in both thighs, which was increased by exercise. At the age of sixteen years she fell, striking upon her back and left hip, not, however, sustaining a fracture of any bone. She was confined to her bed for three weeks, owing to severe "bruises" sustained to the left thigh as the result of the accident. One year following this accident she began to have pain of a rheumatic character in her left thigh and leg. This pain was not severe, and at times was entirely absent. Salicylites were administered but without beneficial effect. Three years later pain in the lower spine developed, sometimes radiating down the back of the thigh to the knee. Stiffness of the spine was also noticed. This pain was always more severe at the time of her menstrual periods. Coincident with this lumbar pain the patient complained that after even mild exercise she tired easily, and that both thighs were becoming "bowed." There was no decrease in height noticed. Her general health remained good. Her appetite was excellent and she slept well.

One year previous to her coming to Colorado the pains in the thighs and back increased and the curvature of the thighs became so marked it was with difficulty that she was able to walk. Her gait became waddling and she "stumbled" easily.

Examination.—A well-nourished young woman, not anemic, and of keen intellect, walking with a marked waddling gait, with her shoulders stooped and back in slight forward flexion. Weight of eighty-seven and one-half pounds, and height of four feet, eight inches. Temperature was normal and a pulse of sixty-eight.

The heart and lungs were normal and the abdomen was negative. There was no evidence of rickets, tuberculosis or arteriosclerosis. The head was carried erect and was of normal size and shape. There is no change of contour of the facial bones. There is no discoloration of the skin.

The Spine.—There was no kyphosis, but there was a mild degree of rigidity in the entire spinal column: the vertebral column being bent forward; the most marked flexion being in the lumbar vertebræ. Motion, although restricted, was not attended with pain. The width of the pelvis was increased and the crest of the ilia thickened.

The upper extremities were normal.

The lower extremities were greatly curved, the femora being most markedly bowed outward. All the long bones of the lower extremities were enlarged and thickened, and this could be easily detected in the tibiæ, particularly that of the right side. There is an anterior as well as outward bowing of both tibiæ.

Extension of the thighs was normal, but rotation outward was restricted. Both the right and left trochanter measured two inches above Nélaton's line. There was no ankle clonus, and Babinski's sign was absent. The knee jerks were not increased. Pressure on the thighs and legs was not painful, and there were no skin lesions on any part

of the body. The measurements: From the right anterior superior spine to the internal malleolus was 27½ inches (R. A.). From the left anterior spine to the internal malleolus was 27¼ inches (L. A.). From the umbilicus to right internal malleolus was 30½ inches (R. U.), and from the same point to the left internal malleolus was 30½ inches (L. U.). Circumference of the left thigh measured 4½ inches down from the anterior superior spinous process of the ilium was 18½ inches, and 10 inches down from the same point was 12 inches. Circumference of the right thigh measured 4½ inches, down from the anterior superior spinous process of ilium was 16¾ inches, and 10 inches down from the same bony point was 11⅞ inches. Circumference of the left calf was 11 inches, and of the right calf was 10¾ inches. Owing to the bowing outward of the femora, the spacing between the thighs measured 7½ inches. The width of the pelvis was 16½ inches. The knee and ankle joints were normal. The tibiæ are of the same length. The urine examination was negative.

The excellent radiographs, which confirmed the writer's diagnosis of this case, were very kindly taken for me by Dr. S. B. Childs of Denver, and show the characteristic bony changes observed in this disease.

The radiographic examination taken of the lateral view of the left tibia and fibula (Fig. 2) shows the marked bowing of the shafts of each bone with a greatly thickened cortical edge, associated with marked nodosities on the posterior surface of the tibia, and anterior and posterior surfaces of the fibula. The lighter areas indicate zones of rarefaction. There is an entire absence of the medullary canal. The cortex is greatly thickened and irregular, and the dark linear shadow overlying the posterior surface of the tibia is caused by the overlying dark shadow of the fibula.

Skiagram of the anteroposterior view of the right femur (Fig. 3) shows a greatly enlarged and thickened cortex, the entire bone with the exception of the head and part of the neck being greatly enlarged. The great trochanter is situated three inches above the head of the femur and connected thereto by a long, distorted neck. The thickened cortical edge, with its characteristic irregular outline, is well shown in this skiagram, as well as the areas of rarefaction and the entire absence of the medullary canal and bony striæ.

The anteroposterior view of the left femur (Fig. 4) shows marked thickening and enlargement of the entire shaft of the bone, particularly of the upper third. There is a great elevation of the greater tuberosity and close approximation to the ilium, with a marked upward obliquity of the femoral neck. At the greatest convexity of the shaft is the site of an old fracture. There is marked thickening of the bone throughout its entire length, especially of the cortex, and an absence of the medullary canal.

The case which the writer has had the pleasure of reporting is, he believes, typical of this rare bone affection, but differs from the majority of similar cases recorded in the literature in the fact that the first manifestation of the disease occurred at the age of sixteen years, affecting primarily the lower extremities, and later the vertebral column.

I wish to express my thanks to Dr. F. Robbins of New York City, and to Miss M. Malins of Denver, who aided me in reviewing the literature upon this subject.

BIBLIOGRAPHY.

1. Paget: Medico-Chirurgical Transactions, Vol. LX, 1877, p. 37.
2. Wrany: Prager Vierteljahresschrift, Vol. I, 1867, p. 79.
3. Wilks: Transactions of the Pathological Society, London, 1868-69, Vol. XX, p. 273.
4. Rullier: Bulletin de l'Ecole de Médecine de Paris, 1912, p. 94.
5. Paget: Transactions of the Medico-Chirurgical Society, London, Vol. LXV, 1882, p. 225.
6. Paget: Transactions of the Pathological Society of London, 1884-1885, Vol. XXXVI, p. 382.
7. Symmonds: Guy's Hospital Reports, Vol. XXV, 1881, p. 99.
8. Barlow: *British Medical Journal*, June 16, 1883, p. 1178.
9. Pick: *Lancet*, Vol. II, 1883, p. 1125.
10. Stilling: Virchow's Archiv., Vol. CXIX, 1890, p. 542.
11. Thibierge: *Archives Gen. de Med.*, Vol. I, 1890, p. 52.
12. Gibney, V. P.: MEDICAL RECORD, April 19, 1890, Vol. XXXVII, p. 452.
13. Joucheray: "De l'osteite deformante maladie osseuse de Paget." Monograph, Paris, 1893.
14. Thibierge: Bull. et Mem. de la Soc. Med. des Hop. Tone X, 1893, p. 116.
15. Taylor, H. L.: MEDICAL RECORD, Vol. XLIII, January 21, 1893, p. 65.
16. Watson, A.: *Quart. Jour. Med. and Surg.*, Melbourne, 1894, p. 45. Johns Hopkins Hosp. Bulletin, 1898.
17. Guthrie: Transactions of the Med. Soc. of London, Vol. XVII, 1894, p. 355.
18. Westerman, J.: *Nederl. Tijdschr. v. Geneesk* II, 1895, p. 938.
19. Clutton, H. H.: Transactions of the Pathological Society, London, 1895, Vol. XLVI, p. 138.
20. de Hall: *Lancet*, April 18, 1896, p. 1064.
21. Levi: Bulletin d. l. Soc. Anat. de Paris, 1896, No. 13, p. 439.
22. Packard, Steele, Kirkbride: *Amer. Jour. Med. Sciences*, Vol. CXXII, 1901, p. 559.
23. Wilson: *Phila. Medical Journal*, Feb. 15, 1902.
24. Menetrier and Gauckler: *Revue française de Med. et de Chir.*, No. 40, 1903.
25. Schmieden: *Deutsch. Zeitschrift für Chirurgie*, Vol. LXX, 1903, p. 207.
26. Sonnenberg: *Fortschr. auf dem Gebiete der Röntgenstr.*, Vol. VIII., 1904-05, p. 420.
27. Roberts: *Annals of Surgery*, Vol. XXXIX, 1904, p. 438.
28. Daser: *Münch. med. Wochenschr.*, Vol. LIII, 1905, p. 1635.
29. Hochheimer: *Charite-Annalen*, Vol. XXIX, 1905, p. 29.
30. Auffret: *Revue d'Orthopedie*, No. 6, 1905.
31. Saunders: *West London Medical Journal*, 1906, p. 27.
32. Medea and Da Fano: Morgagni, No. 6, 1906.
33. Bardenheur: *Deutsch. med. Woch.*, 1906, Vol. XXXII, p. 525.
34. Tedeschi: *Semano Med.*, Buenos Aires, 1906, Vol. XIII, p. 993.
35. Mackey: *Lancet*, Sept. 22, 1906, p. 787.
36. von Kutscha: *Wiener klin. Wochenschrift*, 1906, p. 1461.
37. Apert and Bornait-Legeule: Bull. et mem. de la Soc. Med. das Hop. de Paris, Vol. XXIV, 1907, p. 235.
38. Schlesinger: *Mitteil. der Gesellschaft für innere Med. und Kinderheilk.*, in Wien. Feb. 21, 1907, p. 61.
39. Stanley: *Lancet*, 1907, Vol. I, p. 889.
40. Waterhouse: *Lancet*, 1907, Vol. I, p. 1,215.
41. Cohn, T.: *Berliner klin Wochenschrift*, No. 24, 1907.
42. Wetterer: Archiv. für Phys. Medezin, Vol. II, 1907, p. 210.
43. Chartier and Descomps: *Nouvelle Iconographie de la Salpêtrière*, 1907, p. 84.
44. Bramwell: Transactions Medico-Chirurgical Soc., 1908, p. 254.
45. White, Sinclair: *British Medical Journal*, 1908, p. 1,675, Vol. II.
46. Glaessner: *Wien. klin. Wochenschrift*, 1908, Vol. CXXXIX, p. 321.
47. Parkes-Weber: *British Journal of Children's Diseases*, March, 1908.
48. Klippel and Weil: *Nouv. Icon. de la Salpetriere*, XXII, 1909, Paris, pp. 1 to 23.
49. Pascarolo and Bertolotti: *Nouv. Iconographie de la Salpetriere*, 1909. XXII, p. 253.
50. White, R. Manwaring: *British Medical Journal*, 1909, Vol. II, p. 12.

51. Maier: *Charité-Annalen*, Vol. XXXIII, 1909, p. 755.
52. Matsuoka: *Deutsch. Zeitschrift für Chirurgie*, Vol. CII, 1909, p. 515.
53. Hann, R. G.: *British Medical Journal*, 1910, Vol. I, p. 135.
54. Vasek: *Centralblatt für Chirurgie*, No. 31, 1911, p. 1,093.
55. Higbee and Ellis: *Journal of Medical Research*, Vol. XXIV, 1911, p. 43.
56. Stahl, B. Franklin: *The American Journal of the Medical Sciences*, Vol. CXLIII, April, 1912, p. 525.
57. Shirmer: *Centralbl. für d. Grenz. der Med. und Chir.*, 1908, Vol. XI, p. 561.
58. Elsner: *New York State Journal of Medicine*, Vol X, 1910, p. 287.
59. Czerny: *Wiener med. Wochenschrift*, 1873.
60. Butlin: Sir James Paget's report, Medico-Chirurgical Transactions, Vol. LX, 1877.

KNIGHTS OF COLUMBUS BUILDING.

REPORT OF A CASE OF LUPUS ERYTHEMATOSUS DISSEMINATUS.

BY ANDREW J. GILMOUR, PH.B., M.D.,

NEW YORK.

CONSULTING DERMATOLOGIST, MANHATTAN STATE HOSPITAL; ASSISTANT ATTENDING DERMATOLOGIST, NEW YORK CITY CHILDREN'S HOSPITAL AND SCHOOLS.

J. F., male; white, age nineteen years; nativity, Austria; occupation, bartender.

Father died of heart disease at the age of forty-five. Mother is living and well. One brother, twenty-two years old, two sisters aged twelve and eight years, respectively, are living and well.

The patient, when he was a child, suffered from

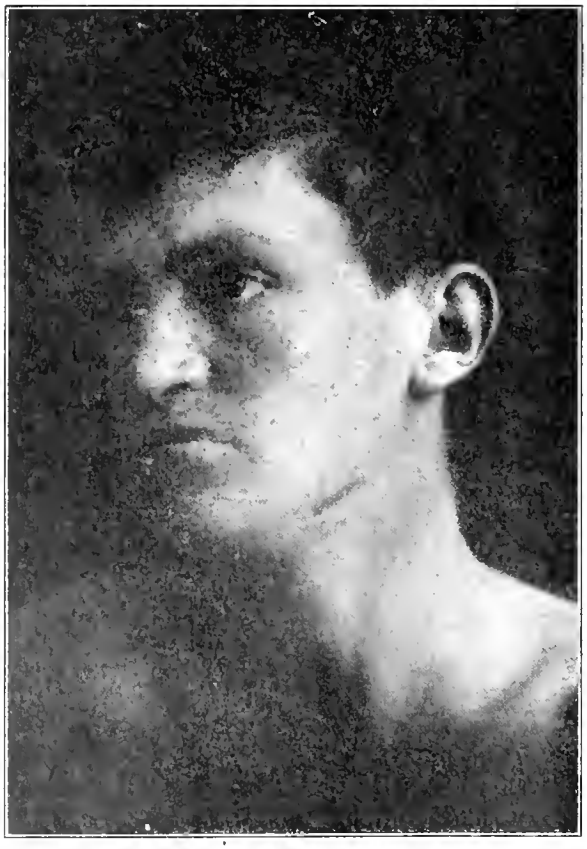


FIG. 1.

an abscess on the left side of the jaw. The scar from this is still plainly visible.

For eighteen months previous to November, 1908, the patient was employed as a lineman for the Western Union Telegraph Company. About December 1, 1908, the patient had the left ear frozen. Shortly after this the patient noticed, as he expressed it, "the skin behind this ear got crumbling." He employed cold cream without effect. The following April, 1909, the disease appeared on the right side of the nose. He then had treatment at one of the New York clinics without an improvement of his condition. Six months later, October, 1909, numerous spots appeared simultaneously on the abdomen. Eighteen months ago, April, 1910, lesions began to appear on the palm of the left hand. These lesions on the hand were not large ones, all smaller than a one-cent piece. They were active about ten months, then healed. After eight months slight scarring is still present.

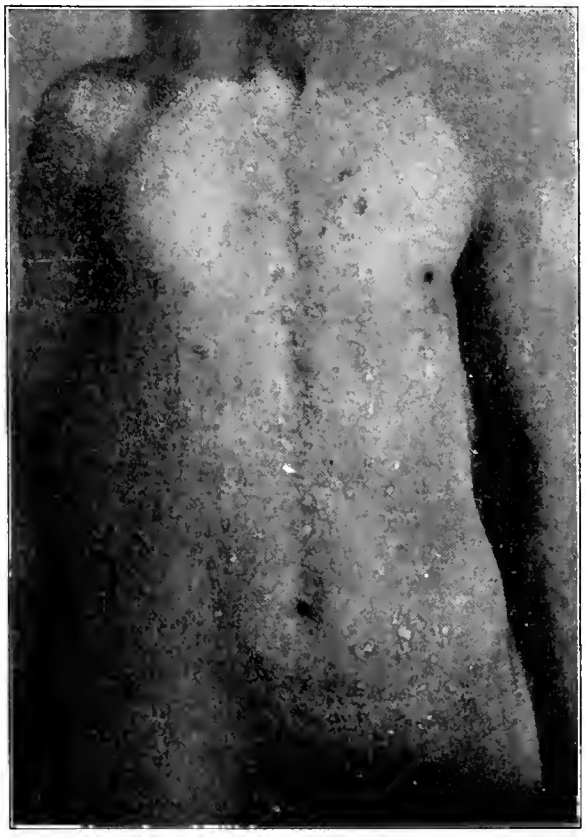


FIG. 2.

One year ago lesions began on the tips of the ring fingers. These lesions have grown under and gradually raised the nail in a ridge parallel to the long diameter of the nail. This process has caused a splitting of the free edge of the nails at the crest of the ridge. White, closely packed scales, which have the appearance of mortar, are seen under these nails.

Physical examination shows that the entire nose is involved in an atrophic process and is covered with fine, white scales. At its upper half the lesion runs just a little beyond the nose on either cheek. There is a round spot the size of a twenty-five cent piece in the middle of the left cheek.

Eight small areas, in diameter about one-half inch each, are between this spot and the left ear. The entire left ear and an area extending one-half inch behind it is involved.

A lesion, with the diameter of half an inch, lies two inches behind the tip of this ear. The entire right ear is affected, but not as severely as the left ear. There is the same extension behind this ear as in the case of the other ear. The same small spot is present two inches behind the tip. Three-

quarters of an inch in front of the middle of each ear there are two spots each three-quarters of an inch in diameter and situated one above the other. These are more or less fused. We see that the involvement of the ears and the surrounding area are symmetrical in extent, but not in degree.

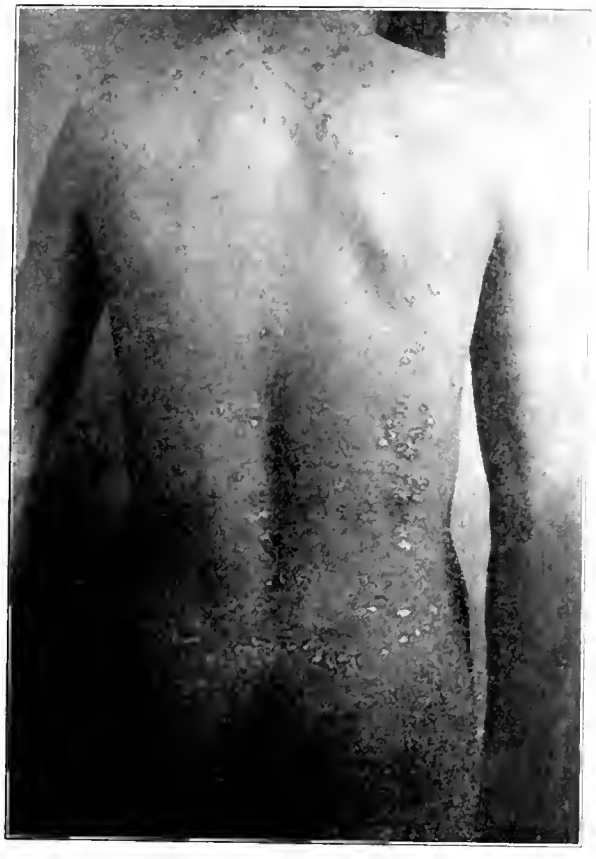


Fig. 3.

The top of the head shows a dozen small spots of atrophy. Two of these spots are larger than the others, having a diameter of one inch. These two large ones show well-marked atrophy, scaling and loss of hair. Both arms show a few lesions on their outer aspect.

The forearms on their flexor surface are free. The right forearm has four spots on its extensor aspect. The right hand has five spots on its dorsal aspect. The ulnar side of the hypothenar eminence of this hand is slightly affected. The right thumb shows four spots on its inner side. The right little finger is involved on the inner side of the back of the terminal phalanx. The right ring finger shows lesions of the back of the terminal phalanx of the tip of this finger, and an involvement beneath and of the nail.

The left forearm has four lesions on its extensor surface. The back of the left hand has a small lesion one inch above the junction of the little finger with the hand. The left thumb is affected on the dorsal and ulnar side of the last phalanx. The left index and middle finger has the dorsal surface of the terminal phalanges involved. The left ring finger is affected on the back and ulnar side of its terminal phalanx. The tip of this finger and nail are involved in the same extensive manner as the right ring finger. The left little finger has the dorsal surface and tip of the terminal phalanx slightly involved.

The entire front of the chest and the abdomen, except for a rectangular area extending one inch below, two inches above and to either side of the umbilicus is thickly studded with lesions one-quarter to one inch in diameter.

The form of these spots is in general oval or round. In places several of these spots have fused, forming more or less kidney-shaped areas about two inches in length. The back at its upper part is involved in a crucial manner. An area three inches broad runs for about six inches down the spine from the neck; another area of small lesions crosses this following the spines of the scapulæ. The middle transverse area of the back is quite free from lesions.

The lower third of the back has an area of lesions running down the spine. Numerous lesions are scattered on either side of this area. A thickly involved area runs across the back above the gluteal fold. A few spots are present on the upper inner part of the left gluteal region. The sides below the floating ribs are free from lesions, except for one spot one-quarter of an inch in diameter situated on the left side. Except for two small spots on the thighs the lower limbs are free.

The individual lesions range in size up to one inch in diameter. They have a pinkish border with a grayish white, scaly base, which in most lesions is below the level of the surrounding skin.

The more atrophic lesions are pigmented and have lost considerable of the grayish color. Von Pirquet and Wassermann tests were both negative. The patient is in fair physical condition and considers himself well except for the eruption.

Fig. 4.

Treatment has been applications of carbon dioxide snow to the nose with a good result. The patient came to the clinic when out of work, but since obtaining a position he has not returned.

133 East 57th Street.

ADENOMATOUS HYPERPLASIA OF THE PROSTATE GLAND.*

OPERATION AND POSSIBLY CONSEQUENT CHRONIC SUPPURATIVE NEPHRITIS WITH CALCULI IN KIDNEY, URETER, AND BLADDER.

By VICTOR COX PEDERSEN, A.M., M.D.,

NEW YORK.

The following case is unmistakably difficult and complicated in its course and illustrates very well the saying attributed to Virchow, "If we would know more thoroughly, we must examine more carefully."

J. A. D. (Case 12,590), U. S., white, fifty years, single, retired policeman. February 26, 1912. Referred by Dr. Lester Laurens Roos.

Family history states that father died by accident; mother of nephritis; three brothers of scarlatina, drowning, and alcoholism, respectively; one sister in childbirth. Personal history, childless and divorced; wife without venereal disease. His own general health has always been good up to the present affliction which began two years ago. Denies all infectious disease, excepting malaria twenty years ago. No renal injury or disease remembered. Denies all causes of nephritis, except scarlet fever and an alcoholic habit, seemingly too moderate to be a factor. Denies causes of albuminuria (other than nephritis) except prostatic disease as later stated.

Former venereal history: denies syphilis and chancroid, but admits urethritis thirty-three years ago, persisting for five or six years with frequent relapses, but no complications, without definite treatment, except in drug stores. Bilateral epididymitis began twelve years ago without previous exposure to cold, injury, instrumentation, or reinfection. Persisted for twelve days under private treatment with poultices but without operation. He next remained in good health up to February, 1910, when he was admitted to one of the large hospitals of this city, with the following condition:

I am indebted very deeply to the attending surgeon for permission to publish the record of the case at the hospital.

J. A. D., admitted February 24, 1910, diagnosis, hypertrophy of the prostate. History, patient returns for permanent relief following a visit to the hospital for retention of urine. Discharged February 17, 1910, after relief by passage of a filiform and tunneled sound and eventually plain 22 F sound. Gives a history at that time of inability to urinate for three days previous, except for overflow dribble and of several ineffective attempts outside the hospital to catheterize him. Never any blood. Previous to this time, gives history of slight diminution of size and force of urinary stream for about a year, but no previous attacks of retention. At present, no pain or interference with urination, except increased frequency, two or three times by day and two times by night. Appetite good; bowels regular. Gonorrhea thirty years ago; denies syphilis. Four years ago had abscess of the rectum.

Physical examination: Very well nourished; good color; tongue clean; lungs slight emphysema; heart-sound muffled; second aortic accentuated; pulse regular; good force; walls slightly thickened.

Surgical condition; A meatus small, but admits 24 F sound, with considerable pain; about 2 ounces of clear, pale residual urine drawn by catheter after urinating. By rectal examination, prostate enlarged and firm, especially over middle lobe; no tenderness; pressure causes desire to urinate; external sphincter tight and somewhat tender.

Operation: February 26, 1910, perineal prostatectomy, gas and oxygen anesthesia. Lithotomy position; tunneled sound introduced; midperineal incision made; urethra opened; bladder entered; prostate gland enucleated with the finger; perineal tube inserted with iodoform gauze packing.

Ward records show uneventful but rather long convalescence, with the usual standard medical and surgical management.

Second operation: March 21, 1910, dilatation of urethral stricture; chloroform anesthesia; dorsal position; meatus incised; plain gauze introduced; sounds introduced; stricture found at the membranous urethra; dilated to 30 F. Patient discharged from the hospital May 16, 1910.

Pathological report: Diagnosis, adenomatous hyperplasia of the prostate gland (may prove malignant). February 26, 1910.

Macroscopical, fragments of prostate gland, hard, fibrous-like, on section.

Microscopical, increased glandular elements with some increase of fibrous connective tissue.

It should here be added that the ward notes show nothing significant in the uranalyses. Patient recalls no symptoms at all in the urine itself.

It is not our function to criticise the foregoing data for the briefest moment or in the mildest degree. Incidentally, however, and in the light of that which followed in this case, it is to be regretted that no cystoscopy, radiography, or ureteral catheterization seems to have been carried out on this patient at this time. There certainly was no direct indication for any of these procedures, but it will be at once obvious to the reader as he proceeds that a comprehension of the later history and pathology and termination of the case would have been rendered more positive than at present had these procedures been followed and their results recorded.

The patient seems to have developed incontinence of urine after the operation from which he never recovered fully, although he was able to start and stop the stream of urine more or less successfully at command, provided the bladder was not very full. He was obliged to wear a rubber urinal day and night, which soon led to his resignation from the Police Department and to partial invalidism. Syphilis was denied, and examination for the signs of locomotor ataxia was negative.

For the incontinence he sought the advice of the operating surgeon, who referred him to a urologist for cystoscopy, with the resulting report that the muscle at the neck of the bladder appeared to be in trouble. No more detailed diagnosis than this, however, seems to have been possible, or really could be expected.

He was first seen by me in company with his physician about Christmas time, 1911. His great need of hospital treatment led me to refer him to one of the large hospitals. Radiography was negative as to stones in the urinary tract. Cystoscopy at this time showed a generalized cystitis, a greatly deformed bladder floor, a nearly normal left ureteral mouth, and a right ureteral mouth inflamed and so situated in the midst of the inflammatory zone

*Read before the Medical Progress Club, October 9, and before the West Side Clinical Society, October 12, 1912.

as to be difficult to make out and impossible to enter. The urine showed all the symptoms of cystitis. The man was examined carefully and it was decided that his seminal vesicles were inflamed and that a double drainage operation might relieve the symptoms. It was distinctly stated in my presence that one could not promise the patient anything definite, but that the indications and hope of the case lay in the direction of this operation. The procedure was carried out on the patient on January 7, 1912, with immediate and promising relief, and a convalescence without incident. Soon after leaving the hospital, however, the fever, pain in the right kidney region, and cystitis all increased. The renal region showed no definite physical signs. The most marked of the three was the cystitis, which had taken on the form of calculous irritability.

This distinct and sudden increase in symptoms looked to me like a relapse, which led me to cross-question the man again carefully as to whether he had ever had similar though milder attacks. Even with careful afterthought he assured me that he had nothing the matter with his genitourinary tract, including the urine, prior to February, 1910, when he applied for relief. Be it remembered that the urine was at this time normal, so far as recorded examinations show.

I consequently decided to make another attempt to cystoscope the patient and if possible catheterize the ureters, which was done February 26, 1912. A stone the size of the little finger tip was located, apparently phosphatic. The patient recalled no renal colic in explanation of the stone, and I know that the cystoscopies done just prior to the vesiculotomies would have found it had it then been in the bladder. These two facts forced the conclusion that the stone must have been delivered from the ureter of the right side during the operation of seminal vesiculotomy, and the local improvement under the examining finger after the operation was probably due to the absence of this stone.

J. A. D. URANAYLSIS OF URETERAL CATHETERISM February 26,1912

	Left	Right
Kidney		
Appearance	Clear, small sediment	Clear, decided sediment
Volume	Estimated drachms 6	Estimated ounces 1½
Specific gravity		1021
Reaction		Acid Normal
Color (Vogel's scale)	No. 2 light yellow	Red
Chlorides		Normal
Albuminuria (Purdy's method)	0.1%	0.5%
Sugar	None	None
Urea (Carbonid)	0.3%	1.9%
Pus cells	One-fifth as many as right	Innumerable, distorted
Epithelial cells	Few, flat	Few, flat and round
Renal casts	None	None
False casts	None	None

Remarks: The divergence in quantity between the two kidneys seems to have been due to leakage around the catheter in the left ureter. The very small urea output from the left side, combined with the slightly decreasing excretion seems to indicate susceptibility of this kidney to instrumental invasion. Much of the pus from the right side was undoubtedly vesical in origin.

Ureteral catheterization, February 26, 1912. Water taken, four ounces at 10.30, 10.53, 11.25, 11.50 A.M., and 12.08, 10.50 A.M. 6 F. catheter into left ureter. Catheter into bladder to catch urine from right kidney after thorough washing of bladder.

Left kidney. Catheter in ureter, 10.50 A.M., first urine, 10.50 A.M.; phenolsulphonephthalein 1 c.c. 11.30 intravenously; color appeared, 12.15. Discharge of urine very slow, decreasing to drops about 12. Total urine, about six drachms (not measured).

Right kidney. Soft rubber catheter in bladder, 10.50 A.M., first urine, 11 A.M., color appeared 11.42 A.M. Total urine, about one and a half ounces.

J.A.D. CATHETERIZATION OF URETERS March 1, 1912

	Medication	Left Ureter	Right Ureter
11:00 A.M.	Water oz. VI.		
11:06 A.M.		Catheter in 15 cm.	
11:13 A.M.			Catheter in ureter obstructed at 3 cm
11:15 A.M.	Water oz. VI.	Urine appearing.	
11:30 A.M.	Water oz. VIII.	Urine No. 1 oz. I.	
11:43 A.M.	0.7 c.c. phenolsulphonephthalein intravenously	Urine No. 2 oz. I.	No urine at all.
11:55 A.M.	Water oz. IV.		
12:05 M...	Water oz. IV.	Urine No. 3 oz III.	
12:15 M..		Urine No. 4 oz. IV.	Oz. III. urine thru cystoscope from floor of bladder, similar in appearance to that from left kidney (leakage?).
12:20 M...	Water oz. IV.		
12:40 M...		Urine No. 5 oz. IV.+	
1:00 P.M.		Urine No. 6 oz. III. paling out.	
1:05 P.M.			Catheter out. Bladder washings saved for pus from right kidney.
1:07 P.M.		Catheter out.	
1:15 P.M.	Evacuated mixed urine oz. I.		

It will be noticed that this catheterization was far from satisfactory. There must have been a good deal of leak around the ureteral catheter, and seemingly an anuria of the left kidney. No local anesthetic had been used in the bladder, which may have been the basis of these conditions. Great gentleness and deliberation in the work rendered such anesthetic not necessary.

On March 1, 1912, the catheterization was repeated. The bladder was washed very thoroughly with 2 per cent. boric acid water, until the return was clear and shredless. Then a 2 per cent. solution of alypin was instilled into the bladder and urethra, retained fifteen minutes, evacuated, and replaced with 150 c.c. of warm 2 per cent. boric acid water. The patient was now ready to cooperate fully. The Brown-Buerger cystoscope was introduced readily and a view very much better was obtained. The stone was located again on the left side in a normal depression, just beyond the plica ureterica, pyramidal, about the size of the little finger-tip; bladder as a whole in good condition, except for signs of universal cystitis. Right ureter has no mucus sticking from it, but is enlarged, reddened, granular, patulous. Left ureter nearly normal. Left ureter easily entered with a 6 F instrument for 15 cm. without blood or pain in about six minutes. Right ureter entered with great difficulty after seven minutes. Slipped out, was reintroduced for only 3 cm., when an obstruction was encountered. Great pain, virtually ureteral colic, was caused by entering and moving the catheter in the right ureter. When withdrawn it brought with it several strings of mucopus, blood-stained, and very tenacious. The left ureteral catheter, on removal, brought with it no blood, mucus or pus. In taking the separated urine at this catheterization the separate specimens were taken about every fifteen minutes, hoping to show the conditions progressively. The chart indicates, however, that this was not a success.

On March 13, 1912, in consultation with Dr. James Pedersen and Dr. Roos, we attempted to

prove the presence of stone in the right ureter near the bladder by passing the probe catheter. On this occasion we found another small stone in the bladder, either broken from the first one or subsequently discharged from the ureter. The combined urines showed 28 per cent. of phenosulphoneph-

Fig. 1—Radiograph showing large calculus in the right ureter which, through its oblique position, cast a shadow larger than itself; also showing the small calculi in the bladder just above the symphysis pubis of the same apparent size as seen through the cystoscope.

thalein during the first, and 16 per cent. during the second hour after intravenous injection, total 44 per cent., which seemed to us a very good elimination considering all his conditions. The question of the cause of this complex situation led me to have another radioscopic examination performed as that done at the hospital in January was not conclusive, and also induced me to have at least two examinations of the urine for tubercle bacilli.

J.A.D. Uranalysis of Ureteral Catheterism March 1, 1912

	Left Kidney		Right Kidney.	
Quantity	16 ounces			
Albumin	0.05 per cent.	0.05 per cent.	0.03 per cent.	0.20 per cent.
Specific grav.	1006	1001	1001	Insufficient quantity
Urea	0.36 per cent.	2-10 of 1 per cent.		
Pus mm	7.0	0	Innumerable slugs	400
Blood	310	0	100	600
Red	0.7	0.6	0.1	1.1

"J. A. D. *x*-ray findings, March 16, 1912, Dr. Victor Cox Pedersen. Ribs, spine, transverse processes, spine of the ischium and coccyx show distinctly. Psoas muscle shows distinctly. The left kidney shows distinctly and is normal in size, shape, and position. The outline of the right kidney is not shown sufficiently distinctly to justify one in stating its size. There is one large and several small shadows in the region of the lower pole of the right kidney. There is a large, long, horn-like shadow in the region of the lower end of the ureter, and two clear-cut, well-defined shadows in the region of the bladder.

Diagnosis: From a study of these plates one is justified in stating that there is one large and several small calculi in the right kidney and a large calculus in the right ureter, and two moderate sized ones in the bladder." (Signed) Lewis Gregory Cole, M.D.

I am indebted to Dr. Lewis Gregory Cole for two investigations of this case March 8 and 16 at his *x*-ray research laboratory, with the resulting admirable photographs and final report.

Dr. Cole's examination of March 8 concurred in that of March 16, but as he was not fully satisfied

Fig. 2—Radiograph showing one large and three small shadows from calculi in the right kidney

himself he conscientiously and graciously repeated the entire procedure for me.

Examination of two 24-hour specimens of urine were done March 5 and 15, with the following results:

J.A.D. Uranalysis of 24 Hour Specimens March 5 and 15, 1912

24 hour spec.	Yes	Yes
Physical analysis: Quantity	1767 c. c.	1305 c.c.
Clearness	Turbid with heavy purulent sediment	Clear, small sediment
Color	Filtered No. 3 normal	No. 3
Reaction	Feebly acid	Acid
Spec. grav. at 150 C.	1018	1016
Biliary matter	None	None
Chemical Anaylsis: Peptones	None	None
Urea (normal 2 6-10 per cent.)	1.7 per cent.	1.2 per cent. (average 1.45)
Indican	Not noted, probably Normal	Normal
Diacetic acid	None	None
Acetone	None	None
Glucose	None	None
Diazo-reaction	Negative	Negative
Albuminuria (Purdy's method)	0.3 per cent. by weight	0.2 per cent. by weight
Microscop. analysis: Concretions	None	None
Pus	Heavy purulent sediment	Less sediment
Mucus	None	Mucopus
Red blood cells	None	None
Uric acid	None	None
Urates	None	None
Oxalates	None	None
Calc. phosphates	None	None
Bas. mag. phosph.	None	None
Gran. phosphates	None	None
General elements: Pus	Cells, innumerable, distorted	Cells innumerable
Epithelia	No characteristic cells seen	
Bacteria: Colon bacilli	Smears of sediment show frequent Gram negative bacilli which ferment lactone in presence of bile. This is of no value because of easy contamination of urine with bacteria from intestines	Innumerable colon bacilli
Tubercle bacilli	None	None

Having thus secured a definite diagnosis of

calculi in kidney, ureter, and bladder, and of passably efficient excretion of urine, intervention surgically was warranted. As the patient was conditioned, work was impossible. The desire of the man to get well and return to duty were also reasons for undertaking to help him. Members of his family and he himself specifically accepted the risk of operation, which was fully explained.

The patient was admitted to St. Mark's Hospital March 12, 1912, in good general condition. He was kept quiet in bed for three days in order to secure as much repose and reserve force as possible. A 24-hour specimen of urine totaled 500 c.c. and showed acidity, purulent cloudiness, 1010 specific gravity, 2½ grains of urea to the ounce, a trace of albumin, normal indican, absence of sugar and bile, trace of blood and large quantity of pus. His temperature prior to the operation was practically always nearly a hundred, but without wide variations.

The patient felt in the best of condition, and pleaded earnestly for one operation to relieve kidney, ureter, and bladder. In yielding to this solicitation, I believe, that I erred. It would have been much better if we had disregarded everything but the surgical considerations and had attacked the main focus of his trouble first, namely, the kidney. The three steps of the operation were done at one sitting on March 24, beginning at 3.20 and ending at 5.23 P.M., including the preliminary preparation of the various fields one by one. My consulting assistant was Dr. Benjamin T. Tilton, for whose interest, help, and service in the matter I desire hereby to tender grateful acknowledgments.

The ureteral calculus was attacked first through an oblique incision parallel with Poupart's ligament, placed a little higher than the herniotomy incision, and extended longer than it, inward to the sheath of the rectus, and deepened rapidly by sharp dissection to the extraperitoneal fat. This was rapidly and deeply separated from the wall of the bladder, previously distended with boric acid water, and consigned to wide retraction upward. Following the wall of the bladder carefully on the inside and the pelvic wall on the outside, the wound was deepened until the seminal vesicle was encountered, lying against the bladder and above the prostate. The ampulla of the vas deferens was next felt for and recognized. The ureter, much thickened, was then easily found lying highest and between the two structures last named, crossing more or less distinctly the space bounded by the pelvic wall, and seminal vesicle on the outside, the distended bladder and ampulla on the inside and the extraperitoneal fat above. The calculus was found practically at the surface of the bladder, which necessitated separation of the ureter carefully from the bladder, and the passing of a silk temporary ligature about it as a retractor, placed, of course, between the stone and the kidney. With blunt-pointed scissors the ureter was divided longitudinally down to the stone and evacuated of it. Digital exploration showed no other stone present, after the blunt spoon had removed one or two small fragments chipped off with the scissors. No instrument was passed into the bladder from this point, in virtue of the patency found during catheterizations of the patient's ureters, and of the need to save time. The wound was sewn up with free drainage to the ureter, which was not stitched, and a copious dressing applied.

The patient was now turned over into the kidney position and that field prepared for invasion. The unavoidable delays of adjusting the patient, the renewing of sterile towels, cleansing the fields, and rearranging and renewing the instruments, were unfortunate in prolonging the anesthesia, but could not be avoided.

Through a vertical incision from rib to crest of ilium, placed over the outer border of the rectus spinæ, the kidney was rapidly reached and partially exposed. It was found so densely adherent at the upper pole and so much enlarged that two inches of the twelfth rib had to be resected subperiosteally. Thereafter, the kidney was slowly, gently, and rather easily dissected free and delivered. To our surprise, no large calculus corresponding with the shadow of the radiograph was found. The kidney was divided from end to end with very little hemorrhage. The lower pole was

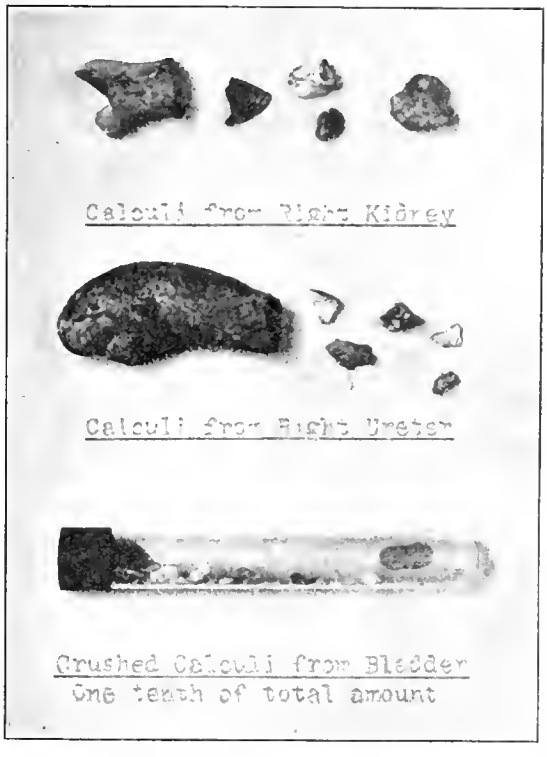


FIG. 3.—Photograph of card mounted with the calculi. Those from the bladder were approximately the same size of the largest two from the kidney in the top line. The bladder contents after the litholapaxy were passed through coarse gauze instead of through muslin by mistake of a nurse. Hence fully nine-tenths of these bladder specimens were lost.

shown to have an extensive, thick-walled abscess cavity corresponding with the radiographic shadow, and containing a small, friable stone. Slightly above this larger was a smaller abscess cavity with another stone of similar character. Fragments of these and other calculous foci were scooped up with the blunt spoon, and would have represented a perhaps gram in bulk. The fragments were lost, however, among the gauze and the towels through oversight. Although some of the irrigation fluid was passed through gauze, hardly any stone detritus was recovered in this manner. Various attempts were made to penetrate the ureter from above, but without avail. It was decided not to remove this kidney, on account of the variations in urea which the patient had showed, but to leave it in place freely drained, hoping that it might recover much of its function after the abscess walls had been trimmed away, drained, and healed. The

organ was replaced, freely drained, and the wound sutured.

As the patient seemed in reasonably good condition, it was decided to crush the stone in his bladder. This was done forthwith, with no trouble, and the bladder pumped clear with Chismore's evacuator. After irrigation of the bladder the patient was returned to bed, in very fair condition. During the early evening free stimulation was necessary, including an intravenous infusion of normal salt solution. After this and up to the expiration of the first twenty-four hours the patient was bright and cheerful, and gave promise of recovery. He passed a reasonable quantity of urine, had no definite hemorrhage from either wound, and seemed as comfortable as any patient could possibly be during the first twenty-four hours. Rather suddenly, and progressively, the patient's respiration began to go up and he complained of dyspnea. The writer was summoned, stimulation was augmented, and everything possible done for the patient. He died about thirty hours after the operation with symptoms of profound pulmonary embarrasment, but without hemoptysis. The house surgeon who saw him expire was of the opinion that pulmonary embolism was the immediate cause.

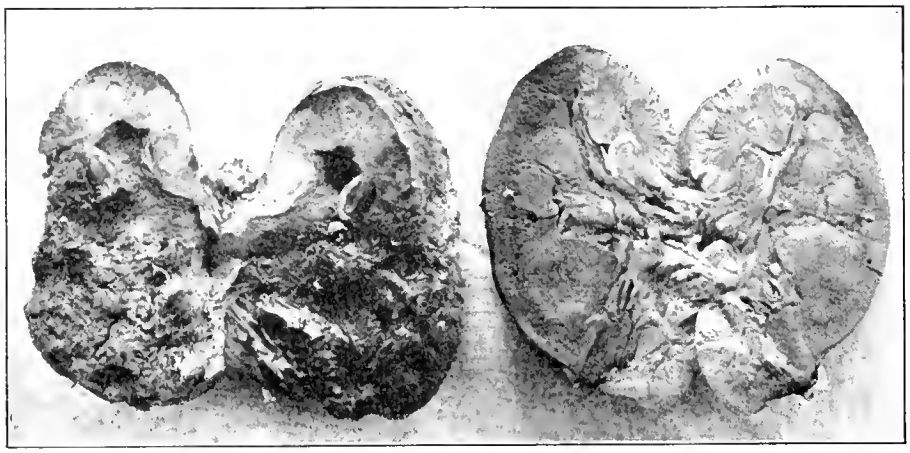


Fig. 4.—Right and left kidneys opened; front view. In the right kidney, the two major abscess cavities are distinctly seen, the larger involving much of the lower pole axially, laterally and anteroposteriorly, and the smaller abscess cavity situated above it. The radiographic shadows correspond more with the abscess walls than with the contained calculi. The pelvis of the kidney as a whole shows signs of chronic inflammation, the mucous membrane being rough and corrugated. The thickening of the pelvis wall is distinctly shown in the cut edge. The ureter appears to be patent. The left kidney is in passable condition and shows the usual changes in chronic diffuse nephritis.

It is unfortunate that this patient after so many examinations and operations should finally have perished. If one might draw any conclusions from the case, they would be as follows:

First, as a matter of record and of thoroughness of investigation in all urological cases, it is too bad that no radiography, no cystoscopy, and possibly ureteral catheterization was done when the patient was first seen with symptoms of stricture and prostatic enlargement. The character of the urine, however, at this time rather contraindicated such procedure. It is possible that he may have had the nuclei of renal calculi with only reflex symptoms and not standard subjective or objective signs.

Second, having reached a final diagnosis in the later periods of the man's disease, it would have been better had the operation been divided into at least two, possibly three, steps, in the order of their importance, kidney, ureter, and bladder, inasmuch as the kidney was the chief source of absorption and inasmuch as the ureteral calculus would very likely not have caused trouble after drainage of the kidney had been established be-

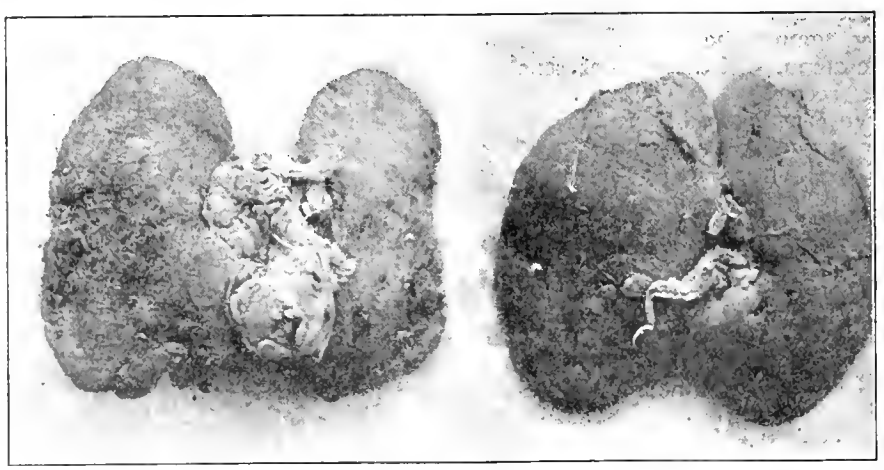


Fig. 5.—Right and left kidneys opened; rear view. The destruction of the kidney substance by the larger abscess is plainly seen over the lower pole. The enormous thickening of the inflammatory deposit around the pelvis and ureter is also clearly portrayed.

cause so deeply pocketed in the ureter behind the bladder. As to the origin of the man's later history and the course of his disease, might not the question be asked, is this not a case of ureteral deformity and obstruction secondary to the prostatectomy? It is known that in animals obstruc-

tion of the ureter invariably leads to infection and abscess of the kidney. Perhaps in this case the right ureter was sufficiently deformed to invite inflammation of the kidney, which in turn was followed by autoinfection with the *Bacillus coli* and calculus formation.

One of the regrets in this case is that we did not test the efficiency of his kidneys independently of instrumental invasion of his lower urinary tract. It would have been interesting to have given the man an injection of phenolsulphonepththalein, then to have observed the excretion in the mixed urines of the bladder. This total, when compared with the total excretion of the drug in the separated urines combined might have given a standard of judgment as to the degree of depression of kidney function secondary to instrumentation. It is at least reasonable to think that in some patients this variation may be wide and important, and act as a guide to the resistance of the urogenital tract to invasion or intervention. I am not aware that this practice is common, but it seems to me worthy of consideration.

FIG.—Microphotograph of kidney showing the lesions of a suppurative nephritis with connective-tissue proliferation

We already have in this case a comparison of the urea excretion during instrumental examination and independently of it. The charts show the differences. The low urea excretion was a good ground for refusing to do the operation in one sitting. Inasmuch as the patient died with pulmonary and not renal symptoms, this comment is of only passing interest, nevertheless the wishes of a patient to get through with it all quickly cannot possibly weigh against such a scientific indication, and I am sure that I will never again heed such solicitation from a patient.

On the other hand, however, the existence of chronic diffuse nephritis in the left kidney might indicate that both organs were ripe for infection without any definite exciting cause. This is known to be the fact not infrequently.

No matter what may be the ultimately correct viewpoint, which after all is only a matter of opinion, the case is sufficiently individualized perhaps to deserve publication.

Pathological report of the New York Hospital reads: Suppurative nephritis. Received August 16, 1912. Reported by Dr. Tytler, August 21, 1912. Dr. Michailovsky. Kidney everywhere shows yellowish white, cheesy areas of all sizes, alternating with, or in places surrounded by, areas of intense congestion. Microscopic sections show the appearance of a suppurative nephritis, with considerable diffuse connective tissue proliferation. Sections attained for tubercle bacilli negative.

Pathological report of St. Mark's Hospital reads: October 7, 1912. Section removed from left kidney. Diagnosis: Chronic diffuse nephritis. Glomeruli: Swollen, endothelium proliferated. Capsule somewhat thickened. Tubules: In some parts dilated with lining cells degenerated. In other parts, swelling of the tubular epithelium. Interstitial connective tissue is only slightly increased, except where there are patches marked increase. Vessels are congested. (Signed) F. Shostac.

45 WEST NINTH STREET. K

THE PRODUCTION OF MALIGNANT TUMORS FROM THE PARASITES OF THE EARTHWORM

BY H. D. WALKER, M.D.,

BUFFALO, N. Y.

THE search for the origin and cause of malignant disease has occupied the attention of the medical profession for many years and I believe it is the duty of every one to contribute anything he may discover which will help solve this problem. I have devoted all my time for the past eleven years to this subject and fully believe I have found the origin and cause of the disease, the manner of its production, and the methods by which it may be prevented. I have produced many tumors in animals by feeding or injecting them with the parasites from the earthworm. That these tumors were malignant there can be no doubt for they killed the animals, and some of these tumors were pronounced malignant by competent pathologists. In a paper read before the Buffalo Academy of Medicine, November 17, 1908, I gave the experiments in full and their results. This was afterwards published and distributed to the profession. Since that time I have succeeded in growing tumors from these parasites upon grass in sealed glass cells containing distilled water the parasites from *Lumbricus herculeus* and small pieces of grass. These tumors are composed entirely of the cells of the parasites and I believe them to be sarcoma, for when they are introduced into animals the tumors

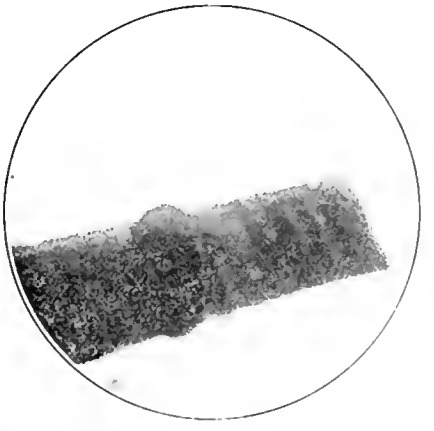


FIG. 1.—Tumor No. 1; Organisms from *Lumbricus Herculeus* enclosed in cell with distilled water and a small piece of grass; taken after being in cell six years. X25.

they produce in them have been pronounced sarcoma. Photographs are here given of two of these tumors in different slides. They are enlarged 25 diameters. The experiments for the production of tumors in animals are simple and easily repeated and I am sure they would be confirmed by others if taken up and then the methods of prevention I have pointed out for the destruction of earthworms could be adopted and many thousands of lives saved each year.

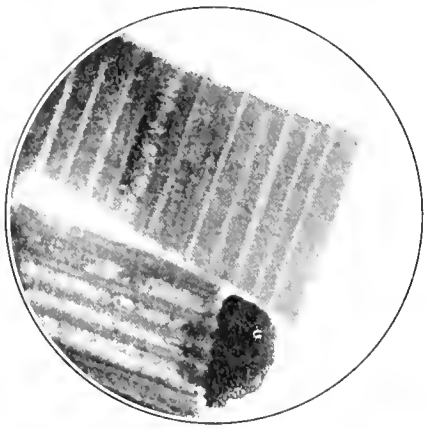


FIG. 2.—Tumor No. 2: Organisms from *Lumbricus Herculeus* enclosed in cell with distilled water and small pieces of grass; taken after being in cell six years. X25.

No earthworms, no cancer; plenty of earthworms plenty of cancer. In my pamphlet I have investigated this proposition and believe it to be true. If so, it is positive proof that my work is correct. The parasites from the earthworm are left upon cabbage, celery, lettuce, etc., by the earthworm when feeding upon them. They pass out through the orifices in their skin, and find their way into the leaves through the stomata. These parasites are shown in a cabbage leaf in one of the illustrations. Recent experiments by Dr. Peyton Rons on experimental sarcomatous tumors of a fowl have appeared in which, after the tumors were ground up with sand and centrifugalized, and then the supernatant fluid again centrifugalized and the upper part of the fluid injected, tumors were produced. When the liquid was passed through a coarse filter, Berkfeld No. 2, tumors were also produced, but none when it was passed through Berkfeld No. 5 medium. These filtrates were said by Rons to be cell-free.

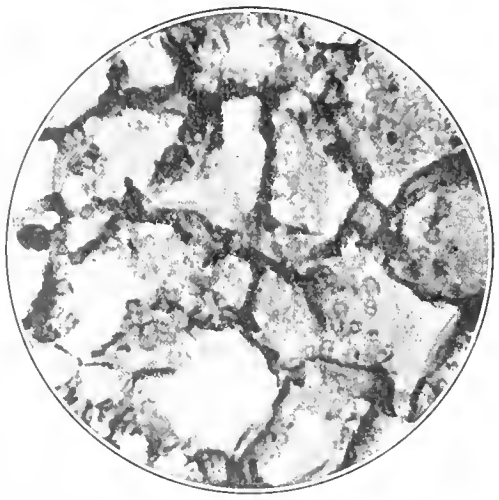


FIG. 3.—Cabbage leaf infected by *A. fœtida* fifty days. Sections from leaf stained with polychrome methylene blue and photograph taken showing parasites. X500.

In order to see if the cancer organisms from the earthworm would respond to any tests similar to the above I cut up an earthworm, *Allolobophora fœtida*, in a little water and placed the whole on firm filter paper in a funnel and on examining the filtrate under the microscope found an abundance of the cancer organisms in the ameboid form. Many of these were very small and on the surface of the filtrate. These organisms were exactly like those found in the blood of my experimental animals and in man and show that they correspond in this manner with the action of the organisms with what is acknowledged to be malignant tumors in animals. Now the ameba-like form I have described seems to have the faculty of passing through good filter paper, I presume on account of its not being a solid body its ameba form being of a liquid nature. I would again urge the cancer laboratories to repeat my experiments on animals as detailed in my pamphlet.

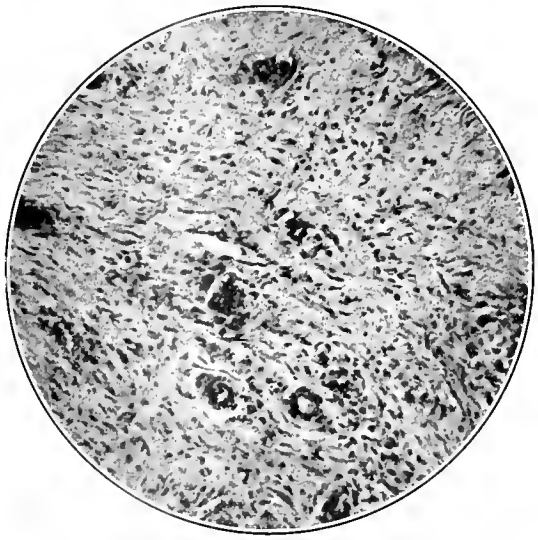


FIG. 4.—Section from tumor of peritoneum Hare 11. Carcinoma Stain H. and E. X200.

143 ELMWOOD AVENUE.

CERVICAL ADENITIS IN CHILDREN.

BY ROYALE HAMILTON FOWLER, M.D.,

BROOKLYN, NEW YORK.

CERVICAL adenitis in children is a common disease and is especially prevalent among the children of the poorer classes who live amid unhygienic surroundings. Pathological investigation of a form of adenopathy has revealed the fact that many of these hyperplasias are due to the tubercle bacillus. A large proportion of school children between the ages of four and ten years present cervical enlargement of the cervical lymphatic glands. It follows almost all the exanthems of childhood and may be due to a variety of lesions other than that due to tuberculosis. Lesions of the scalp (eczema and pediculosis), of the throat (tonsillitis), nasopharynx (adenoids), and of the teeth and the ear (otitis), are responsible for a large number of cases. It is frequently impossible, however, to trace the source of the infection. The difficulty of early clinical diagnosis is at once apparent in cases of glandular tuberculosis when we realize that the pathologist must frequently examine section after section under the microscope before he can satisfactorily determine the cause of the hyperplasia. Of the tuberculin tests the writer has found the von

Pirquet to be most delicate and reliable in children. There is no early diagnostic criterion for tuberculous adenitis. In the case of chronic adenitis without demonstrable cause tuberculosis should be suspected and appropriate treatment advised.

There are six important groups of glands in the neck: (1) Afferent vessels of the suboccipital group drain the occipital region. (2) The mastoid group drains the temporal region and the ear. (3) The parotid group drains the anterior scalp, the ear, the root of the nose, the nasal fossa and the pharynx. (4) The submaxillary group drains the upper and lower lips, the cheek, the nose, the side of the tongue, and the gums. (5) The submental group drains the lower lip, the tip of the tongue and the floor of the mouth. (6) The retropharyngeal group drains the nasopharynx. Each of these groups sends efferent vessels to the deep descending chain. The deep descending chain from the surgical standpoint may be considered as one group. These glands lie anterior and posterior to the internal jugular vein. In the upper part of the neck they lie almost entirely beneath the sternomastoid muscle, in the lower part at the posterior border of that muscle. This chain extends from the mastoid process to the junction of the internal jugular and subclavian veins. The deep chain also receives drainage directly from the scalp, tongue, palate, esophagus and thyroid gland. Efferent vessels from the deep chain form the jugular trunks. The right passes into the internal jugular vein or into the subclavian; the left into the thoracic duct. There is no direct connection between the cervical lymphatics and the lymphatic system of the thorax. Direct extension is therefore impossible. Infection affecting the cervical lymphatics is entirely local until it passes into the general circulation.

The tonsil is the most frequently accepted site of entrance of the tubercle bacillus. Tuberculosis of the tonsil, however, is rarely demonstrated to be associated with tuberculosis lesions of the cervical lymphatics. In a study of 1000 cases of tuberculous cervical adenitis, tuberculosis of the tonsil has been demonstrated in less than 2½ per cent. There is experimental evidence to show that cultures of the tubercle bacillus which have been swabbed over the tonsil leave no trace of the infection at the sight of innoculation, but invade the lymphatic glands of the neck which drain the tonsil. In a series of twenty-one experiments the cheesy material expressed from tonsils was injected into guinea pigs. Fourteen pigs developed tuberculosis.

As regards tuberculous adenitis in children there are certain well defined differences which occur. The disease is rare in children under two years of age. Dowd has collected 465 cases operated upon by himself and his associates at Roosevelt and St. Mary's Hospitals, of which about three and one-third per cent occurred in children under two years of age. This is in accord with Fischer's tabulation of 1484 cases reported by nineteen different observers in which he shows that three and nine-tenths per cent occurred in children under five years of age. When it does occur less resistance is shown toward the infection than in older children. Involvement is often extensive and the disease bilateral in about one-third of the cases. Incomplete operations are usually performed, which leave sinuses and ulcers which predispose to secondary infection. Complications frequently result. Bronchitis and bronchopneumonia are common and are often believed to be of tuberculous origin. Enlarged tonsils, retropharyngeal abscess and adenoids are not infrequently observed. Lupus, tuberculous meningitis and generalized tuberculosis have been frequently noted. This class presents a clinical picture which is fairly regular in its course. The upper nodes break down and discharge their caseous material through the ruptured capsule before the lower are extensively invaded. These children are brought for treatment on account of a lump in the neck. Forty-six per cent of Fischer's and eighty per cent of Dowd's have come to the surgeon between the ages of two and seventeen. The swelling is usually a cold abscess which points either in front or behind the sternomastoid muscle. The disease is more strictly localized in children and tends toward spontaneous limitation.

In regard to the treatment of non-tuberculous adenitis efforts should be made to cure or ameliorate the foci of infection which represent the causative lesions in the process. If the source cannot be demonstrated the case should be treated as one of tuberculosis. A large proportion of children will recover if placed in a suitable environment under medical care. This treatment should afford a maximum amount of sunshine and fresh air, a sufficient supply of good food. Of the tonics, the syrup of the iodide of iron and cod liver oil are the best. In suitable cases tuberculin is indicated. If the glands have broken down one can expect good results from this method of treatment. Three months of the treatment above outlined should prove the merits or demerits of medical attention. If in the course of this treatment the glands break down the abscess should be opened and drained. Care should be exercised in making the incision to avoid important structures. Dangers are hemorrhage and paralysis of muscles supplied by the spinal accessory and seventh nerves. Poulticing to encourage suppuration is to be condemned, the ice bag relieves pain and tends to discourage suppuration. The surgical treatment of choice for markedly enlarged glands occurring in children over five years of age in the absence of suppuration, which resist medical treatment for three months, is excision with removal of the gland bearing fascia. Breaking down of the glands to the extent of caseation is not necessarily a contraindication to excision. The radical operation in very young children is one which should be approached with caution, reverence and respect. It is not possible to remove all the glands in the neck nor is it necessary. Removal of those which are grossly diseased will place the patient in a condition to better combat the slight infection which may remain or which has not been attacked surgically upon the opposite side of the neck. The radical operation should be preceded by the removal of the tonsils and adenoids when these structures are enlarged. This diminishes the risk of adenectomy and removes the atrium of infection. The institution of general hygienic measures is as important after the operation as before this procedure. In selected cases tuberculin may be employed in the after care with good results.

Washington Court,
475 Washington Avenue.

Diuretic Action of Infusion of Convallaria.—G. Mouriguand and G. Dujal call attention to the marked superiority as a cardiac stimulant of the infusion of convallaria flowers over the watery extract which is generally employed. On account of the rapidity of the diuretic action of convallaria one may properly combine the administration of this drug with that of digitalis, whose action is slower but less ephemeral.—*Le Progrés Médical.*

ARTIFICIAL VAGINA BY INTESTINAL TRANSPLANTATION.

By J. F. BALDWIN, A.M., M.D.,

COLUMBUS, OHIO.

SURGEON TO GRANT HOSPITAL.

THE operation which I devised nearly ten years ago (*Annals of Surgery*, September, 1904) for the plastic formation of a vagina by transplanting a piece of intestine, has now been performed by a considerable number of surgeons scattered throughout the world. Though I have not kept an accurate account of the reports, I feel safe in saying that at least twenty-five or thirty of these operations have been made, and thus far, according to the reports, without mortality or serious morbidity, but with most satisfactory functional results. In my own work I have made six of these operations, but the last case was in some of its features so unusual as to merit publication.

Mrs. H., aged 27; referred to me by Dr. George W. Crile of Cleveland. Patient had been married twice. She lived with her first husband at intervals for four years, then after three years obtained a divorce and had remarried about two months before I saw her. This husband had left her after one month. At the age of 16 years she had been operated upon by Dr. Crile, who removed her ovaries for the relief of certain symptoms connected with the menstrual molimen. Later she was operated upon by a Toledo surgeon twice for the purpose of making an artificial vagina. At the first operation, as nearly as she could tell me, he had evidently separated the connective tissue between the bladder and the rectum and had trusted to packing to secure the canal. This operation failed and he had later reopened and then tried to pass in some strips of skin for lining. This operation was also a complete failure, and when she was referred to me there was no trace of a vagina whatever, but a few scars could be made out which were the remains doubtless of the attempts at flap formation.

Personal examination showed an unusually plump young woman, apparently in perfect health. The external genitals were normal, breasts well developed. A very satisfactory scar in the median line, but no trace of a vagina.

I operated September 6 in the presence of a number of visiting physicians. As the first step in the operation an opening was made after the usual manner between the bladder and rectum, this being made through a transverse incision in the perineum. The operation for the first two inches was exceedingly difficult, as the dissection had to be made in scar tissue. Above this point healthy tissue was reached, and further dissection was entirely simple. The peritoneum having been reached a large clamp was placed in the vagina and held there by packing in gauze around it.. The patient was then placed in the Trendelenburg position and the abdomen was opened through the old scar. I then encountered what I had not at all anticipated, namely, a pelvis filled with small bowel held by the firmest possible adhesions. Whether these adhesions had resulted from post-operative inflammation after her former operation, or had been the result of appendicitis, could not be determined. The appendix was present, embedded in very firm adhesions and badly diseased, though not presenting any recent infection. With the utmost difficulty the loops of bowels were separated, using gauze sponges and scissors. In this way the bowel was finally released and the appendix removed. A piece of the small bowel about fourteen inches long, a little above the lower end of the ileum, was brought up, cut across, and the ends inverted with purse-string suture. Care had been taken not to interfere with the mesentery of this piece of bowel. The continuity of the rest of the bowel was re-established by closing the ends with purse-string suture, and making a lateral anastomosis. An assistant then pushed the vaginal clamp upward, so that the peritoneum was readily incised as the jaws of the clamp were opened. The center of the detached loop of bowel was then caught with the clamp, and the bowel drawn down into the vaginal canal, leaving the two ends flush with the floor of the pelvis. The toilet of the pelvis was completed by bringing the peritoneum nicely together. The bowel had been drawn into place without undue tension on its mesentery. The abdomen was closed in layers as usual. The patient was then placed in the lithotomy position, as at first, the portion of the bowel which had been held by the clamp was opened and each side wiped out and then packed with iodoform gauze, so as to completely fill the vaginal space. The opening in the bowel was then attached by chromicised catgut to the margins of the perineal opening, which thus became the vulvar outlet. A little wisp of gauze had been introduced posteriorly to take care of any oozing which might take place from the vaginal space.

The patient made a very smooth convalescence. The gauze which had been packed in the two loops of bowel was withdrawn after a few days and replaced from time to time as necessary, and everything cared for as after an ordinary perineorrhaphy. After the lapse of three weeks a clamp was placed upon the septum between the two loops, and this was cut through by crushing, thus leaving but a single vaginal opening. The patient returned to her home in four weeks. Under date of October 8, 1912, Dr. Crile sent me the following communication: "I have just examined your patient and write to congratulate you on the beautiful work you have done. I really would have hardly believed that that particular plastic work could be so thoroughly accomplished."

While the operation outlined above was in this particular instance, owing to the thick abdominal walls, the scar tissue in the perineum, and the pelvic adhesions, unusually difficult, the procedure, when made under what might be called normal conditions, is one that is not difficult in the hands of surgeons accustomed to intestinal work. It is evident, however, that it is an operation, as I have always insisted, that should not be made by a tyro. I can hardly conceive, however, of a case in which the operation would be more difficult than in this instance. I know of no other method by which anything like as satisfactory a substitute can be secured in cases in which, from congenital defect or sloughing (as in my first case), there is entire absence of the vaginal canal.

Pneumococcus Peritonitis.—Lenormant and Pison report a case of primary pneumococcus septicemia, in which peritonitis was only an episode. The majority of cases of pneumococcus peritonitis are clinically primary, and most of those that are secondary result from a primary pleuropulmonary focus, the infection traveling directly through the diaphragm. There are, however, cases in which the peritonitis is an incident in a general pneumococcus septicemia.—*Le Progrès Medical.*

MEDICAL RECORD.

A Weekly Journal of Medicine and Surgery.

THOMAS L. STEDMAN, A.M., M.D., EDITOR.

PUBLISHERS

WM. WOOD & CO., 51 FIFTH AVENUE.

See fourth page following reading matter for Rates of Subscription and Information for Contributors and Subscribers.

New York, December 28, 1912.

THE LIFE CYCLE OF THE TREPONEMA PALLIDUM?

THE recent triumphs of chemotherapy were in part the result of an intensive study of the pathogenic protozoa, and at the same time served to stimulate the investigation of this remarkable group of microorganisms. The success attained by Noguchi in cultivating the *Treponema pallidum* in a pure state, was shortly afterward followed by the announcement that Bass of New Orleans had accomplished the same result with the malarial plasmodium. A new era of discovery is dawning. Science is not content with the mere recognition of the morbid agent and of its association with the disease process, but would ferret out the offending germ in every stage of its development. Possibly the life history of the *Treponema pallidum*, the most notorious of the fell parasites of the human race, is now about to stand revealed.

A preliminary announcement of an observation of the life cycle of the organism of syphilis was made by J. E. R. McDonagh in the *Lancet*, October 12, 1912. In a paper read before the Pathological Society of London, December 3, 1912, the same observer described what he regarded as the complete life history of the *Treponema pallidum*. This he believed was a sporozoite, which developed in connective tissue cells, into immature male, female, and asexual bodies. The male gametocyte, after leaving a connective tissue cell, entered a large mononuclear lymphocyte, where it developed into three pear-shaped bodies, which then became transformed into a coil from which treponemata evolved. The female gametocyte remained extracellular and was a clear body containing a chromatic network at its upper pole, and one or two blepharoplasts at its lower pole. These disappeared when the cell reached the size of a red blood corpuscle. In the process of fertilization the female extruded two polar bodies, and was entered by one treponema which fused with the chromatin network of the female cell. This network became deeply stained, and the cell constituted a zygote. The deeply stained masses divided into sporoblasts which developed into a big spore-cyst or escaped with the formation of small spore-cysts. Upon the bursting of the spore-cysts the sporozoites were liberated. Female cells could also divide by parthenogenesis. The asexual body by a process of subdivision developed into a spore-cyst in the connective cell, and became extracellular only when the host-cell had degenerated.

The above observations of McDonagh are in part confirmed by E. H. Ross, who pursued his investigations along independent lines, and whose results are published in the *British Medical Journal*, December 14, 1912, under the caption, "An Intracellular Parasite Developing into Spirochetes." These and similar studies were rendered possible by the use of a new method of preparing the specimens obtained from syphilitic lesions. This, known as the "jelly method," was devised by H. C. Ross, and consists in the use of a solution of agar, with the addition of appropriate amounts of polychrome methylene blue, sodium citrate, sodium chloride, sodium bicarbonate, and atropine sulphate. The specimen to be examined is spread upon the surface of a drop of the jelly placed upon a slide. A drop of blood obtained from a chancre, and spread between the cover-glass and the jelly in a thin film, reveals under the microscope the characteristic parasites. These appear as copper-colored bodies, either free or included within the larger mononuclear cells. They resemble the peculiar cell inclusions known as Kurloff's bodies which are found in the mononuclear leucocytes of the blood of guinea-pigs. These cell inclusions have been proved to be parasites and have been given the name *Lymphocytozoon cobayæ*. By means of the jelly method it has been shown that the chromatin within the inclusion becomes formed into spirochete-like bodies, which upon the bursting of the inclusion swim freely in the blood. These parasites have been found in gumma-like tumors in the liver and spleen of the guinea-pig. Similar cell inclusions have been found in the fixed mononuclear cells of the seminal vesicles of earthworms.

The intracellular and extracellular parasites have been found by Ross in the various lesions in 143 cases of primary and secondary syphilis. The intracellular forms are found, multiple or single, embedded within the cytoplasm of the large mononuclear cells, and contain from one to as many as twelve chromatin masses. These are either round or pear-shaped and resemble the extracellular forms; indeed they are supposed to be the precursors of the latter. In some instances, the chromatin masses give rise to curled and twisted spirochete-like tails which are extruded upon the bursting of the inclusions.

Ross points out the homologies that have been observed between the parasites of human syphilis and the intracellular parasites of guinea-pigs and earthworms, and suggests that the spirochetes are really microgametes or male elements and that the round or pear-shaped bodies are macrogametes or female elements. He also advances the working hypothesis that the guinea-pig or rabbit parasites might produce in man a mild infection which would modify syphilis in the same manner as vaccination has modified smallpox.

In the same number of the *British Medical Journal* E. Jennings and S. R. Moolgavkar, working independently, report their observations in con-

firmation of those recorded by Ross. Jennings notes that the central part of the inclusions of the epithelial cells of chancres contains a bunch of treponemata which radiate from a central stained mass like the spokes of a wheel. This observer alludes to the simplicity of the jelly method, and advocates the examination for the so-called parasites as a routine means of diagnosis in syphilis. The parasites are found in the peripheral blood, but here they are not as abundant as in the various lesions of syphilis.

The investigations conducted by Noguchi, McDonagh, Ross, and others have resulted in substantial contributions to the knowledge of the pathogenic agent of syphilis. This knowledge is, however, as yet far from complete. The observations regarding the supposed life cycle of this organism must at any rate receive confirmation from trained protozoologists before they can be fully accepted by the scientific world.

THE QUESTION OF VENTILATION.

It is both curious and decidedly disturbing to the amour propre of the scientific man that many questions which were thought to be definitely settled have been brought once more into the arena of discussion. Up to a recent period authorities on ventilation seemed to be practically agreed that impure air was a potent factor in the causation of those ill effects which followed a prolonged stay in crowded rooms or buildings. An ill-ventilated room, for example, was regarded as a room in which the air was chemically impure, that is expired air which contained too much carbon dioxide and was deficient in oxygen. The theory was that in a crowded room the people therein consumed the oxygen and expired air containing carbon dioxide until in the course of time the atmosphere became surcharged with the latter and therefore chemically impure and hurtful to health. It is true that in a crowded room the air does become to some extent chemically impure, but the contention is now made that this has little or no injurious effect upon the health.

Mr. Leonard E. Hill of London has been the most prominent exponent of these somewhat iconoclastic views on ventilation, and it may be said that behind him he has the opinions formed as the result of the experiments of Flügge and others in Germany, of Haldane in England, and of a considerable number of investigators in this country. At the meeting of the British Association in 1911 Hill read a paper in which he propounded his views, or rather the views of this most modern school. In this paper he insisted that the dangers of ill-ventilated places arise from two causes, namely, (1) Infection by pathogenic bacteria, the mass influence of which is enormously increased in confined crowded places; (2) temperature, relative moisture, uniformity, and stillness—qualities of the air which profoundly influence the metabolism and health, and the immunity of the body, that is, the power of the body to resist the invasion of pathogenic bacteria. Hill maintains that so far as carbon dioxide and oxygen are concerned the chemical impurity of the air is a negligible quantity, even when there is a considerable variation in the percentage of these gases. According to physiological evidence, excess of carbon dioxide in the atmosphere cannot enter the body because the respiration is automatically regulated so as to keep the concentration of carbon dioxide in the lungs constant. The most ill-ventilated room never shows an analysis as much as 1 per cent. carbon dioxide, while in famous mountain health resorts there is a far greater deficiency of oxygen than ever occurs in the most ill-ventilated room.

Hill's conclusions are that the question of ventilation is primarily one of keeping the temperature, relative moisture, and movement of the air in a proper state so that the heat-regulating mechanism of the body works without strain, and the nervous system is stimulated by pleasant cutaneous conditions, and the circulation, respiration, and metabolism of the body are invigorated.

Dr. Simon Baruch, in a letter to the Medical Record, November 16, 1912, after referring to the views on the subject of Brannan, Yandell, Henderson, Hill, and Flügge with apparent approbation, goes on to point out that the condition of the skin exerts a potent influence upon the lungs, which may be in part a vasomotor reflex acting upon the pulmonary circulation.

Baruch concludes that the evidence available, although still far from complete, suggests that these pulmonary activities are indirectly, but powerfully, influenced through conditions affecting the skin, and that it is in this manner that ventilation influences both. As yet, however, all authorities do not agree with Hill and others that from the standpoint of health, chemical impurity of air counts for little or nothing, but argue that a vitiated air must contain certain substances which are harmful, even though not demonstrated by science. Naturally the point is of the first importance, for if Flügge and Hill are right the methods of ventilation employed during some years and now mainly in use are for the most part wrong. In fact, the most elaborate methods of ventilation have generally failed, and many if not most physicians of the present day advocate a return to the old-fashioned way of ventilating by means of the open window as the only effective one.

Chronic Infectious Polyarthritis.

This disease, commonly known as Still's disease, was described by Dr. G. F. Still of London in 1897. It is a rare disease and its etiology is obscure. In the *American Practitioner* for November Joseph Collins gives an account of an apparently typical case of this malady. By some writers the rôle played by the nervous system in its causation has been accorded an important place, but Collins thinks that this view is wholly unjustified. The most striking features of the case which he described were: (1) The stunted growth of the child's body; his entire length as he lay in bed seemed to be about 32 inches. (2) The fusiform enlargement of the joints, which appeared more enlarged and deformed than they really were because of the contrast with the profound wasting of the muscles. (3) The enormous enlargement of the liver and spleen. (4) The extreme dryness of the skin and diffuse alopecia. (5) The generalized adenoplasia. (6) The striking changes in the blood—marked

leucocytosis, eosinophilia, and evidence of conspicuous degeneration in the red cells. (7) The evidence in the urine of an amyloid degeneration of the kidneys. A consideration of the above condition leads Collins to the opinion that the case was one of some generalized form of infection. Such adenoplasia and such amyloid degeneration occur usually as the result of chronic infection, for instance, protracted tuberculosis. All features of the condition point to some long continued poisonous process, such as a low-grade septic infection. The acute stage of Still's disease as regards the joints resembles gonorrheal arthritis. Finally the unquestionable recoveries that have been recorded have fully convinced Collins that it is an infectious process, but whether specific or not yet remains to be determined.

Recent Views of Diphtheria Therapy.

A paper, read by Eckert on the present status of diphtheria therapy, an abstract of which has appeared in the Medical Record, called forth at the time an interesting discussion (*Deutsche medizinische Wochenschrift*, November 21). W. Braun, who sees numerous patients in the Frederickshain Hospital, many of whom are desperately ill when admitted, announced that increasing the dose of antitoxin beyond a certain point does not further lower the mortality, which, during the recent epidemic, was about 18 per cent. On the other hand, the results of immunization of those who had been or were to be exposed were brilliant. Of nearly 500 so immunized, but 5 developed the disease, and that in a very mild form. Of the small number in which immunization was refused 14 developed the disease with 3 deaths. Jochmann related his experience at the Rudolf Virchow Hospital, where he has treated 600 cases during the past year. Large doses of antitoxin he believes to exert a favorable influence over the toxic complications and sequelæ. He warmly recommends follow-up injections to prevent and cure postdiphtheritic paralyses. While some anaphylaxis is to be expected, he saw no serious results from the same. Curiously the only case in which severe shock was present occurred after a first injection. The source of the sensitization is not stated. He is certain that serum has no power over postdiphtheritic heart failure, nor are any drugs able to raise permanently the low blood tension.

News of the Week.

New Medical Society.—The American Society of Medical Economics was incorporated recently at Albany, N. Y., its aims being in brief as follows: To study all matters of medical economics. To maintain a high standard of medical education and of professional conduct. To consider and perform the duty of the profession to the public in making use of all proper means to expose all forms of quackery. To aid the constituted authorities in the enforcement of all medical laws. To secure legislation for the suspension or revocation of the license to practise medicine for causes such as insanity or professional misconduct. To cooperate with other societies with the object of establishing certified pharmacies where prescriptions may be filled with pure and standard drugs as ordered. To oppose all acts tending to encroach upon the practice of medicine, such as legislative enactments establishing pseudo-specialists in medicine, and the extension of the work of the Board of Health along the line of clinics and curative medicine. To organize and carry on a campaign against the abuse of medical charity. To aid all licensed physicians requiring postgraduate instruction to obtain it in the charity hospitals and dispensaries of the State. Dr. E. Eliot Harris of New York, chairman of the committee on legislation of the County Medical Society, has been elected president of the new society, and its five vice-presidents are Dr. Algernon T. Bristow, Dr. W. F. Campbell, Dr. Smith Ely Jelliffe, Dr. T. K. Tuthill, and Dr. T. F. Rally. The secretary is Dr. S. Dana Hubbard and the treasurer, Dr. Royal S. Copeland. The society will establish branches throughout the United States and in other American countries, and a board of seventeen directors has been named to advance the work in hand.

The Medical Profession and Lloyd George.—The British Medical Association on Saturday last refused to accept the modified terms offered by Lloyd George for medical attendance under the Insurance Act. The meeting of the delegates lasted all day and the final determination to reject the terms of the Chancellor was carried by a vote of 150 to 21. This action has raised a storm of abuse of the medical profession by the liberal papers, and the Government threatens to establish a state medical service.

The Children's Bureau.—An investigation into the causes of infant mortality will be the first subject to be taken up by the recently created Children's Bureau of the Department of Commerce and Labor, and will be begun by the first of the year. It will include a house-to-house inquiry as to the conditions surrounding the child, and will be based upon birth rather than death records. The Children's Bureau aims to reduce infant mortality in the United States by one-half.

Immunization against Typhoid.—Believing that immunization against typhoid fever has now passed beyond the experimental stage and become established as a prophylactic measure of proved efficiency, the Department of Health of New York City will be prepared after January 1, 1913, to make without charge preventive inoculations, under conditions similar to those governing the free administration of diphtheria antitoxin. On the request of the attending physician inoculations will be made at the homes of the applicants, or at the central office, or cultures will be furnished free to physicians for their own use. On the occurrence of a case of typhoid fever, free immunization will be offered to every member of the family of the patient and to those who have been in contact with him, and it is hoped that widespread immunization will materially reduce the incidence of the disease in the city. Requests for inoculation may be made either by telephone or by letter to the Division of Communicable Diseases of the Department of Health.

Porto Rico Plague-Free.—The United States Public Health Service reports that Porto Rico may now be considered as entirely free from plague. The last case of the disease in man was reported in San Juan on September 12 and the last plague-infected rat was found at Arecibo on October 30.

Study of Alcohol and Narcotics.—The Forty-second annual meeting of the American Society for the Study of Alcohol and Other Narcotics was held in Washington on December 10 and 11, 1912. Dr. Lewis D. Mason of Brooklyn, president of the so-

ciety, in his opening address reviewed the results of the study of alcohol in its relation to medicine, and this was followed by a long and interesting series of papers covering almost all phases of the sociological, pathological, and psychological effects of indulgence in alcohol and narcotic drugs upon the animal organism. The annual address was delivered by Dr. Henry O. Marcy of Boston, who took for his subject: "Dr. Benjamin Rush, the pioneer investigator of the effects of alcohol and tobacco on man." This society, organized in 1870, was the first association in the world to take up from a scientific viewpoint the study of alcohol and the diseases which follow its use.

Birth Statistics.—Health Commissioner Lederle of New York City has recently called attention to lapses in reporting births in the city. He states that during the year just ending the returns of births made by physicians and midwives have run considerably below the figures of the previous year, this decrease being due, in all probability, to a failure to comply with the law requiring the filing of birth certificates within ten days after the event. During the year 1911 fines for this offense were imposed on 312 physicians and midwives. The law confers upon the Commissioner the power to excuse such neglect of duty, and he has decided this year to excuse all derelictions in this respect on condition that all returns of births not already reported be sent to the Assistant Registrar before January 1, 1913. He further declares his intention of prosecuting on and after January 1 every violation of the regulations covering the reporting of births, and he hopes to secure the cooperation of all physicians and midwives in obtaining full returns for these important statistics.

Diphtheria in Brooklyn.—Reports from the Borough of Brooklyn, New York, show a marked increase in the number of cases of diphtheria, 350 having been reported between December 1 and 20, with 30 deaths.

Opening for Medical Missionary.—The Good Samaritan Hospital of Guanajuato, Mexico, a missionary hospital supported by the Methodist Episcopal Church, desires to obtain a physician to serve as interne in the hospital for two years. Communications on the subject may be addressed to the director, Dr. Levi B. Salmans, Good Samaritan Hospital, Guanajuato, Mexico.

Venereal Diseases.—The Commissioner of Health of New York City has issued a circular letter to all the physicians in the city requesting a prompt report of all cases of venereal diseases coming under their observation. Since May 1, 1912, the superintendents of all public institutions have been required by law to report such cases and it is desired to obtain the same information with regard to private patients, the name of the patient, of course, being withheld by the physician. The Department of Health is also prepared to assist in the diagnosis of these diseases by making Wassermann tests and bacteriological examinations of discharges free of charge.

Infant Deaths.—During the week ending December 14 there were in New York City only 175 deaths of infants under one year of age, a decrease of 85 as compared with the number for the same week of last year. This is the lowest mortality record for any week of 1912.

New Preparatory Course.—For the convenience of high school students finishing their work in January of any year, who desire to enter the University and Bellevue Hospital Medical College, the New York University announces a special one-year collegiate course, which will begin on February 3 and continue until September 19. Students completing the course will be prepared to meet the entrance requirements of the medical school which now include one year of college work. Fuller details as to the course may be obtained from the secretary, University and Bellevue Hospital Medical College, New York.

Smallpox on Liner.—The steamship *Eugenia* which arrived in New York recently from Trieste, was detained at quarantine because of a case of smallpox which was found among the steerage passengers.

Poisonous Matches to Go.—On January 1 the new law governing the sale of matches in New York goes into effect, and the Diamond Match Company has announced that on that date it will be prepared to comply with the regulations, and that prior to July 1, when the Federal non-poisonous match law becomes operative, it will stop the making of poisonous matches in its factories. The new laws are intended to prevent the use of white phosphorus, which has proved so injurious to the workers in the factories, as well as dangerous to the users of the matches.

Cartwright Lectures.—Announcement is made of the acceptance by Prof. Ludwig Aschoff of the University of Freiberg, Germany, of an invitation to deliver the Cartwright Lectures of the Association of the Alumni of the College of Physicians and Surgeons at some time between March 15 and 20, 1913, the exact date and the subject of the lectures to be announced later.

Smallpox in Immigrant.—Suffering from a severe case of smallpox, a young Austrian woman who had arrived in America ten days before, was removed to the Isolation Hospital at Passaic, N. J., on December 21. The patient was a steerage passenger on the Hamburg-American line, and, it is said, had never been vaccinated.

Genito-Urinary Section of the Academy.—The following officers were elected at the December meeting of this Section of the New York Academy of Medicine: *Chairman*, Walter Brooks Brouner; *Secretary*, Joseph Francis McCarthy.

Personals.—President Taft has decided, it is said, to send to the Senate the name of Brig.-General George H. Torney for reappointment as Surgeon-General of the United States Army.

Surgeon W. Page McIntosh of the United States Marine Hospital Service, who has been in charge of the Marine Hospital at Baltimore for the last four years, has been ordered to Louisville to take control of the hospital there.

Surgeon B. S. Warren of the United States Public Health Service has been sent to West Virginia to investigate the prevalence of smallpox there. He has been instructed to recommend means of preventing the spread of the disease.

Plague in Russia.—An outbreak of bubonic plague has been reported at Popovka in Southern Russia. It is stated that there have been many deaths from the disease and the town has been quarantined.

Obituary Notes.—Dr. Paul Oscar Meyer of Long Island City, N. Y., a graduate of the University of Berlin, Germany, in 1882, and a member of the New York State and Queens County Medical Societies, died at his home on December 17, aged 56 years.

Dr. George Clinton Crandall of St. Louis, Mo., a graduate of the University of Michigan, Department of Medicine and Surgery, Ann Arbor, in 1890, a member of the American Medical Association, and of the Missouri State and St. Louis City Medical Societies, professor of medicine in the St. Louis University, School of Medicine, president of the consulting staff of the St. Louis City Hospital, and medical director of the St. Louis Society for the Prevention of Tuberculosis, died at his home of Bright's disease, on December 5, aged 47 years.

Dr. Asbury J. Russell of Oakland, Cal., a graduate of the University of Wooster, Medical Department, Cleveland, O., in 1868, died suddenly at Grass Valley, Cal., on November 26, aged 67 years.

Richard H. Townley, superintendent of the Lincoln Hospital, New York, and formerly a lieutenant in the United States Navy, was accidentally killed while cleaning a gun in his rooms at the hospital on December 9.

Dr. Grenville A. Emory of Middleton, N. Y., a graduate of the Albany Medical College in 1867, died at his home on December 12, aged 74 years.

Dr. Eli Peck Miller of New York, a graduate of the Bellevue Hospital Medical College, New York, in 1864, died at his home of pneumonia on December 19, aged 84 years.

Dr. William Wallace Holliday of Cleveland, O., a graduate of the Western Reserve University, Medical Department, Cleveland, in 1876, a member of the American Medical Association and the Ohio State and Cuyahoga County Medical Societies, and president of the Western Reserve Medical School Alumni Association, died in the Lakeside Hospital, Cleveland, on December 7, aged 61 years.

Dr. James Alico Comstock of Greenfield, Ind., a graduate of the Medical College of Ohio, Cincinnati, in 1867, a veteran of the Civil War, and a member of the Hancock County Board of Pension Examiners, died in the Deaconess Hospital, Indianapolis, on December 8, aged 68 years.

Dr. Edward L. Casey of North Woodstock, N. H., a graduate of the University of Maryland, School of Medicine, Baltimore, in 1905, died in the Laconia Hospital from pneumonia, after a short illness, on December 9, aged 30 years.

Dr. David Alexander Kittle of Kansas City, Mo., a graduate of the Jefferson Medical College, Philadelphia, in 1838, and a holder of degrees also from the Rush Medical College, Chicago, 1846, the Medical Department of Washington University, St. Louis, 1853, and the Keokuk Medical College, Iowa, 1864, died at his home on December 1, aged 92 years.

Dr. Peter O. Bleiler of Allentown, Pa., a graduate of the Jefferson Medical College, Philadelphia, in 1876, and a member of the American Medical Association and the Pennsylvania State and Lehigh County Medical Societies, died at his home from arteriosclerosis, on December 10, aged 60 years.

Dr. William Samuel Love of Winchester, Va., a graduate of the University of Pennsylvania, Department of Medicine, in 1861, died at his home on December 12, after a short illness, aged 76 years.

Dr. William Hand Browne emeritus professor of English Literature at Johns Hopkins University, Baltimore, who died in that city on December 13, at the age of 34 years, was a graduate of the University of Maryland, School of Medicine, in 1850, although he had never entered upon the practice of medicine.

Correspondence.

OUR LONDON LETTER.

(From Our Regular Correspondent.)

INSURANCE STATEMENTS—EFFECT ON HOSPITALS—MEDICAL COUNCIL'S SESSION—PRIESTLEY LECTURE BY PROF. METCHNIKOFF—HISTORY OF MEDICINE SECTION INAUGURATED—OBITUARY.

London, December 6, 1912.

Last evening the Insurance Commissioners issued an account of the negotiations between the medical deputation and Mr. Lloyd George and added the steps to be taken to bring the Act into operation on January 15. They also issued the new regulations. The chief concessions made are representation on insurance committees increased to one-tenth, court of inquiry to consist of two medical men and one lawyer instead of the committee of complaints, some extra payment in mountainous districts, x-rays and bacteriology not to be expected in ordinary diagnosis nor major surgical proceedings in treatment. The British Medical Association also last night issued its statement. They have invited all members of the profession to decide whether to administer the medical part of the Act, have "not advised as to the nature of the answer to be given." A special representative meeting of the association has been called for December 21 in London.

A third document issued last night is from a number of practitioners who have decided to work under the Act, calling a meeting for December 13, to formally establish the "National Insurance Practitioners' Association," to promote and safeguard the interests of those who may accept service under the Act. They profess to see it to be their duty to themselves and the public to do so.

The practitioners at Henley have combined to form a public medical service and all private clubs will cease to exist there on the 15th prox., when wage-earners and their families whose income does not exceed £2 per week can enter the new combination and so secure attendance and medicine.

The effect of the Act on our hospitals is exciting grave apprehensions. At a meeting of the governors of the London Hospital on Wednesday, the House Committee reported that the cost of insuring the hospital employees would be about £850 a year. Worse still, a number of subscribers were withdrawing their support on account of the Insurance Act, and as the hospital's income is chiefly from voluntary contributions, the outlook is becoming serious. They would have to spend about £25,000 a year on patients who were insured under the Act. Surely, that is a good reason why they should be reimbursed to a considerable extent from the funds extracted from these people as insurance. Other hospitals will doubtless have to suffer in the same way, and the danger threatens to be a grave injury to the public.

The winter session of the General Medical Council has been held. It was opened on Tuesday, November 26, with an address by the president, Sir Donald MacAlister, who expressed regret at the death of Mr. Norton and referred to other changes in the personnel of the Council. He reported that, as they desired, he had communicated with the government the importance of their control of qualification and registration in Ireland being secured in case Home Rule should be carried. The government's reply was a request for a statement of the grounds on which this request was made. He ac-

cordingly furnished a memorandum which there was reason to suppose had been considered by the Cabinet, though he had not so far received any communication from the Lord President. Notices by private members proposing amendments had appeared on the order papers of the House, but under the present mode of procedure could not be considered. A hope was expressed that later an opportunity may be found, but it is difficult to see any justification of such a hope.

The Insurance Act could not be forgotten and the committee on this had reiterated the opinion of the Council that in the absence of provisions for institutional treatment of the insured, the existing facilities for the study of clinical medicine, surgery, and midwifery might be seriously endangered to the great injury of the public. The question is still being considered by the commissioners. A bill in the House of Lords suggested by the Council makes some alterations in the election of direct representatives. It is a small affair and might well have taken a wider sweep. The Council stands in need of no little reform, and if the Lord President could be induced to introduce a bill at all, surely he could have been persuaded to propose something more than a plan to reduce the expense of elections. It is clear the Council is as indifferent to its position as heretofore. Reports of several committees were received and ordered to be entered on the minutes. Much time was occupied by disciplinary proceedings. Several names were directed to be expunged from the register. Of these one was of a practitioner who was said to have died some time ago, but another person has been acting in his name. It is an unprecedented case in the history of the Council, and now it remains for the criminal authorities to take up the charge of personation.

We have had Prof. Metchnikoff in London last week, and on Friday afternoon he delivered the Priestley memorial lecture of the National Health Society, the R. S. M. lending its theater for the occasion. This lectureship was founded two years ago in memory of Lady Priestley, who was an original member of the National Health Society when it was founded some thirty years ago. The chairman, Sir J. Crichton-Browne, presided, and in introducing the lecturer conveyed to him an expression of regret from Princess Christian, president of the society, at being unable to be present, also of the French Ambassador, who wrote to say a previous engagement had unfortunately prevented him from attending. The chairman went on to say Pasteur's mantle had fallen on Prof. Metchnikoff, whose theory of immunity had revolutionized medical science and whose discovery of the function of the white corpuscles had modified treatment. He had taught them to help the beneficent organisms in their defense against invading microbes, showing them, so to say, "how in case of need to set a thief to catch a thief."

Prof. Metchnikoff, speaking in French, said tuberculosis was formerly looked upon as a disease of nutrition, though in some countries it was long held to be contagious. Villemin fifty years ago proved it could be inoculated into animals. Thirty years ago Robert Koch discovered the bacillus. Several species are distinguished, one in cold-blooded animals, another in birds, and another in mammals. The species peculiar to man was the chief cause of human tuberculosis, but precaution was necessary against infection by the bovine form. Cases of recovery had long been recognized in dissecting rooms and recent evidence of healed and past tuberculosis had accumulated so as to point to its being almost universal among the adults of town populations dying from other diseases; von Pirquet's test giving 90 per cent. as having been infected, though only 15 per cent. died of it, one-seventh of all deaths, so 85 per cent. had recovered and many of these never knew they had suffered from tubercle. Various methods of treatment were mentioned and Metchnikoff admitted that some of them had been useful, but no real remedy had been found. Unconscious inoculation by mild strains had led to immunity, and the present diminution of the death rate from tubercle in London and some other cities was probably due to this. The fall in the death rate in twelve years had been from 24 to 13 per 10,000 of the population per year. Such natural infection was a factor of great importance in the fight against any kind of infections disease. The disappearance of leprosy was probably so brought about. There are numerous opportunities for such immunizing strains of tubercle bacillus to gain access to human beings. What cause or causes had brought about the comparative mildness of these immunizing races on strains "had yet to be discovered, and the most active study of these strains and the precise conditions under which they occurred was needed to find out how they might be utilized for ensuring the protection of humanity instead of their beneficent invasions being left to chance. In that direction was their last hope, and the progress made up to the present in the war against tubercle justified the hope that in the not too distant future the *homo sapiens* would triumph over the *Bacillus tuberculosis*."

A vote of thanks proposed by Sir E. Ray Lankester and seconded by Sir James Goodhart was awarded to Prof. Metchnikoff by acclamation.

The new section of the R. S. M. has made an excellent beginning and vindicated the right of the "History of Medicine" to such a position. Sir F. Champreys, as president of the society, at a meeting on November 20, declared the section duly constituted. The officers of the section were then elected, Sir William Osler being president, and he, after some remarks on the objects to be kept in view, read a most interesting paper on "A Down Survey Manuscript of William Pett," who was born in 1623 and died 1687. He was for a short time professor of anatomy at Oxford University and vice-principal of Brasenose College, and if his other work overshadowed his professional he should be remembered for his share in the first "Bills of Mortality" of London (1661), the first work in English of the kind, and his "Observations on the Dublin Bills of Mortality" (1683). As a political economist he achieved a great reputation, and as Sir W. Osler said "his praise is in the schools." The Cambridge University Press reprinted his economic works in 1899, and Lord Edward Fitzmaurice issued his "Life" in 1895. In 1649 Petty had been named deputy to the Regius Professor of Medicine at Oxford and in 1651 succeeded to the chair of Anatomy. He became an active member of the society or club out of which originated the Royal Society. In 1692 he was appointed Physician General to the Forces in Ireland and immediately began to reorganize the medical service. He was an energetic man of great resources; energy he called the great requisite of life. The claims to the Irish lands could not be arranged—there was no survey and it was said none could be completed

for thirteen years. Petty said he would do it in thirteen months if he had a free hand. He agreed to "survey and measure and to map." He seems to have had a genius of organization and his work reads more like the Twentieth than the Seventeenth century. He completed his survey, which was known as the down survey as it was set down on the map. The manuscript shown by Sir W. Osler contains a copy of the contract he made to do it in Petty's own hand, dated Dublin, May 18, 1655.

Lieut. Col. Edward Alfred Birch, late of the Indian Medical Service, died on November 27. He qualified in Ireland in 1861 and soon after entered the navy, in which he served five years, having served at Kagosima and Simonoski, and was mentioned in dispatches. He took the F.R.C.S.I. in 1866; I.B.C.P., 1865; D.P.H., Cambridge, 1878; M.D., Brussels, 1879; was elected F.R.C.P. Lond. in 1892. He became Fellow and later Examiner in Medicine of the Calcutta University, Professor of Medicine and Principal of the Medical College and Physician to the College Hospital. He wrote "The Effects of Warm Climates on the Functions and Secretions"; "Epidemic Pleuropneumonia," and the "Management and Medical Treatment of Children in India."

Dr. Joshua Plaskitt, F.R.C.S., died suddenly on Sunday afternoon, falling dead on the pavement as he was walking home. He was 78 years of age.

Brigade-Surgeon Thomas Stick Veale, M.D., I.M.S., died on the 1st inst., aged 81. Dr. George W. Sparke, formerly of the Royal Artillery, died on November 22, in his 84th year. Surg. Col. H. M. Greenhow, F.R.C.S., late of the Bengal service, died on the 26th ult., in his 84th year.

NINTH ANNUAL MEETING OF THE PHILIPPINE ISLANDS MEDICAL ASSOCIATION.

(From Our Regular Correspondent.)

MANILA, November 5, 1912.

THE second session of the Ninth Annual Meeting of the Philippine Islands Medical Association began at 9 A.M. The first paper, entitled "Status Thymico-Lymphaticus in Filipinos" was read by Dr. B. C. Crowell. The author of this paper reported 19 cases of this disease, all of which he had observed in Filipinos. He stated that the experience here was similar to that had in Europe and the United States, namely, that the majority of the cases were discovered at autopsies which were made upon the usual run of cases that come to a city morgue. The number of cases observed, however, had been considerably augmented of late on account of the activity of the health officers in sending to the morgue for autopsy all bodies in which glandular enlargements were found. He stated that in making the diagnosis clinically in other countries, much stress was laid upon the square appearance of the pubic hair. This diagnostic sign was absent in Malays, particularly in Filipinos. The pathological findings in Malays, however, were otherwise practically the same as those found in other races. The principal points upon which Dr. Crowell based his diagnosis of this condition were, the enlargement of the lymph tissues at the base of the tongue and the fauces, the enlargement of the thymus gland, and hypertrophy of the lymph structures in the intestines associated with enlargement of the lymph glands.

The next paper was entitled "Sarcoma of Intestines, Pathological Anatomy, with Report of Cases," by Dr. R. W. Hammack. The author gave the history of three cases of primary sarcoma of the intestine. One of these was of the annular variety. He had seen a fourth case, but on account of the fact that it was not clear that the primary lesion was in the intestines, he did not include it with this series. He invited attention to the rarity of this affection and to the fact that in children the disease was nearly always confined to the large intestine.

The next paper was entitled "A Tumor of the Hypophysis Cerebri," by José Hilario. The author reported several cases of this disease which had been found at autopsy.

The next paper was entitled "The Rôle of the Individual Proteins in Nutrition," by R. B. Gibson, the Assistant Professor of Physiology in the College of Medicine and Surgery. The author called especial attention to the difference which existed between complete proteins and non-complete proteins. He stated that the proper nutrition of the organism depended largely upon a correct salt balance. He gave instances of feeding experiments made upon young rats, in which the requisite number of calories were supplied in the food, but in which a correct salt balance was not maintained, and he showed that practically no growth took place in such animals, but that an increase in weight immediately began when a correct salt balance was maintained. It was his opinion that this observation might be of great importance in throwing additional light upon the etiology of beriberi, especially in view of the fact that highly polished rice was a protein that lacked a proper salt balance. Rice polishings he considered to be complete proteins. The speaker said, however, that he had not had an opportunity to verify this supposition by analysis.

The next paper read was entitled "Polyneuritis Gallinarum—the Influence of Various Foodstuffs on Its Development," by Dr. Edward B. Vedder, of the Army Board for the Study of Tropical Diseases. Dr. Vedder reported on a series of feedings which had been made, in which chickens were fed polished rice and meat, polished rice and potatoes, polished rice and peas, polished rice and bananas, polished rice and condensed milk, and polished rice and white bread. The object of these experiments was to determine whether the neuritis preventing principle existed in the substance fed with the polished rice. The results of the experiment were, that polyneuritis gallinarum developed before the 23d day, in all of the fowls except in those in which peas were fed in addition to the rice. From these experiments, the author pointed out that peas possess the neuritis preventing principle, perhaps in practically as large proportions as it existed in mangoes or beans. He also called attention to the fact that it had been observed, on Norwegian ships, that after 1894 beriberi was frequently encountered among the sailors, whereas, prior to that date, it was practically unknown. An investigation of this matter showed that prior to 1894 the sailors used rye bread, and after that date, they used white bread, which was made of highly milled wheat. Upon bran being added to the ration, the beriberi promptly disappeared. He stated that similar experiences had also been had in Labrador, where beriberi is found to prevail very extensively. It was found that the staple article of diet among

the Labrador natives, at times, was bread made from highly milled wheat, and when this was used, beriberi almost invariably resulted. Here again, various experiments had shown that it was possible to eradicate beriberi when bran was added to the ration.

The next paper was entitled "Early Changes in the Peripheral Nerves in Polyneuritis Gallinarum," by Dr. Elbert Clark, Professor of Anatomy of the College of Medicine and Surgery. Dr. Clark made microscopical examinations of the sciatic nerves of fowls that were undergoing feeding experiments with polished rice, and invariably he found that marked degenerative changes took place in the nerve trunk between the axis cylinder and the medullary sheath, and transverse fibrils disappearing almost completely. The average time for paralysis to be observable clinically was generally found to be about the 23d day, after a feeding experiment was begun, although it had been observed as early as the 15th day. He then determined to make examinations of the nerve as soon as the experiments were begun. He found that distinct changes took place in almost every instance as early as the seventh day of the feeding experiment, and in such cases, no clinical manifestations of neuritis could be detected. He also pointed out that apparently, then, from the very beginning, certain of the nerve fibers were affected, and as the disease progressed, more and more became evolved until finally paralysis set in.

The next paper was entitled "Infant Mortality in Manila," by Dr. W. E. Musgrave. Dr. Musgrave stated that he was simply presenting the general considerations in connection with infant mortality, and that two other papers which were to have been read by his fellow members on the Committee appointed for the study of infant mortality in the Philippines, would not be read at this time as those members were not quite ready to report. The investigations, however, had gone far enough to show that the infant mortality in the Philippines was intimately associated with a lack of proper nutrition of the mothers, and that the pathetic part of the matter was that in most instances the mothers were not even aware of the fact that their simple diet of rice and fish was not sufficient to furnish an adequate amount of nutrition for themselves and a proper milk for their infants. He dealt at length with the difficulties in the way of providing a satisfactory raw milk in the Philippines, and pointed out that the solution of the problem lay in making available a good whole milk such as that which was now quite largely imported into the country in sterilized form.

In the discussion which followed upon the preceding four papers, Dr. Heiser stated that he was glad to note the additional light thrown upon the etiology of beriberi by the paper of Dr. Gibson, and that all that Drs. Vedder and Clark had done simply added more and more evidence to the vast quantity already accumulated, namely, that beriberi was intimately associated with nutrition, and that it was probably due to a faulty rice diet. Even though the etiology might not be accepted by all medical men, yet, from a practical standpoint, sufficient progress had now been made for the sanitarian to proceed without waiting for definite answers as to whether beriberi was a nutritional or an infectious disease. He stated that the matter had now reached the stage where it might be stated that an outbreak of beriberi could be stopped, or beriberi prevented, with the same certainty as it was possible for the sanitarian to stop an outbreak of cholera, or to prevent it occurrence. It was simply a question of selecting a diet which contained the neuritis preventing principle, such as was represented by unpolished rice. With regard to the paper by Dr. Musgrave, he agreed thoroughly regarding the difficulty in supplying a proper cow's milk to the residents of the Philippine Islands. The obstacles did seem almost insuperable, and for the present at least, an imported, canned, sterilized milk seemed to be the only practical substitute. He thought, however, that the difficulty might be met by introducing into every town and hamlet in the Philippine Islands, milk goats, and that through them, this very necessary food could be supplied to the masses of the people at a cost which was within their financial ability. That the Filipino people as a class were so poorly nourished had long since been recognized, and a campaign had been started over three years ago to teach them to utilize the food stuffs which contained adequate nourishment and which grew so abundantly in these islands on every hand.

Dr. Shaklee stated that perhaps the lack of salt balance, as pointed out by Dr. Gibson, might be further influenced by the presence or absence of certain salts; that unless magnesium was present in the proportion of practically ten times the amount in which calcium was present, a rapid drain of the body fluids took place, but that when the proper proportion was restored, this process immediately stopped.

Dr. Yeamans desired to ask Dr. Vedder whether experiments had been conducted in connection with his work on beriberi, which referred to the salt balance.

Dr. Clark wished to ask Dr. Gibson whether any histological examinations had been made of nerve fibers in cases in which feeding experiments had been carried on with the different salt mixtures.

Dr. Vedder stated, in reply to Dr. Yeamans, that he had conducted a large number of experiments, keeping in mind the salt balance, but that they had all proven negative. His conclusion that the salt balance is not concerned in the etiology of beriberi had received further confirmation by the fact that the neuritis preventing principle had not apparently been discovered.

Dr. Gibson, in reply to Dr. Clark, stated that so far as he knew, no histological examinations had been made in connection with stunted growth produced in rats by changing the salts in the diet.

The next paper was entitled "Experimental Acclimatization of the Philippine Monkey to a Tropical Sun," by Dr. A. O. Shaklee. This was a report upon an interesting series of experiments in which the author acclimated a number of monkeys by gradual exposures to the sun, and then exposed them, with other monkeys which had not been so acclimated. In practically every instance the monkeys which had not been acclimated died within a period of an hour, or less, and the acclimated monkeys resisted the effects of the sun's rays apparently without discomfort or elevation of temperature. The unacclimated died almost at the same rate as those monkeys reported upon in the experiments of Dr. Aron, which paper was read at the Seventh Annual Meeting of the Philippine Islands Medical Association.

The last paper on the program "Sunlight," was read by Harry D. Gibbs.

Progress of Medical Science.

Boston Medical and Surgical Journal.

December 12, 1912.

1. Alimentary Aberrations; the Röntgen Rays as a Factor in their Diagnosis. P. Brown.
2. The Prevention of Water-Borne Disease in Lake and River Traffic. A. J. McLaughlin.
3. Arteriosclerosis Probably Not an Important Factor in Etiology and Prognosis of Involution Psychoses. G. L. Watson.
4. Heredity; with Especial Reference to the Law of Gregor Johann Mendel, O. S. A. J. M. Connolly.
5. The Treatment of Pulmonary Tuberculosis by Artificial Pneumothorax, According to the Method of Forlanini. G. M. Balboni.
6. Congenital Pelvic Kidney. B. B. Cates.

1. The X-Ray Diagnosis of Gastrointestinal Conditions.—P. Brown states that the *x*-rays help to elucidate many problems in gastroenterology. The more simple diagnostic problems may relate to the determination of the size, the shape, and the position of the stomach and to that of the position and arrangement of the classical divisions of the intestines. Problems which may be considered as slightly less simple are those having to do with the determination of motility, or other evidence of peristaltic activity. Those more complex in nature are problems dealing with the diagnosis of some localized influences inhibitory to normal function; to wit, kinks, pressure-points, and other hindrances due to extrinsic causes such as adhesion bands and the like. Finally, there are very complex problems which are offered by the intrinsic lesions, of a nature either destructive or cicatrizing, which are often malignant and always seriously to be considered.

2. Prevention of Water-Borne Disease.—By A. J. McLaughlin. (See MEDICAL RECORD, November 9, 1912, page 861.)

3. Arteriosclerosis and the Involution Psychoses.—G. L. Walton studied with reference to the possible etiological rôle of arteriosclerosis, one hundred cases of that phase of manic-depressive insanity known as involutional, the patients presenting marked depression, often with agitation, with self-accusation, and with somatic delusions. An equal number of control cases were also examined. There was no more clinical evidence of arteriosclerosis in the psychosis than in the control cases.

4. Human Applications of the Mendelian Theory.—J. M. Connolly states that the inheritance of brachydactyly is clearly in accordance with Mendel's law. Brachydactyly behaves as a simple Mendelian dominant to the normal form, and the recessive normals cannot transmit the affected condition whatever their ancestry. Night-blindness has been traced through ten generations and nearly three centuries, in the 2,000 descendants of a native of southern France. The affection behaved as a Mendelian dominant. The principle "once free, always free," applied in these cases. The inheritance of retinitis pigmentosa and hereditary optic atrophy is also Mendelian. The inheritance of color-blindness illustrates a group of cases in which the incidence of disease is largely, if not absolutely, restricted to one sex. In color-blindness the burden is invariably borne by the male; but a color-blind man does not transmit color-blindness to his sons, but only to his daughters. The daughters, however, are themselves normal, providing the mother was, yet they transmit color-blindness to half their sons. A color-blind daughter could be produced, apparently, only by the marriage of a color-blind man with a woman who transmitted color-blindness, since the daughter to be color-blind must have received the character from both parents: whereas the color-blind son receives the character only from his mother; but a color-blind woman's sons will all be color-blind. It appears as though color-blindness were due to the presence of an extra Mendelian factor as compared with the normal, and that a single dose of it will suffice to produce color-blindness in the male, but a double dose is required to produce it in the presence of the factor for femaleness. In the peculiarly male disease, hemophilia, the pathological character is dominant in one sex, but recessive in the other. Other affections whose inheritance follows the law of Mendel are the following: polydactylism, split-foot, Huntington's chorea, deafmutism, feeblemindedness, twins, and ichthyosis. Davenport and Weeks have shown that epilepsy is inherited according to the Mendelian law, and advocate segregation of all epileptics during the reproductive period.

New York Medical Journal.

December 14, 1912.

1. The Prevention of Epilepsy. L. P. Clark.
2. Overeating as a Cause of Acute Appendicitis. E. Novak.
3. Labyrinthitis and Cerebellar Abscess. I. W. Voorhees.
4. Autotherapy. C. H. Duncan.
5. Defective Vision in Children. A. C. Sautter.
6. The Prognosis in Gallstone Disease. E. MacD. Stanton.
7. Albumin Determination. G. W. Warren.
8. Pneumonia in Open Air Sanatoria. H. L. Barnes.
9. Simple Perineal Enucleation of the Prostate Gland. J. M. White.
10. Surgery of the Bones and Joints. J. B. Murphy.
11. A Description of the Enteroptotic Woman. R. R. Smith.

1. The Prevention of Epilepsy.—L. P. Clark believes that the prevention of epilepsy is closely bound up with a more precise and intensive study of the family stock from which the disease is recruited. Birth injuries and accidents must be still further eliminated. The rearing of neuropathic individuals must be given more definite and painstaking attention. Finally, a proper metabolism in potentially epileptic individuals must be still more energetically safeguarded.

2. Overeating as a Cause of Appendicitis.—E. Novak advances the theory that a considerable number of cases of appendicitis are caused by overeating. As a result of overdistention of the stomach, the superior mesenteric vessels, lying immediately behind this viscus, may be subjected to compression, which produces a decided interference with the intestinal circulation. The first effect of such a circulatory disturbance is the excitation of more or less violent peristaltic activity in the intestine, thus explaining the pain usually felt in the epigastrium at the onset of an attack of appendicitis. Another effect, direct or indirect, of this disturbance of circulation is exerted upon the appendix, the resistance of which is diminished to such an extent that it often falls a prey to the action of the ever present colon bacillus and other intestinal organisms. A more or less severe attack of appendicular inflammation is thus precipitated.

6. Prognosis of Gallstone Disease.—E. MacD. Stanton notes that gallstones are found at autopsy in approximately ten per cent. of subjects past thirty years of age, but this figure is probably too high for the earlier decades of adult life and too low for the later decades. To be of practical value as indicating the real frequency of gallstones autopsy statistics should be collected in such a way as to show the frequency of gallstones in males and females during each decade of life. Notwithstanding the formidable pathological changes often found at operation during the period of acute exacerbation of gallstone disease there is overwhelming clinical evidence to the effect that the acute attack is only very rarely actually dangerous. Emergency operations are not as a rule life saving and are not justified if a safer operation can be performed during a quiescent period. A medical cure consists in a relatively symptomless quiescent period while by a surgical cure is meant a permanent relief from the symptoms and complications of the disease. Surgical end results are on the whole very satisfactory—almost ideally so in the early uncomplicated cases. If the surgeon can assure a low operative mortality gallstone cases should be operated upon at the first safe period after the diagnosis is made.

7. Albumin Determination.—G. W. Warren finds that the determination of the albumin content in its relation to the amount of pus in the urine is of the greatest aid in the diagnosis of kidney infections. The albumin content

in the most marked cases of cystitis does not exceed 0.15 per cent. Therefore, in pyuria of doubtful origin, where the urine is free from blood, an albumin content of more than 0.15 per cent. in the great majority of cases shows that the kidney is involved. With a small amount of pus and an albumin content of 0.15 per cent., it can safely be assumed that the kidney is infected.

8. Pneumonia in Open-Air Sanatoria.—By H. L. Barnes. (See MEDICAL RECORD, October 19, 1912, page 728.)

10. Surgery of the Bones and Joints.—By J. B. Murphy. (See MEDICAL RECORD, November 23, 1912, page 965.)

Journal of the American Medical Association.

December 14, 1912.

1. Visceral Organisms. A. Carrel.
2. A Study of the Causes of Death in One Hundred Patients with High Blood-Pressure. T. C. Janeway.
3. Duodenal Medication of Ipecac in the Treatment of Amebic Dysentery. H. G. Beck.
4. Recent Hygienic Improvements in Dairying. R. C. Newton.
5. A Study of Saliva and Its Action on Tooth Enamel in Reference to Its Hardening and Softening. J. Head.
6. A Clinicopathological Study of Carbon Monoxide Poisoning. J. W. McConnell and W. G. Spiller.
7. Safety-Razor-Blade Scapel. J. B. Murphy.
8. Cleft Palate Needle-Holder. G. M. Todd.
9. Averages in Attitude and Trunk Development in Women and Their Relations to Pain. R. L. Dickinson and W. Truslow.
10. After Results in Tuberculous Patients Treated During the Years 1891-1911 at the Sharon Sanatorium. V. Y. Bowditch and W. A. Griffin.
11. The Etiology of Beriberi. C. Lovelace.
12. A Further Study of the End-Results of the Conserved Ovary. J. O. Polak.
13. Heredity in Nervous Disease and Its Social Bearings. C. B. Davenport.
14. Adams-Stokes Disease. P. Frank.
15. Prevalence of the Heroin Habit. Especially the Use of the Drug by "Snuffing." J. Phillips.
16. Demonstration of the Greater Susceptibility to Heat of Sarcoma Cells as Compared with Actively Proliferating Connective-Tissue Cells. R. A. Lambert.
17. Primula Dermatitis: Its Occurrence in Rural Districts. H. A. Sharpe.
18. Note on a New Method of Suturing Blood-Vessels. J. S. Horsley.
19. Report of Death from Unrecognized Duodenal Ulcer Following Operation for Cholecystitis. E. G. Edwards.

1. Visceral Organisms.—A. Carrel details his technique by means of which entire systems of organs may be kept alive outside of the organism in an incubator at a temperature of 38° C. while the lungs are being ventilated. The method consists in removing aseptically *en masse* the heart, lungs, liver, stomach, pancreas, adrenals, kidneys, spleen, and part of the intestines of an animal, generally a cat. Artificial respiration is carried on by a continuous current of air interrupted ten times per minute. The results of these experiments were as follows: The viscera were functioning normally, the heart pulsating, the intestine contracting peristaltically, and the stomach digesting in the successful cases. After five or six hours intestinal hyperemia appeared and it seemed as though peritonitis developed progressively. While in some cases death occurred almost suddenly, in three or four hours, in most of the cases life continued even ten or thirteen hours. The death of the visceral organism was announced by a weakened heart action with later a sudden stoppage. In the last experiment organic death occurred thirteen hours and fifteen minutes after that of the cat from which the organs were taken.

2. Causes of Death in Cases of High Blood-Pressure.—By T. C. Janeway. (See MEDICAL RECORD, Vol. 81, page 1118.)

3. Duodenal Medication with Ipecac in Amebic Dysentery.—H. G. Beck, noting the general agreement that ipecac is the remedy for amebic dysentery, and the objectionable features of the methods in vogue, states that a simple, rational, and more practical method has suggested itself in the use of the Einhorn duodenal tube. For a complete description of this apparatus and the methods of its use the reader is referred to the original article by Max Einhorn in the MEDICAL RECORD, January 16, 1910. As a rule, patients have little difficulty in swallowing the tube and comparatively little discomfort afterwards. By aspirating a little of the fluid through the tube after it has entered the stomach and testing the fluid with congo paper one can tell whether the tube has entered the duodenum. In that case the aspiration is slower and more difficult and the fluid is alkaline and bile stained. The time required for the capsule to pass into the duodenum varies from one to five or more hours. Seven cases are reported in which this method was employed after other methods had been used without effect. It appears that the duodenal administration is distinctly more efficacious than other methods. Large duodenal doses of ipecac seem to have no bad effects. There are occasionally gastrointestinal symptoms such as nausea, vomiting, and, rarely, diarrhea lasting twenty to forty-eight hours. Slight general depression may appear with a lowered blood-pressure rarely amounting to more than 10 mm. even with doses as large as 2 grams.

4. Dairy Hygiene.—R. C. Newton points out the injustice of large companies charging a higher price for milk produced hygienically and allowing no share of the profits to the farmer. He describes the cooperative system adopted by a certain company with the result of securing a comparatively high and safe grade of milk produced at a price within the reach practically of all customers and at the same time a contented body of farmers producing the milk and getting a tangible reward for their improved methods. It is by education, by an appeal to the farmer's self-respect, and by an assurance that he will be a participant, that one can work out the desired changes in the milk-producing industry.

5. Action of Saliva on Tooth Enamel.—J. Head points out the fact that roughening of the surface of the enamel of the teeth as an indication of its softening is only the final rather than the complete process, and states that he can detect very minute degrees of softening by means of a microdynamometer for testing the hardness and softness. Enamel will soften and harden again within certain limits, and this hardening and softening is influenced by the saliva and foodstuffs. The same action can occur in dentine.

7. Safety Razor Blade Scalpel.—J. B. Murphy states that every surgeon has more or less frequently been annoyed by a dull scalpel when a sharp one was very much desired. Furthermore, after a few strokes of the scalpel, especially when made in a firm or resistant tissue, like an old scar, the cutting edge of the scalpel becomes dulled. Sharpening scalpels is a nuisance and at best very unsatisfactory. In order to overcome these objections, the author has devised certain handles to carry the two types of safety-razor blades most commonly used. After these blades are no longer serviceable for the purpose for which they were intended, they make excellent scalpels. They are cheap and easily obtainable.

9. Attitude and Trunk Development and Their Relation to Pain in Women.—R. L. Dickinson and W. Truslow present the results of their studies and measurements with reference to the relation between faulty attitude and painful manifestations in women. Three types of attitude are recognized and named as follows: (1) the "Kangaroo type," in which the line of gravity passes back of most of the pivotal points of the trunk and in front of most of those of the lower extremities; (2) the normal type, in which the line of gravity passes through the important pivotal points, and (3) the "Gorilla" type, in which it passes in front of most of the pivotal structures of the trunk and behind those of the lower limbs. These anteroposterior deviations from the normal type tend toward: (1) mechanical instability; (2) muscle and ligament strain, pain, and bony deformity; (3) abnormal relationships of the viscera and derangement of their functions. The congenital trunk deformities are the long-bodied type,

which invites further deformity by the easy crushing of ribs by tight corsets during adolescence, and the over-feminine type with a large development up to the waist line and a scant one above; this type usually presents a kangaroo carriage. The practice of looking for degrees of faulty carriage, which may account for pain and weakness, will result in many a cure otherwise impossible. The diagnosis once made, the remedy consists in the correction of vicious dress and the development of weak muscles. The most common pains due to false carriage are the sacral, lumbar, and dorsal. Many of these, particularly when connected with enteroptosis and neurasthenia, may be relieved by correcting the attitude, by strengthening the trunk muscles, and cultivating deep breathing. The average woman, as seen in the city, sags. The back is nearly upright, the shoulders tend only slightly to rounding, and the chin is drooping. The deformity which is practically constant is protrusion of the abdomen. The relaxed abdominal wall is one to two inches in advance of the normal in a large group of cases. As regards posture, one-third of the cases were found good; one-half were defective. The hour-glass type of corset was the average design. The gap of the corset when unhooked should not exceed two and one-half inches. The tight corset harms weak women badly; there is no substitute for Nature's corset—the well-set-up anterior abdominal wall. Too much emphasis cannot be laid on the normal wedge-shape of the lateral third of the abdominal cavity as seen in anteroposterior section and the importance of the uplift of muscular contraction cannot be overstated. Thoroughness of examination, inspection of the unclothed trunk, particularly in women with backache, enteroptosis, and neurasthenia, muscular training continued after puberty and systematically ordered after labor, together with the supervision of gymnastics and dress, are the measures advised.

10. After Results of Sanatorium Treatment.—By V. Y. Bowditch and W. A. Griffin. (See MEDICAL RECORD, October 26, page 784.)

11. Etiology of Beriberi.—C. Lovelace states that a fatal form of peripheral neuritis occurs among residents of the Madeira Valley and among the employees of the Madeira-Mamoré Railway. This neuritis must be classified as beriberi, or as a member of an as yet hypothetical beriberi group. This disease bears no intimate relation to the consumption of rice, polished or unpolished, as a staple article of diet, nor is the disease due to the absence of protein in the diet.

12. End Results of the Conserved Ovary.—J. O. Polak concludes that only healthy ovaries should be conserved. The right ovary when retained is less prone to subsequent inflammatory changes than the left. All retained ovaries or portions of ovaries should be placed in such a position in the pelvis that their circulation is not interfered with. Resection gives the best results when its application is limited to large monocysts, retention-cysts, fibroids, or dermoids. The multiple cystic ovary should be either left alone or ablated. Resection is not permissible. When a resection is made it should be extensive, excising the entire diseased area. The suture should only approximate the wound edges, not constrict them. The retained portion should be tacked up in the pelvis to maintain an equal circulation, and the suture line should be always covered with a reflexion of the peritoneum.

The Lancet.

December 7, 1912.

1. The Biology of Tumors. C. M. Moullin.
2. Some Cases of Pyrexia. R. V. Solly.
3. The Suppression of the Convulsion in Eclampsia. A. J. Wallace.
4. Eight Cases of Osteomyelitis of the Spine. G. R. Strong.
5. Epithelial Proliferation Induced by the Injection of Gasworks Tar. H. Bayon.
6. Acute Inversion of the Uterus. J. H. Aytoun.
7. Case of Extensive Fibro-Angioma Treated by Radium. F. H. Jacob.
8. A New Form of Tuberculin (T.F.). Some Notes on Its Diagnostic and Therapeutic Value. W. C. Lyons.
9. An Interesting Case of Arrested Tuberculosis (?). C. Gayford.

1. The Biology of Tumors.—G. Mansell Moullin states that whatever form is assumed by the tumors that originate from the somatic elements or the structures derived from them, the underlying principle of their growth is the same. The power that would compel the higher differentiation of the cells that compose them ceases to act. The cells that form the tumor-bud cease to develop further, and never do any work. They cease to bear any relation to the rest of the body, except that they draw their food-supply from it and give up their waste products to it. They do not influence other tissues in any way, nor are they influenced by them. They continue to grow and multiply, perhaps with all the greater energy, because the force that would have been consumed in raising the cells to a higher plane of differentiation is available now for growth. How is it that the tissues at one small spot in the body are suddenly able to assert themselves in this way? How is it that almost from one minute to another they can shake off all allegiance to the other tissues, and except that they are dependent upon the rest of the body for their food, grow upon it, entirely independently of its growth, and thrive while it may starve? How is it that from normal tissues, doing their normal work, they can suddenly develop into structures like parasites that drain the body of its sustenance and do nothing for it in return? There is only one answer to questions such as these. The progressive development of the organs and tissues of the individual, as of the race, is the outcome of the mutual relations that have been built up in the course of ages between the infinite variety of cells of which the body is composed, transmitted from generation to generation. Environment and the actual working of the organs and tissues in the individual are but forces of the moment. The real controlling power is the hereditary transmission of the relations which the different parts of the body have exerted upon each other through immeasurable time, and which have been handed down in ever increasing numbers from countless ages. It is this that directs development and differentiation and keeps growth in check. If it fails from any cause, or if it is overpowered by the forces of the moment, whether they form part of the environment or originate in the body itself, development and differentiation come to an end; organs fail to attain their normal perfection, and tissues remain at that level of specialization at which they happen to be at the moment, incapable of work because of their imperfect development, but with their power of growth not only intact, but released from all restraining influence, and, it may be, even increased in vigor.

2. Cases of Pyrexia.—R. V. Solly reports a number of cases illustrating many different conditions causing pyrexia. Pyrexia may be due to typhoid and to paratyphoid fever, to the pneumococcus, and to syphilis; to pyemia and septicemia, including malignant endocarditis; to subdiaphragmatic abscess, to portal pyemia, and to nematoid worms; to urinary conditions, and to rat bite fever.

3. The Suppression of the Convulsion in Eclampsia.—A. J. Wallace notes that in December, 1910, L. Murray made the suggestion that as intrathecal injections of solutions of magnesium sulphate had proved useful in tetanus they might also be of service in eclampsia. This valuable suggestion has not received the recognition it merited, for the results in the treatment of tetanus have been at least encouraging. Crandon states that of 206 cases of post-operative tetanus collected by various writers the large majority were fatal. Fox's collection of fifteen acute cases of tetanus treated by intrathecal injections of mag-

nesium sulphate showed a recovery rate of 50 per cent. The usual 25 per cent. solution of magnesium sulphate was employed after sterilization in the treatment of the convulsions of puerperal eclampsia. The drug was injected into the subarachnoid space of the spinal cord. The dose was regulated by the body-weight of the individual patient, 1 c.c. being allowed for every 25 pounds of body-weight. The results were satisfactory.

5. Gasworks Tar and Epithelial Proliferation.—N. Bayon has been able to demonstrate on rabbits the deleterious influence of gasworks tar in the production of proliferation in epithelial tissue, and believes that this phenomenon explains to a certain point the influence of gasworks tar in producing and preparing a receptive situation for a cancerous growth. These growths differ from true cancer in one very important feature, namely, although the epithelium is seen to proliferate actively, it does not invade the lymphatics and causes no metastatic nodules.

British Medical Journal.

December 7, 1912.

1. Present Position of Treatment of Fractures. R. Jones.
2. Biology of Tumors. C. Mansell Moullin.
3. The Functional Nature of the Cecum and Appendix. A. Keith.
4. Recent Progress in Connection with Syphilis. D'A. Power.
5. A Sequel to Novocaine Injection. S. Gooding and F. L. Etheridge.

1. The Treatment of Fractures.—R. Jones comments upon the recent report of the committee on fractures appointed by the council of the British Medical Association. He states that the value of a correct alignment in conjunction with complete obliteration of shortening should be appreciated. A reduction quite incomplete during the primary anesthesia may easily be made complete during the following forty-eight hours. This correction is brought about by continued fixed extension, aided by appropriately placed pads; in other instances by approximating the lower to the upper fragment by posture of the limb. One should study the causes of non-union from the clinical side, and in the application of splints should avoid rigid circular compression. Splints should always be wider than the limb they protect. Delayed union in a certain proportion of cases is inevitable. Care must be taken not to carelessly relegate such cases to the more serious class of ununited fractures. The academic period of consolidation authoritatively asserted is not accurate, and that bones which appear firm to the hand will yield after many weeks to the incidence of body weight. Extensive callus exudation with pain on pressure most probably represents incomplete union. After having corrected by pulling and manipulation delayed and ununited fractures, the mere change in position and accurate retention will often rapidly bring about firm union. To still further ensure success the bone may be percussed and elastic tubing may be applied above and below the fracture to produce congestion. It should be taught that a malunited fracture interferes with the function of the limb by deflecting the body weight from accurate incidence upon the joints above and below. Treatment should therefore be preventive. Fractures above the elbow-joint should be fixed in supination and hyperflexion. Passive movements should not be commenced too early, and should be practised in the gentlest manner. The radial deformity of a Colles' fracture should be completely rectified; the ulnar prominence is of little consequence. For Pott's fracture the displacement of the ankle should be especially overcome and the inversion of the ankle should be secured. Steps should be taken when walking is begun to maintain the inversion. The indications for operation clearly differ from the individual standpoint of the surgeon, and no rules can be laid down.

3. The Functional Nature of the Cecum and Appendix.—A. Keith notes that when one thinks of how the diet of highly civilized races has changed—in quality, quantity, and character—in comparatively recent times, one must marvel that our organization, which was evolved to deal with a more primitive and more precarious supply of food, has accommodated itself to modern conditions so well as it has. We know that beyond the neolithic period, when cereals began to be cultivated, some six thousand years ago, there lies a vast hinterland of rude human existence, when man must have lived on the natural products of the country. With the discovery of fire and of the artificial preparation of food (we know that man had discovered the use of fire before the end of the Pleistocene period) the task of the alimentary system must have been greatly altered. The greatest changes, however, are those of more recent centuries—the concentrated nature of food, its plentiful supply, its highly artificial character. When one comes to realize how slowly evolutionary processes have affected man's body in past times, one can hardly expect the internal digestive system to adapt itself to the rapid pace demanded by the ever-accumulating resources of civilization. The modern changes at work in the teeth and jaws have set in since neolithic times; we have every reason to suppose these are allied to, and contemporaneous with, changes affecting the whole alimentary system. Thus an impartial survey of the evidence at the disposal of the anatomists indicates very plainly that one cannot hope to prevent or cure the ailments to which the great bowel is liable so long as we regard it as a hopelessly injurious or useless structure. On the other hand, if we regard it as having all the anatomical appearances of a useful structure, our outlook becomes hopeful if we can only discover what its uses are. If one only knew how to keep it suitably and profitably employed by altering our diet to meet its requirements, it would serve the present and future generations just as well as it answered the digestive needs of primitive and successful races in the past.

Sinus Stimulation in Resuscitation of the Heart.—J. Erlanger states that four series of experiments which he has performed indicate that tetanic stimulation of the sinus region of the auricles is of material assistance to massage in the resuscitation of the heart. It causes the auricles to generate impulses, either rhythmical or irregular, to which the ventricles, when susceptible, respond. When massage administered for brief periods has failed to resuscitate the heart, the same period of massage combined with tetanic stimulation of the sinus has usually brought the circulation back to normal. In some instances massage alone when continued over long periods has been without effect, and to all appearances would have continued to be without effect, whereas at such a time massage combined with stimulation of the sinus has effected recovery. Whether the stimulus causes the auricles to beat normally or to fibrillate seems to make no essential difference in the end result. Not infrequently conductivity and irritability are lowered to such an extent by the cessation of the circulation, that impulses generated in an auricle started by stimulation can at first manifest no effect upon the ventricles. Under such circumstances massage alone or, more frequently, massage plus stimulation may cause the ventricles to beat with their inherent slow rate. Often then the force of the ventricular contractions is insufficient for the maintenance of an effective circulation. In such cases, however, with the gradual improvement in the condition of the heart, the auricular impulses, as a rule, soon begin to reach the ventricles, with the result that the latter immediately begin to beat more rapidly and effectively. The beneficial results of stimulation of the auricles, therefore, manifest themselves relatively late, but none the less effectively. It has been found that even after the heart has begun to beat, stimulation of the sinus region may still be of some assistance, though in another direction. It not infrequently happens that after resuscitation of the heart the blood pressure fails to rise above a certain low and insufficient level. In such cases repeated tetanic stimulation of the sinus may accelerate the rise of blood pressure and so hasten recovery. No attempt has been made to determine the mechanism of this effect.—*Journal of Experimental Medicine.*

Insurance Medicine.

The Rural Death Rate of the State of New York.—Frederick L. Hoffman, LL.D., statistician of The Prudential Insurance Company of America, on Friday morning, December 6, at the twelfth annual conference of the Sanitary Officers of the State of New York, held in Syracuse, New York, presented the results of an original and comprehensive inquiry into the important subject of "The Rural Death Rate of the State of New York." The speaker said at the outset that the problem had not heretofore received as much attention as would be desirable, largely, no doubt, on account of the preponderating numerical importance of the city population, constituting 78.8% of the whole. But, he said, it required no extended argument to prove that there was indeed a very close relation between urban and rural mortality, and that, as a matter of general public policy, much more should be done in the field of hygiene for the adequate protection of the population of the State as a whole. The speaker pointed out that the rural death rate of the State of New York was at present about the same as the city death rate, although in former years the latter had been considerably in excess. For illustration, he said, in 1900 the city death rate had been 19.5 per 1,000, against 15.5 for the rural districts, but in 1909 the respective rates were 15.9 per 1,000 for the cities and 15.1 for rural territory. It would, therefore, seem quite conclusively established that there had not been the measurable progress in rural health which had apparently taken place in the cities of New York State, considered as a group.

Among the causes of death more common in the rural districts of the State of New York, the speaker referred to typhoid fever, malarial fever, influenza, and cancer. After discussing in considerable detail the prevailing death rates from all of the principal causes, the speaker presented in brief outline the essential statistical facts regarding the comparative mortality of the fifty-seven counties, disclosing marked variations in the geographical incidence of particular diseases and a wide range in fluctuations in the death rates during the last decade. Conceding the inadequacy of the available information for precise conclusions in the matter of any one of the subjects discussed, the speaker concluded his remarks with a number of recommendations, suggesting among others, (1) a complete sanitary survey under the direction of the State Board of Health; (2) a study of the geographical distribution of disease throughout the rural portion of the State; (3) a study of the mortality of farmers, farmers' wives, agricultural laborers, and others employed in agricultural industries; (4) a study of occupational accidents in agriculture; (5) a study of the relation of canals and railways to the health of the rural population; (6) the question of rural isolation hospitals and dispensaries; (7) a study of the geographical distribution of cancer; and (8) the establishment of a division of rural hygiene in the State Board of Health for the purpose of providing a more effective sanitary supervision of rural districts and making the necessary scientific investigations preliminary to a substantial reduction in the rural death rate from preventable or postponable causes.

Anthrax as a Disease of Occupation.—Krauss relates the following: a tanner's widow made application for the life insurance of her husband upon the ground that he had lost his life as a result of a professional mishap. It was deposed that the deceased, employed in a leather factory, fell ill on December 11, 1909, the day following some work in freeing hides from arsenical dust. The symptoms were chilliness, malaise, prostration, anorexia, nausea. Swelling of the fingers was noted by the second day. The diagnosis was influenza. The patient did not improve and on December 27 another physician was summoned, the original medical attendant having apparently lost his interest in the case. There were found pain and tenderness in the abdomen, constipation, anorexia, weak and rapid pulse, cardiac murmurs, moderate fever of an almost intermittent type. Under observation the patient became weaker, the legs swelled and gangrenous areas appeared on the left foot early in February, 1910. This phenomenon was immediately followed by somnolence and other manifestations due doubtless to edema of the brain. Death resulted on February 12, and was accounted for by the supposition of an ulcerative endocarditis, due in turn to some blood poison absorbed through an unknown primary focus. The cryptogenetic character of the infection, together with the extreme poverty of the widow, was responsible for the omission of an autopsy. The claim was then referred to another magistrate, and at the hearing the deceased's employer testified that no arsenic had been used in the work; and that while now and then raw hides were handled, the patient had not been exposed to them at that period. The physician, who had first attended the patient, deposed that the occupation of the latter was not in his opinion in any way responsible for the death. Another physician summoned as an expert concurred in this view. The diagnosis of influenza was upheld by exclusion. Intestinal anthrax was naturally suggested at the outset, but the edema of the fingers was merely transitory, and diarrhea was not in evidence until late in the disease. Pustules were moreover absent. Cryptogenous sepsis was also to be thought of as the cause of the supposed ulcerative endocarditis, but there were no other evidences of its presence and this lesion could complicate any acute infectious disease, influenza as well as any other. He, therefore, exculpated the occupation of the patient as having caused death. Another medical man, testifying as an expert for the plaintiff, made a long deposition, which was intended to show that the weight of evidence spoke for an anthrax infection from the hides. The magistrate took this view and decided for the plaintiff, but the case was at once appealed. The omission of an autopsy naturally rendered the case a very unusual one, and the failure of the employer to demand and pay for one may have been construed against him. In its absence a formidable body of facts was adduced in relation to the nature of latent anthrax, the suspicious nature of the class of hides handled, and much worse, the weight of evidence in favor of anthrax as compared with such vague affections as influenza and cryptogenetic sepsis, led to a final verdict, after more than two years of litigation, for the plaintiff. It was decided that even momentary contact with infected hides was sufficient for a fatal infection. A "deadly parallel" was utilized in which the victim's symptoms were compared item for item with similar cases known to have been due to anthrax infection (intestinal anthrax), and the correspondence proved absolutely the identity of the morbid conditions.—*Zeitschrift für Versicherungsmedizin*, 1912, V, Nos. 9 and 10.

Book Reviews.

MANUAL OF CHEMISTRY. A Guide to Lectures and Laboratory Work for Beginners in Chemistry. A Textbook specially adapted for Students of Medicine, Pharmacy and Dentistry. By W. SIMON, PhD., M.D., Professor of Chemistry in the College of Physicians and Surgeons of Baltimore and in the Baltimore College of Dental Surgery, Emeritus Professor in the Maryland College of Pharmacy, Department of the University of Maryland, and DANIEL BASE, Ph.D., Professor of Chemistry in the Maryland College of Pharmacy, Department of the University of Maryland, and of Analytical Chemistry in the Department of Medicine, University of Maryland, Baltimore. Tenth Edition, thoroughly revised, with eighty-two illustrations, one colored spectra plate, and eight colored plates representing sixty-four chemical reactions. Price $3. Philadelphia and New York: Lea & Febiger, 1912.

VERY few medical books reach a tenth edition; that a work on chemistry should have achieved this distinction is sufficient proof that it has supplied a want and justified its existence. This new edition of Simon's Chemistry has been thoroughly revised and brought up to date; at the same time it retains its former appearance and characteristics. The section on physiological chemistry has been rewritten; there is also a new chapter on the theory of electrolytic dissociation or ionization, in which are considered the origin of the theory, ionic equilibrium, ionization of acids, bases, and salts, reactions on the ionic basis, activity of acids and bases, hydrolysis of salts, neutralization, electrolysis, and Faraday's laws. For the practitioner who has been out of school for some years, and who wishes to bring his knowledge up to date, this is probably the most useful work on chemistry in the market.

PRACTICAL ANATOMY. An Exposition of the Facts of Gross Anatomy from the Topographical Standpoint, and a Guide to the Dissection of the Human Body. By JOHN C. HEISLER, M.D., Professor of Anatomy in the Medico-Chirurgical College of Philadelphia. With 306 illustrations, of which 225 are in color, by E. F. FABER. Price $4.50. Philadelphia and London: J. B. Lippincott Company.

THIS, the latest addition to works on anatomy, is a handsome volume of 900 pages, well printed and plentifully illustrated. It follows the general plan of similar works, and only a thorough use of the volume in the dissecting room will demonstrate its special merits and its faults. The book is in some respects a companion and supplement to Piersol's Anatomy, and those using this latter work as their text-book will most likely turn to the present volume as their guide in dissecting. In addition to the material ordinarily supplied in a dissecting manual, this work contains a certain amount of surface anatomy and also of surgical anatomy. The Basle Anatomical Nomenclature has not been slavishly followed; in many cases the B.N.A. terms have been used directly, and where not employed they have been added in parentheses. The volume does not readily lie open at any given place as a book intended for use in the dissection room or laboratory should do. For a first edition of a work containing so many names the pages are surprisingly free from misprints. Teachers and students will do well to examine this work with care.

PHARMACOLOGY. Action and Uses of Drugs. By MAURICE VÉJUX TYRODE, M.D., ex-Instructor of Pharmacology in the Medical School of Harvard University. Second Edition. Philadelphia: P. Blakiston's Sons & Co., 1912.

THERE is a great deal to commend in this book, which, although of small size, nevertheless covers the entire field of pharmacology. The systematic plan in which the subject is presented enables the author to condense a great many topics into a small compass. Part I deals with the drugs, such as morphine, whose constitutional action is in greater prominence; Part II deals with the ferments, secretions, and extracts of animal organs; Part III discusses the drugs whose local action is most in evidence; and Part IV deals with the drugs of inorganic origin. The plan of the author may be indicated by referring to the description of the drugs forming the ether and chloral group. The general characteristics of this group are first described. Then follows a separate description of the action of the various drugs composing the group. The therapeutic application of these drugs is then described. Then follows a summary of the materia medica of the drugs already described. The same plan is applied to all the other groups. The omission of unnecessary details and the inclusion of only what is definitely known have enabled the author to present a volume that is of eminent value to the student and even to the practitioner who would refresh his knowledge of the action of drugs.

ELEMENTS OF PRACTICAL MEDICINE. By ALFRED H. CARTER, M.D., M.Sc., Fellow of the Royal College of Physicians, London; Professor of Medicine, University of Birmingham; Emeritus Professor of Physiology, Queen's College, Birmingham; Consulting Physician to the Queen's Hospital, Birmingham, to the Corbett Hospital, Stourbridge, the Bromsgrove Hospital, the Smallwood Hospital, Redditch, and Guest Hospital, Dudley, etc. Tenth Edition. Price 9/ net. London: H. K. Lewis, 1912.

AN existence of thirty-two years is certainly a long one for a text-book which like the present has in its ten editions passed through many eras of change in medical science. American medical readers will probably be interested in the English methods of treatment. Yet it is hardly likely that the entire British profession reflects the conservative and old-time methods that are presented in this volume. Thus, no mention is made of the serum treatment of cerebrospinal meningitis, nor of the use of salvarsan in syphilis. The book contains many useful suggestions as to treatment. It is noted that in the paroxysmal stage of whooping-cough the best medicine is carbolic acid in doses of one-half to one minim given in a little mucilage, glycerine, and aromatic water every two or three hours. One admirable feature of this work is the therapeutic formulary at the end of the volume. The book is well written and will probably continue to maintain a wide popularity.

MATERIA MEDICA AND THERAPEUTICS, INCLUDING PHARMACY AND PHARMACOLOGY. By REGINALD WEBB WILCOX, M.A., M.D., LL.D., Professor of Medicine (retired) at the New York Post-Graduate Medical School and Hospital, Consulting Physician to St. Mark's and to the Nassau Hospitals, President of the Medical Association of the Greater City of New York, President of the Society of Medical Jurisprudence, ex-President of the American Therapeutic Society and of the Harvard Medical Society, Fellow of the American Academy of Medicine, Honorary Member of the Connecticut State Medical Society, formerly Vice-chairman of the Revision Committee of the United States Pharmacopeia, etc. Eighth Edition, revised; with Index of Symptoms and Diseases. Price $3. Philadelphia: P. Blakiston's Sons & Co., 1912.

THIS well known text-book appears once more in a single volume. The two previous editions had been expanded so that they occupied two volumes, thus making the work more bulky and more expensive without any appreciable increase in its value. The work in one volume had achieved a position of its own, and a very enviable position it was. For the medical student this has long been a popular text-book, and it is now brought up to date most thoroughly. The book has a very complete index, so that it is quite easy to find the numberless items which the volume contains. A prominent feature of this index is the inclusion of the diseases and disease symptoms, and this will be much appreciated by the practising physician. The chief change in the contents of this edition is that only pharmacopeial drugs and preparations are included. This is quite sufficient for the medical student, and the better he becomes acquainted with these, the less use will he have, later on as a practitioner, for the numberless nonpharmacopeial preparations which are flooding the drug stores and physicians' offices and whose therapeutic efficiency is often in inverse ratio to their commercial value. This new edition will easily maintain the popularity of its predecessors.

PATHOLOGY OF THE EYE. By P. H. ADAMS, M.A., M.B., D.O. Oxon., F.R., C.S., Surgeon to the Oxford Eye Hospital; Consulting Ophthalmic Surgeon to the Radcliffe Infirmary. Price $1.50. London: Henry Froude, Oxford University Press, Hodder & Stoughton, 1912.

ADAM'S work comprises a small volume of 194 pages. It is well printed and illustrated by 43 figures in the text. The first chapter, which is devoted to describing methods for preserving and staining tissues, is followed by chapters on the various anatomical divisions of the tissues of the eye. A brief description of the anatomy and normal histology is followed by a short discussion of the pathology of each part. A chapter on glaucoma, general diseases affecting the eye and the bacteriology of the eye conclude the work. The statements are brief and to the point. There is no bibliography. This concise consideration of the pathology of the eye will be of value to students who are beginning the study of ophthalmology.

Society Reports.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON OBSTETRICS AND GYNECOLOGY.

Stated Meeting, Held October 24, 1912.

DR. FRANK A. DORMAN IN THE CHAIR.

Renal Hematuria; Decapsulation, Nephrectomy.—Dr. HENRY DAWSON FURNISS reported this case. The patient was a woman, 50 years of age, who was seen in December, 1911, at which time she reported that the urine had been as dark as port wine for three months from the admixture of blood. There was no pain or frequency of urination. The radiographic examination for stone was negative. The blood pressure was 125 mm. The daily amount of urine was 450 c.c. The examination of the bladder was negative, except that just inside of the normal ureteral opening there was a slight depression that looked like the orifice of another ureter. This could not be catheterized, nor was colored urine seen coming from it after the injection of indigo-carmine. After the injection of indigo-carmine into the gluteal muscles elimination began from both sides in fourteen minutes, a bright red fluid coming from the right ureter at each spurt, while that from the left was clear. The urine from the left side showed a slight amount of albumin. An injection of adrenalin into the renal pelvis had no effect on the hematuria. There were a few hyaline and finely granular casts. On February 10 the right kidney was cut down upon. The capsule of this kidney was about four times as thick as that of a normal kidney and very adherent; the kidney itself was of normal size. There was no cessation of the hematuria after the operation. The patient was treated with human blood serum for two weeks and then with calcium lactate without any effect on the hematuria. On March 12 indigo-carmine R. was administered and colored urine came from the left ureter in twelve minutes. As the hemorrhage did not cease at the end of six weeks a nephrectomy was done when it was found that there were two ureters and a double renal pelvis. Examination of the kidney showed some edema and round-celled infiltration of the cortex which was probably due to the former decapsulation. There was free blood in the straight and convoluted tubules which showed that the hemorrhage was from the kidney substance. The patient made an uninterrupted recovery. The daily amount of urine increased to 1200 c.c. two weeks after the operation and was free from albumin and casts.

Renal Hematuria; Cessation after Ureteral Catheterization.—Dr. HENRY DAWSON FURNISS reported this case. The patient was a woman, 50 years of age, whose previous history was negative except that three years before she had had a hematuria which lasted for several days. There had been no return until March of this year, since which time the urine had been continuously port wine colored. There was some dull aching pain in both lumbar regions, but no loss of weight or strength. Examination showed a normal bladder. Bloody urine was obtained from the left ureter, while the urine from the right ureter was negative both microscopically and chemically. Two days after the cystoscopy the urine was free from blood and had remained so ever since. Hagner of Washington, who had reported a case of cessation of hematuria after ureteral catheterization, suggested that possibly a small ureteral polyp had accounted for the hemorrhage and that it had been scraped away in passing the catheter. It hardly seemed that such was the case in this instance, as the ureteral catheter continued to drain bloody urine; had it scraped off and passed the attachment of a polyp, clear urine should have been obtained. It was possible that a polyp just at the point to which the cystoscope was passed had been scraped away.

Renal Hematuria; Cessation after Decapsulation.—Dr. HENRY DAWSON FURNISS reported this case. This patient was also a woman 50 years of age. She was seen for the first time on September 1, 1911. Her previous history was negative. Her present trouble began two months before when the urine became bloody. She suffered from no pain or frequency of urination. The bladder was normal with urine red in color coming from the right ureter; that from the left ureter showed a trace of albumin and an occasional hyaline or finely granular cast. On September 14 the right kidney was cut down upon and found to be perfectly normal in appearance. Decapsulation was performed and two days later the urine was free from blood. On October 4 an estimation of the renal function with phenolsulphonephthalein was made which showed 50 per cent. in the first hour and 23 per cent. in the second.

Fulguration Cauterization.—Dr. HENRY DAWSON FURNISS reported this case which had been referred to him by Dr. E. W. Peterson. The patient, a woman 49 years of age, gave a history of an attack of pain eleven years before which lasted three days and was followed by the passage of gravel and hematuria. Three months ago she had had pain in the right lumbar region which lasted for an hour and since that time she had had hematuria almost constantly. She suffered from urgent and frequent urination. Examination showed the urine turbid and dark pink in color. Cystoscopy revealed what looked like a broad base papilloma just over the area of the right ureter and anterior to it. There was some edema. Believing it to be a papilloma, it was fulgurated twice, the interval between treatments being four days. Three days after the second fulguration examination revealed a dark stone just showing through the tumor-like mass. An attempt was made to liberate this with the patient in the knee-chest position using a Kelly tube and a small curette. The patient was unable to keep still and so the attempt had to be abandoned. Four days later the patient was again examined and the stone was almost born; it was as large as the tip of an adult male ring finger. She was advised to come into the hospital for the removal of this through the bladder. They had planned to dislocate the stone, passing a wire snare around it, and remove it through the cystoscope. If it had been too large for this it would have been crushed with a lithotribe and washed with an evacuator. The patient was very stout and the radiograph failed to show the presence of the stone. Dr. Furniss believed that any growth or tumefaction at the vesical orifice of the ureter, especially if there was an edematous condition, should make one suspicious of stone. These patients should be radiographed before any attempt was made to fulgurate a supposed papilloma. In the fulguration they had a bloodless method of releasing impacted stone as the fulgurated tissue would in a few days slough away.

When Is the High Forceps Operation Justifiable?—Dr. JAMES A. HARRAR read this paper. He said that the extending of the indications for cesarean section had placed the high forceps operation on the defensive, many of our best obstetricians going so far as to deny it a place among the recognized methods of treating dystocia. When the forceps was used, as it so often was, to do what amounted practically to a cranioclasty, it was utterly to be condemned. The term high forceps was understood to indicate application of the instrument to the fetal head when its largest diameters were still above the plane of the pelvic inlet. The writer took exception to the statement, "Never apply forceps to the head above the brim." This might be a safe working rule to hand the general practitioner for his proper guidance, but in the hands of the experienced operator there were not a few cases where a baby's life might be spared or a mother's morbidity avoided by the judicious use of the high application. It was a major operation, not to be undertaken except by one well versed in pelvic obstetrical work. The bad results were usually due to faulty judgment in the selection of procedure. The operator then perverted his forceps delivery into a procedure destructive alike to mother and child. There should be ideally no such thing as a "hard high forceps" in the sense of brute force. These admonitions had been made before, but they would bear repetition. High forceps was never an elective operation. A common problem was the decision between version and forceps in deformed pelves of moderate degree. The fetal mortalities distinctly favored high forceps in the ratio of 17 to 25 per cent. at the best. The idea that it was easier to snap a head through a contracted pelvic brim with a version than with a forceps too often proved disastrous to the unfortunate head. It is valuable to divide contracted pelves of moderate degree into two classes, depending upon whether the head could be made to engage in the brim by suprapubic pressure, properly directed under anasthesia, or not. If it would so engage it was a "workable contraction" either for spontaneous delivery or forceps. If it would not so engage it was a "dangerous contraction" and might demand pubiotomy, craniotomy, or even the performance of cesarean section. It was not the indications, which were few, so much as the situations which arose, in which it was advisable to apply forceps to the head above the brim, that were of interest. They saw so many cases when it was already too late to do the proper operation which should have been done had they been earlier in charge of the labor. There was nothing left to do but a possible forceps or a craniotomy. A used and abused uterus was inelastic and would rupture readily

with a late version. Great aid was rendered in the simple flat pelvis by putting the patient in the Walcher position. Inertia uteri, in multipara, delayed dry labor in normal pelves, dystocia resulting from rigidity of the cervix, neglected presentations of the brow at the brim, were situations, illustrated by case reports, in which the high application of forceps was justifiable. Before applying forceps to the floating head, first be assured by suprapubic pressure that the head could be made to bite into the brim. If it should not so engage it was almost certain that it could not be safely delivered with forceps, except with the aid of pubiotomy. One should always desist from further attempts with forceps if after one or two moderate tractions on the instrument the head failed to enter the pelvis.

Dr. William S. Stone believed that Dr. Harrar had given a very fair presentation of this subject. He wished to emphasize one or two points. He recalled his first case in which this operation was attempted and the forceps were applied three times. One should have an exact idea as to the relation of the head to the pelvis in order to determine whether or not the forceps should be used. In many of these cases, if a keener diagnosis had been made, craniotomy would have been resorted to. After hearing the paper one was struck by the difficulty of doing the high forceps operation; this operation was more difficult than was ordinarily believed and should be carried out only by men who were specially qualified to do the work. Dr. Stone said he had received a very important point from the late Dr. Emmett and that was to apply the forceps, whether the head was high, medium, or low, when there was flowing; in other words, no matter where the head was when it became stationary (not receding between pains) the forceps should be applied and that without waiting.

Dr. Simon Marx asked what was meant by high forceps operations. The text-books were misleading. When the head was above the brim of the pelvis a high forceps operation was not always required. In many of the cases if they waited a while the head would engage. If the head did not engage there were two reasons: either there was too little water or the head was too small or too large, causing a malposition of the presenting part. In many of these cases there was malposition which could be corrected if recognized early enough. With advancing experience the use of the high forceps operation would not be so much in demand. In many of these cases craniotomy would be preferable for the reason that with these women who had increased pulse rate, high temperature, and all the accompanying disturbances of labor it seemed a crime to attempt the use of high forceps or even to perform version. High forceps operations were usually late operations and frequently the child was already dead, and in these cases it was better to resort to craniotomy.

Dr. Sidney D. Jacobson said that Dr. Harrar was to be congratulated upon his skill in debating this question. Much had been made by various authors of the value of the Walcher position in slight pelvic contraction. He could not agree with Dr. Harrar upon this point and believed that the Walcher position was not of much practical importance. Walcher himself claimed only an increase of about one-half centimeter in the length of the conjugate by hyperextension of the thighs; usually only a few millimeters were added to its length and that could not be of much practical use. Dr. Jacobson further disagreed with Dr. Harrar that pubiotomy could not be regarded as a method of delivery in contracted pelves, but that it was rather an aid to the forceps in delivering the patient. He believed that pubiotomy was well able to accomplish delivery in a contracted pelvis, even without the aid of forceps, but forceps would fail to accomplish delivery without pubiotomy. Hence the argument did not apply.

Dr. Frank A. Dorman said that his interpretation of the high forceps operation was that it lasted a shorter length of time than had been suggested by Dr. Marx. Where there was a larger circumference and with the head above the pelvic brim and not engaging the high forceps operation was indicated. There were positive indications for doing this operation, but the work should be in the hands of a competent operator. Dr. Tucker had obtained results that few could get to-day. At the Sloane Maternity all failed to place the solid blade; it would slip. In regard to version as compared with high forceps operations, statistics would show, as Dr. Harrar had stated, that when carefully done the high forceps operation was better than version. If there was a flattened pelvis better results were obtained by turning the after-coming head if the child was in the transverse diameter. If there was an ample pelvis the child should be delivered early.

Dr. Harrar, in closing the discussion, said he was surprised at what could be learned when they compared the high forceps operation with version. What interested them most was the fetal mortality. The general practitioner seemed to become addicted to the use of version because he was so often without the proper instruments for the high forceps operation. The fetal mortality in these cases was greater than was generally supposed. Craniotomy in many of these cases was justifiable but only when the child was in bad shape with a heart beat above 160. If the high forceps operation could not be done without danger to the mother craniotomy should be considered, especially when it was too late to do a cesarean section.

Immediate Treatment of Depressed Fracture of the Skull in the Newborn.—Dr. George W. Kosmak presented a brief communication in which the advisability of elevation of depressed fractures soon after birth was advocated, reports of three recent cases successfully done were presented and likewise a simple contrivance for this purpose. The speaker said that in his experience all depressions of the skull in the newborn resulting from pressure of projecting parts of the maternal pelvis or from instruments were probably true fractures, and that the simplicity of the operation recommended it as a prophylactic measure in view of the supposed influence of cranial injuries in later life.

Dr. Ralph Munson Beach reported the case of a primipara, 21 years of age, who went into labor at full term October 12 at 5 o'clock P. M. Strong pains began at 8 P. M. and from midnight they occurred at two minute intervals. There was spontaneous rupture of the membranes at 4.30 A. M. and at 5.30 the attending physician made one application of the forceps. After five or six tractions he decided that the head would not come through and Dr. Beach was called in. The vaginal examination showed a flat pelvis with a very sharp protruding promontory. The fetal head was pressed tightly against the inlet in the left occipito-transverse position, both fontanelles being at the same time level; the disproportion was evident. One application of the forceps was made in order to satisfy the friends of the patient and then she was removed to the hospital where he did a cesarean section. The operation was uneventful but the baby was born asphyxiated; he was resuscitated in about fifteen minutes by means of the Schultz method and oxygen. He did not cry vigorously and showed a depression of the skull over the left frontal region extending from the top of the forehead to the coronal suture and from the median line to the temporal region. About six hours after delivery a jerking of the left hand and forearm and then of both forearms was noticed. Later nystagmus appeared in both eyes together with some bulging of the face and an inability to take milk from the bottle. These symptoms continued until after the fourth day, when the baby began to take its milk better. On the tenth day it was decided to raise the depression and this was done by means of the little elevator loaned the speaker by Dr. Kosmak. For twenty-four hours after the elevation of the depression the baby showed some increase of the twitchings and nystagmus, but from that time there had been no symptoms. The baby now appeared normal in every particular.

Dr. Simon Marx said that he had seen many cases of the kind reported and it seemed to him that they got along without any trouble whatever. The method invented by Dr. Kosmak seemed very ingenious but was useful only from a theoretical standpoint.

Dr. Frank A. Dorman said it had been his privilege to see Dr. Kosmak treat depressed fracture of the skull in the newborn by this method and he was very much impressed by the simplicity of the operation. No anesthesia was required, there was no shock following the operation, and there was apparently no chance for sepsis to occur. No cerebral irritation followed. The instrument was cleverly conceived and worthy of trial.

Dr. S. Jacobson congratulated Dr. Kosmak upon the results that he had obtained by the use of this instrument and reported a case in which operation was done under spinal anesthesia; in this instance the baby was born with paralysis of one side of the face while there was an extensive lesion on the opposite side of the brain caused by a depressed fracture. He had had good results with spinal anesthesia during labor. In an article by Harvey Cushing in Keen's surgery the statement was made that 40 per cent. of the cases of intracranial hemorrhage in the newborn recovered.

Dr. Frank A. Dorman said that he had seen one or two cases of depressed fracture of the skull in the newborn in which the depression was relieved by a little massage.

However, the device offered by Dr. Kosmak was very ingenious and practical. If there was a deep furrow the employment of the instrument was all right. Harvey Cushing's statistics had reference to hemorrhage and not to depressed fracture of the skull in the newborn.

Dr. KOSMAK called attention to the advisability of treating these fractures as soon as they occurred. He said that only that day he had seen a boy six years of age with a marked depression of the right frontal bone and no attempt had been made to correct it. The child was not particularly bright but was not epileptic. He always thought these injuries were depressions and not fractures.

PATHOLOGICAL SOCIETY OF PHILADELPHIA.

A STATED meeting was held at the Medico-Chirurgical College on November 7. Dr. GEORGE W. OUTERBRIDGE presented a specimen of "Struma Ovarii," a new growth with respect to which there are many differences of opinion. As a rule benign, in some instances it gives rise to secondary growths, with characters of malignancy. The new tissue is indistinguishable from thyroid structure.

Dr. RUSSELL RICHARDSON exhibited a specimen of "Diffuse Papilloma of the Foot and Leg," developing in a patient to whose lower extremity a bandage was applied firmly for a considerable period of time.

Dr. M. HOWARD FUSSELL exhibited a specimen of "Purulent Pericarditis. The patient presented symptoms of appendicitis, for which an operation was performed, but on the following day symptoms of pneumonia appeared. In the further progress of the case purulent pericarditis developed for which puncture and aspiration were practised, with great relief to the symptoms. On reaccumulation of the fluid in the pericardium a rib was resected, the pus evacuated, and drainage provided for, but the patient failed to recover. After death the pus was found to contain pneumococci in pure culture.

Drs. J. STUART RODMAN and E. A. CASE presented a specimen of "Sarcoma of the Kidney, with Extensive Metastasis, in an Infant." The patient was a child, 17 months old, who presented numerous masses in the abdomen. Operation was undertaken, but the condition was found inoperable and the wound was closed. After the death of the child the right kidney was found the seat of an enormous hypernephroma, and metastases were presented in the mesentery and other structures.

Drs. R. M. PEARCE and H. T. KARSNER presented a communication entitled "Charts Exhibiting Increased Resistance of Red-Blood Corpuscles (Dof) After Splenectomy." The conclusions reached as a result of this investigation are that the increased resistance to hemolysis exhibited by the red blood-corpuscles after removal of the spleen is due to the associated anemia and is observed also when this exists independently of splenectomy.

Dr. JOHN A. KOLMER presented a communication entitled "A Study of Diphtheria Bacilli," in the course of which the behavior of microorganisms from undoubted and suspicious cases of diphtheria of the nose and throat and also of the so-called pseudo-diphtheria was compared.

AT the Conversational Meeting held November 21, Dr Ross G. HARRISON of New Haven, Conn., delivered by invitation, the first lecture of the course founded by the Society as the Samuel D. Gross Annual Lecture, and he spoke of "The Life of Animal Tissues Outside the Organism." He pointed out that it was difficult to say precisely when the first attempts were made to maintain the life of animal tissues outside the organism, but it is certain that efforts to accomplish this end were made by a number of investigators during the second half of the nineteenth century. Dr. Harrison's interest in the subject was aroused from a desire to determine if possible whether nerve-fibers developed gradual extension from a process of a ganglion-cell or are laid down primarily and gradually evolved into a mature and full-formed structure. His original observations were made on embryonic tissues of the frog whose development was studied in hanging drop preparations suspended in fluid obtained from the lymph-sac of that animal. It was found that the nerve originated from the ganglion-cell process and gradually extended to the periphery by gradual growth, the direction of growth being perhaps determined by certain as yet undetermined chemotactic influences. Later studies were made with the aid of blood-serum of various animals. Growth of tissue seemed to be favored by the presence of some supporting structure, such as is constituted by the network of fibrin which forms in coagulated lymph and plasma.

PHILADELPHIA NEUROLOGICAL SOCIETY.

AT a stated meeting held November 22 Dr. TOM A. WILLIAMS reported (1) "A Case of Diffuse Spinal Sclerosis, Non-syphilitic, with Glossitis," and (2) "A Case of Tabes Dorsalis without Lymphocytosis."

Dr. ALFRED GORDON presented "A Case Simulating the Tremor of Multiple Sclerosis." The patient was a man, about 22 years old, who, following the sudden application of cold water to the nape of the neck in the course of treatment for a mild attack of heat-stroke, developed an oscillatory movement of the head, with marked intention-tremor of the hands, the more pronounced on the left side. The disturbance was so severe that the patient was unable to feed himself and to help himself in other ways. There were no sensory changes, no disorder of the reflexes, no nystagmus, no disturbance of speech. The affection was considered functional.

Dr. GORDON presented also "A Case of Palsy of Only the Upper Branch of the Facial Nerve." The patient was a woman, about 37 years old, who was unable to close perfectly the right eye and to move the right half of the forehead, although the mouth could be moved equally to either side.

Dr. E. B. KRUMBHAAR exhibited "A Patient Yielding a Babinski Reflex from the External Half of the Foot, with a Normal Plantar Reflex from the Internal Half." The patient presented a right hemiplegia. When the inner half of the sole of the foot was irritated normal plantar flexion of the great toe took place, while when the outer half of the sole was irritated dorsal extension occurred. Careless examination in a case like this might fail to demonstrate the presence of the Babinski reflex, a phenomenon that has been observed by Babinski himself and by others.

Dr. FRANCIS X. DERCUM, presented "A Case of Somnolence." The patient was a man, about 24 years old, who at the age of fifteen increased considerably in size, and subsequently developed intense somnolence. There were no motor or sensory disorders, no trophic phenomena, no changes in eyegrounds or in reflexes. Sexual desire was diminished. It was thought the condition might be due to some derangement of internal secretion, perhaps of the hypophysis.

Dr. GEORGE E. PRICE presented a communication entitled "Spinal Gliosis Occurring in the Members of the Same Family, Suggesting a Familial Type," and he demonstrated the patients. The children affected were 24, 22, and 13 years old respectively, while two younger children were healthy. In each instance painless whitlows developed on one or other extremity, resulting in loss of parts. There was reduction in pain and temperature sense, but no sensory dissociation. The reflexes were diminished or lost. The cases were considered as examples of the Morvan type of spinal gliosis. Leprosy was excluded.

Drs. T. H. WEISENBURG and L. BEECHE reported "A Case of Lesion of One Superior Cerebellar Peduncle," and they demonstrated the patient. The case occurred in a man almost seventy years old who was seized with left hemiplegia and diplopia, gradually clearing up and followed by ataxia upon the right side of the body.

Dr. CHARLES K. MILLS presented "A Case of Occlusion of the Posterior Inferior Cerebellar Artery."

Drs. ALFRED REGINAL ALLEN and J. EDWIN SWEET presented a communication entitled "The Effect of Removal of the Hypophysis Cerebri in the Dog." Animals from which the gland was removed lived for varying periods of time after the operation, death resulting from various causes. In those that lived for considerable periods after the operation, the most conspicuous phenomena were atrophy of the organs of generation and an increased deposition of adipose tissue, as manifested by increase in weight.

Action of Epinephrin Upon the Coronary Artery.—E. H. Park has found that excised rings of the coronary artery of the ox properly weighted react to epinephrin by dilatation. This reaction of the ox coronary is not an active dilatation, but is in the nature of a sudden lowering from a high to a relatively low degree of tonus. The tonus is not, however, entirely abolished by epinephrin. The degree of relaxation produced by epinephrin is not constant. It depends on several factors other than the concentration of epinephrin used. It is possible to increase the sensitiveness of the coronary artery to epinephrin. There is no evidence of any primary constrictor effect on the ox coronary from epinephrin in most dilute solutions, nor can the existence in this artery of any constrictor mechanism of sympathetic origin be determined by the excised ring method.—*Journal of Experimental Medicine.*

Medicolegal Notes.

Impeachment of Medical Experts' Testimony.—The testimony of a medical expert cannot be impeached by instances of special cases in which he may have been mistaken in his diagnosis. That would bring in issue the question as to whether or not in each particular case the diagnosis was correct or incorrect. Testimony as to the witness's general reputation, and not as to his success or failure in special cases, is admissible for the purpose of impeachment.

In support of a medical expert's qualification, testimony was held properly admitted showing that the expert had held many positions in different sanatoriums and hospitals, where he had had extensive experience in medicine and surgery, such evidence tending to show expert opportunities and experience.—Southern Ry. Co. v. Parham, Georgia Court of Appeals, 73 S. E., 763.

Opinion Based on Third Person's Statements Inadmissible.—In an action for injuries a physician testified for the plaintiff that he saw her two months after the accident; that she exhibited to him a scar about two inches long across the top of her head, which she said she had received from being thrown out of a carriage; that she complained that since the accident she had suffered from various nervous manifestations, dizziness, headache, and the like. He further testified that a physician could not prove whether a woman was sleepless or dizzy, and that he had to rely upon her statements for that. It was held that the physician's opinion, based upon the plaintiff's statements, was inadmissible.—John J. Radel Co. v. Borches, Kentucky Court of Appeals, 145 S. W. 155.

Expert's Right to Guaranty of Fees.—In a criminal case a physician was called to the witness stand by counsel for the defendant and asked to examine a rock and say, by a mere inspection and without a microscopical examination or other scientific analysis of certain spots on the rock, whether there were blood stains thereon. The doctor refused to testify as an expert unless he was guaranteed the usual fee for such services, and counsel for the defendant requested the court to make an order for the payment of such fee out of the county treasury, declaring that his client was without the means to defray the expense. This the court refused to do. The doctor, having been sworn as a witness, could have been required to answer such pertinent questions as might have been put to him, notwithstanding that they might call for expert testimony and though the doctor was not recompensed or guaranteed compensation for his services as an expert, but the court would not have been authorized to compel him to go to the trouble and probable expense of scientifically investigating the cause of the marks on the rock for the purpose of qualifying himself to give expert testimony on the subject.—People v. Conte (Cal.), 122 Pac. 450.

Claims Against County—Authority to Employ Physician.—In an action by a physician against a board of county commissioners in the State of Kansas for compensation for services one of the causes of action stated that the health officer of the county was called on by another doctor to diagnose a case, and they disagreed. The other doctor called in the plaintiff for a consultation which the health officer, though notified, did not attend. The plaintiff, like the other doctor, pronounced the case to be diphtheria, from which four children in one family were suffering. He quarantined the family at their home, administered antitoxin, and gave general instructions for the treatment and isolation of the cases and of the family, and for the protection of the public against the spread of the disease. The county had a poor farm, but one with no facilities or conveniences for isolating or quarantining persons suffering from contagious or infectious diseases. He presented a bill for $15, alleged to be a reasonable compensation, to the county board, who refused to pay. It was held that the plaintiff, not being a volunteer, but answering the call of the attending physician, acted promptly and properly, and, in so far at least as his services tended to such protection, a moral obligation existed for his reasonable compensation. As, however, the pleading showed that his services were performed upon the request of one who had no authority to bind the county, and did not allege that the family were unable or unwilling to pay for the services, it was held that a cause of action was not stated.

Other items were for services rendered, on the order of the mayor of the city of the third class within the county, to non-residents suffering respectively from catalepsy, appendicitis, and broken collar bone. It was held that the plaintiff was entitled to the reasonable value of his services and treatment afforded such persons.—Dykes v. Board of Com., Kansas Supreme Court, 121 Pac. 1112.

Books Received.

The MEDICAL RECORD *is pleased to receive all new publications which may be sent to it, and an acknowledgment will promptly be made of their receipt under this heading, but it must be with the distinct understanding that it is under no obligation to notice or review any publication received by it which in the judgment of its editor will not be of interest to its readers.*

DIE PRAXIS DER SALVARSANBEHANDLUNG. By Dr. GENNERICH. 97 pages; paper; price 3.60 M. August Hirschwald, Publisher, Berlin.

YEAR-BOOK OF THE MEDICAL ASSOCIATION OF THE GREATER CITY OF NEW YORK—1912. Edited by P. Brynberg Porter, A.M., M.D. 171 pages; cloth.

SEHPROBEN-TAFELN. By Prof. Dr. BERTHOLD KERN and Dr. REINHOLD SCHOLZ. 15 pages; paper; price 3 M. August Hirschwald, Publisher, Berlin.

MANUEL PRATIQUE DE KINÉSITHÉRAPIE. Part V. By F. WETTERWALD and RAOUL LEROY. 240 pages; illustrated; paper; price 4 fr. Felix Alcan, Publisher, Paris.

OUTLINES OF PHYSIOLOGY. By EDWARD GROVES JONES, A.B., M.D. and ALLEN H. BUNCE, A.B., M.D. Third Edition. 372 pages; illustrated; cloth; price $1.50 net. P. Blakiston's Son & Company, Publishers, Philadelphia.

GRUNDZÜGE FÜR DIE ERNÄHRUNG VON ZUCKERKRANKEN. By Prof. Dr. ALBERT ALBU. 163 pages; cloth; price 4 M. Carl Marhold, Publisher, Halle.

PHYSIOLOGISCHE UND THERAPEUTISCHE WIRKUNGEN DES RADIUMS UND THORIUMS. By Dr. ALFRED FÜRSTENBERG. 68 pages; paper; price 1.80 M. Carl Marhold, Publisher, Halle.

THE PROGNOSIS AND TREATMENT OF DISEASES OF THE HEART. By R. O. MOON, M.A., M.D., F.R.C.P. 111 pages; cloth; price $1.25 net. Longmans, Green & Company, Publishers, New York.

THE SHIP CAPTAIN'S MEDICAL GUIDE. Edited by CHARLES BURLAND, M.D., F.R.G.S. 214 pages; illustrated; cloth; price 2s. Board of Trade, Publishers, London, England.

BACTERIA. By Dr. MAX SCHOTTELIUS. Second Edition. 324 pages; illustrated; cloth; price $2.50. Oxford University Press, Publishers, New York.

SECOND ANNUAL REPORT OF THE STATE CHARITIES COMMISSION TO THE HONORABLE CHARLES S. DENEEN, GOVERNOR OF ILLINOIS. 532 pages; cloth.

A SYNOPSIS OF MEDICAL TREATMENT. By GEORGE CHEEVER SHATTUCK, M.D. 60 pages; illustrated; cloth. W. M. Leonard, Publisher, Boston.

DIE KLINISCHE STELLUNG DER SOGENANNTEN GENUINEN EPILEPSIE. By Prof. Dr. E. REDLICH and Prof. Dr. O. BINSWANGER. 146 pages; paper; price 6 M. S. KARGER, Publisher, Berlin.

THE TRANSACTIONS OF THE EDINBURGH OBSTETRICAL SOCIETY. Vol. XXXVII. Session 1911-1912. 320 pages; illustrated; cloth. Oliver & Boyd, Publishers, Edinburgh.

PENAL PHILOSOPHY. By GABRIEL TARDE. 581 pages; cloth; price $5.00 net. Little, Brown & Co., Publishers, Boston.

FORENSIC MEDICINE AND TOXICOLOGY. By G. O. HAWTHORNE, M.D. Third Edition. 344 pages; cloth; price $1.70 net. Longmans, Green & Company, Publishers, New York.

THE PROTEIN ELEMENT IN NUTRITION. By Major D. MCCAY. 216 pages; illustrated; cloth; price $3.00 net. Longmans, Green & Company, Publishers, New York.

UEBER DIE SERODIAGNOSE DER SYPHILIS. By Dr. A. BRAUER. 40 pages; paper; price 1.20 M. Carl Marhold, Publisher, Halle.

THE CARRIER PROBLEM IN INFECTIOUS DISEASES. By J. C. LEDINGHAM, M.B., D.Sc. and J. A. ARKWRIGHT, M.D. 310 pages; cloth; price $3.50 net. Longmans, Green & Company, Publishers, New York.

AIDS TO TROPICAL HYGIENE. By Major R. J. BLACKHAM. 187 pages; cloth; price $1.25 net. William Wood & Company, Publishers, New York.

THE CLINICAL PATHOLOGY OF SYPHILIS AND PARASYPHILIS. By HUGH WANSEY BAYLY, M.A., M.R.C.S., L.R.C.P. 191 pages; illustrated; cloth; price $2.25 net. William Wood & Company, Publishers, New York.

PHYSICAL DIAGNOSIS. By RICHARD C. CABOT, M.D. Fifth Edition. 510 pages; illustrated with five plates and 268 figures in the text; cloth; price $3.00 net. William Wood & Company, Publishers, New York.

THE TREATMENT OF INFANTILE PARALYSIS. By OSKAR VULPIUS M.D. 318 pages; illustrated; cloth; price $4.00 net. William Wood & Company, Publishers, New York.

LEHRBUCH UND ATLAS DER KONSERVIERENDEN ZAHNHEILKUNDE. By Dr. GUSTAV PREISWERK. 404 pages; illustrated; cloth; price 14 M. J. F. Lehmann, Publisher, Munchen.

Miscellany.

Alcoholism in the Eighteenth Century.—Charles Mercier presents the following interesting description of the convivial customs of former days: "In the latter part of the eighteenth century, people sat down to dinner at 4 or 5 o'clock in the afternoon. Dinner was a stately and solemn ceremony, as needs must be when host and hostess carved for their guests, and were allowed after each course a quarter of an hour's law, to eat their own when the others had finished. After two or three hours, the cloth was removed, and the decanters went round in coasters on the polished mahogany. After a decent interval, the stories began to broaden, and the ladies retired, while the gentlemen settled down to the business of the evening. From that time until midnight, drinking went on; not rapid or furious drinking, but slow and steady absorption, as the decanters went round. From time to time the process was accelerated by the host calling upon one of his guests for a toast, or a sentiment, and then all were obliged to fill and empty their glasses. Nowadays, no one notices whether a health is actually drunk or not, but in those days the rule against heel-taps was rigorously enforced, and he who left any remainder in his glass was held to be wanting in respect and loyalty to the toast, and might very well have to answer for his negligence next morning in a duel. The fashion of the toast is still with us, but in a mitigated and attenuated form. We do not now toast the reigning beauty, and the rule against heel-taps is no longer enforced; and we are spared altogether the horrors of the sentiment. We are not now called upon after dinner to drink to 'the reflection of the moon on the calm bosom of the lake,' or to 'the man who would place king and country before life and wealth.' We should as soon think of toasting the man who broke the bank at Monte Carlo.

"In the days I speak of, our forefathers did not dine by the light of the electric filament, or of incandescent mantles, for in the reign of George III. these conveniences had not yet been invented. They dined by candle light, and from time to time the servants came in to snuff the candles, and took the opportunity to loosen the cravats of those guests who had subsided under the table. At length the orgies came to an end, and the half-drunken servants staggered in to carry their wholly drunken masters to bed.

"In those days, the doctor was often half seas over when he attended his drunken patient; the parson was often drunk in the pulpit; judge, counsel, and attorneys pursued their avocations in court in a prevailing atmosphere of hot coppers. The Prime Minister went drunk to the House of Commons, where he was attacked by the leader of the Opposition, also drunk, while order was kept by a Speaker who was half seas over. There was no excise on spirits, and the coarser kinds of distilled liquors were ridiculously cheap. As you passed along the bye streets of London, and perhaps of other great cities, you might read the legend hung out over the drink cellars, 'Here you may get drunk for a penny: dead drunk and clean straw for twopence.'"—*The Lancet*, November 30, 1912.

Woman's Place in Medicine.—H. Drinkwater takes exception to the statement frequently made that women have not contributed very materially to the advancement of practical medicine, for there are at least two therapeutic measures for which they can claim credit. Madame Mouffer possessed a secret nostrum for the treatment of *Tenia solium*, and in 1775 Louis XVI. purchased it from her for 18,000 francs. It proved to be the rhizome of male fern. This was its introduction into France. It fell into disuse until again recommended by C. Peschiers in a work published in 1826. The discovery of radium was due chiefly to Madame Curie. Though it cannot be claimed for women that up to the present they have contributed largely to the theoretical or practical side of medicine, surgery, or gynecology, there is one closely related subject in which they have certainly taken the initiative and leading part, and which they have brought to a high state of perfection as a science and an art—namely, nursing. Women were closely identified with the early history of obstetrics. One thing which helped to place the greater part of the practice of midwifery in the hands of women—in England as well as on the Continent—was the fact that most of the physicians and many of the leading surgeons were members of the priesthood; and we read that Guy of Chauliac thought it did not become a priest to have anything to do with obstetrics or gynecology. What the future will bring no one can tell. At present, medical women occupy so many posts as lecturers, hospital physicians, surgeons, and accouchenses, medical officers of health, school medical officers, besides those in general practice—their number is so rapidly increasing, and their work is done in such a satisfactory manner—that the chief difference between medical men and medical women will be a numerical one if the latter will give their attention to original research and pursue it with the same enthusiasm that they manifest in other departments.—*Liverpool Medico-Chirurgical Journal*, January, 1912.

Diagnostic Cloaks for Carelessness.—H. Macnaughton Jones once pointed out that the words, "neurosis," "neurasthenia," and "hysteria" are given as convenient excuses when patience and trouble are alike demanded in a reasonable search after the true cause of a woman's complaint. There are no more dangerous terms in the gynecological vocabulary than these. They are apt to lead the young and unwary practitioner into a diagnostic cul-de-sac, missing, in his stumble therein, the track to some serious pathological condition.—*Clinical Journal.*

The Present Discontent.—No one has explained the cause of the discontent and the unsatisfactory position of the doctor more happily than Bacon, whose summary of the position will bear quotation:—"Almost all other arts and sciences are judged by their power and operation and not by their successe and worke. . . . Therefore, it often falls out that the imposter bears away the prize, virtue the censure. Nay, the weaknesse and credulity of men is such, as they often preferre a montebank, or witch, before a learn'd physitian. . . . And what I pray yee followes? Even this, that physitians say to themselves, as Salomon expresseth it upon a higher occasion, *If it befalls to me as it befalls to the foole, why should I labor to be more wise?* Therefore, I cannot much blame physitians, if they use commonly to intend some other art which they fancy more than their own profession; for you shall have of them, poets, antiquaries, politicians, critics, divines, and in these arts better seen than in their own profession."—*The Universal Medical Record*, November, 1912.

INDEX TO PAGES.

INDEX.

C.

F.

N

P

U